### Document Change Record

This page records changes to this document. The document was originally released as version -00.

<table>
<thead>
<tr>
<th>Version</th>
<th>Date</th>
<th>Description of Change</th>
</tr>
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<tbody>
<tr>
<td>-00</td>
<td>May 2003</td>
<td>Supports original IPL version (v2.00).</td>
</tr>
<tr>
<td>-01</td>
<td>Oct. 2003</td>
<td>Revised to support IPL v2.10. Information about EasyLAN Wireless interface added.</td>
</tr>
</tbody>
</table>
**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 PF4i Compact Industrial**

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

\[\text{Per-Ove Jacobsson}\]

\(^1\) 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.
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Before You Begin

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

Safety Summary

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

Do not repair or adjust alone

Do not repair or adjust energized equipment alone under any circumstances. Someone capable of providing first aid must always be present for your safety.

First aid

Always obtain first aid or medical attention immediately after an injury. Never neglect an injury, no matter how slight it seems.

Resuscitation

Begin resuscitation immediately if someone is injured and stops breathing. Any delay could result in death. To work on or near high voltage, you should be familiar with approved industrial first aid methods.

Energized equipment

Never work on energized equipment unless authorized by a responsible authority. Energized electrical equipment is dangerous. Electrical shock from energized equipment can cause death. If you must perform authorized emergency work on energized equipment, be sure that you comply strictly with approved safety regulations.
Before You Begin

Safety Icons

This section explains how to identify and understand dangers, warnings, cautions, and notes that are in this document. You may also see icons that tell you when to follow ESD procedures.

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

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

This icon appears at the beginning of any procedure in this manual that could cause you to touch components (such as printed circuit boards) that are susceptible to damage from electrostatic discharge (ESD). When you see this icon, you must follow standard ESD guidelines to avoid damaging the equipment you are servicing.

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

Warranty Information
To understand the warranty for your Intermec product, visit the Intermec web site at http://www.intermec.com and click Service & Support. The Intermec Global Sales & Service page appears. From the Service & Support menu, move your pointer over Support, and then click Warranty.

Web Support
Visit the Intermec web site at http://www.intermec.com to download our current documents in PDF format. To order printed versions of the Intermec manuals, contact your local Intermec representative or distributor.

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

Telephone Support
Contact your local Intermec representative. To search for your local representative, from the Intermec web site, click Contact.

Related Documents
The Intermec web site at http://www.intermec.com contains our current documents that you can download in PDF format. To order printed versions of the Intermec manuals, contact your local Intermec representative or distributor.
Before You Begin
1 Introduction

This chapter introduces the EasyCoder PF4i Compact Industrial printer. The chapter covers the following topics:

- Description of EasyCoder PF4i Compact Industrial
- Safety summary
- Product identification
Description of EasyCoder PF4i Compact Industrial

The EasyCoder PF4i Compact Industrial is a sturdy industrial thermal transfer printer with a printhead resolution of 8 dots/mm = 203.2 dot/ inch (standard) and a maximum print width of 104 mm (4.095 inches). It 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 PF4i Compact Industrial supports the Intermec Programming Language (IPL v2.20). A version of EasyCoder PF4i Compact Industrial, that supports Intermec Fingerprint v8.20, 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 doors are open, so ensure that the doors are 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 7 to 8 kg (15.5 to 17.7 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.
This chapter explains how to unpack and install the EasyCoder PF4i Compact Industrial 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
Chapter 2—Installation

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 PF4i Compact Industrial printer
  - Two sets of Quick-Load Guides (wide and narrow)
  - Power cord
  - Quality check card
  - Cleaning card
  - Short strip of labels
  - Starter pack of thermal transfer ribbon
  - This User’s Guide
  - Supporting software and product information on CD.
- Check that the type of power cord is appropriate for the local standard. The printer works within 90 to 265 VAC, 50 to 60 Hz.

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.
Chapter 2—Installation

Front View

At the front of the printer are the display window, the indicator 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.
Chapter 2—Installation

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 as standard covered by a long side door that completely encloses the print mechanism and media compartment. (Optionally, the printer can be fitted with a two part “Megatop” that allows a larger media roll to be used.) 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.”
Chapter 2—Installation

The EasyCoder PF4i Compact Industrial 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 and whether the printer is fitted with an integral liner takeup or not. 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.

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 slots and threaded holes 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 unit and/or the full enclosure provided by the long side door or Megatop. 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 not used.
- Position 3 is used when the printer has an integral liner takeup unit and a long side door. This position is also used with the 8-inch Megatop. 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, except when it has an 8-inch Megatop.
Chapter 2—Installation

Print Mechanism

The print mechanism features a high-performance thermal printhead with quick-mount fittings to facilitate replacement.
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 PF4i Compact Industrial 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 Chapter 6, Chapter 7, and Appendix C for connection and setup instructions.

The printer scans all communication ports. When it detects incoming data on a port, the printer automatically switches to use that port for both input and output.

To get information in the display window on the active communication channels, press the <i> key.

Switch off both PC and printer before connecting them together.
Controls and Indicators

The EasyCoder PF4i Compact Industrial has several ways of communicating directly with its operator: three colored indicator lamps, a display window, a membrane-switch keyboard with 7 keys, a large Feed/Pause button on the printer’s front, and a beeper.

Indicator Lamps

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

- **Power** (solid green) indicates that the power is on.
- **Status** (solid green) indicates that the printer is ready for use.
- **Status** (flashing green) indicates that the printer is communicating.
- **Status** (solid red) indicates an error condition (see Chapter 9).
- **Intermec Readiness Indicator** (blue; on, blink, or off).

Represented by a blue light on Intermec handheld computers, access points, and printers, the Intermec Readiness Indicator is part of an exclusive monitoring system from Intermec. The Intermec Readiness Indicator helps users quickly determine the readiness of the Intermec device individually and as part of a solution. The Intermec Readiness Indicator has three different states: On, Blinking, and Off. When the Indicator is off, the device is not ready to operate individually or as part of a solution. When the Indicator is blinking, the device may be initializing, waiting for external resources, or in need of user attention. And when the Indicator is On, the device is ready for use as part of a solution. Also see Chapter 9.
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:

<table>
<thead>
<tr>
<th>Error</th>
<th>Displayed message</th>
</tr>
</thead>
<tbody>
<tr>
<td>Empty/Paused</td>
<td>Paused</td>
</tr>
<tr>
<td>Out of media</td>
<td>Paper out</td>
</tr>
<tr>
<td>Out of ribbon</td>
<td>Ribbon out</td>
</tr>
<tr>
<td>Printhead lifted</td>
<td>Print Head UP/Press Feed</td>
</tr>
<tr>
<td>Cutter error</td>
<td>Open&amp;shut cutter</td>
</tr>
<tr>
<td>Ribbon fitted</td>
<td>Ribbon fitted</td>
</tr>
<tr>
<td>Paper fault</td>
<td>Paper fault</td>
</tr>
</tbody>
</table>

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).
  - **i**: Display error messages and communication channel information.
  - Scroll between various types of information after pressing the <i> key. Possible error messages and information on active communication channels are shown in a loop.

### 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.
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 2.20

The message indicates the IPL version number.
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)
- Cut-Off
- Peel-Off (self-strip)
- External supply (fan-folds)
Tear-Off (Straight-through)

The EasyCoder PF4i Compact Industrial 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 D.
Tear-Off, cont.

1. Open the front and side doors.

2. Turn the printhead lift lever clockwise to raise the printhead.

3. If necessary, fold down the edge guide. 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. Close the edge guide on the media supply post.

6. This diagram shows the media path.

7. Turn the printhead lift lever counterclockwise 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 front and side door, making sure that the media runs through the slot in the front door.

**10** Press the Feed/Pause button to advance the media and adjust the media feed. Tear off the media by pulling it either upwards or downwards.
Chapter 4—Media Load

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 PF4i Compact Industrial can optionally be fitted with a set of Quick-Load guides that makes media load much easier and quicker.

The printer is normally delivered with two different sets of Quick-Load guides: wide and narrow. The wide type generally guides the media better, but the media must be at least 80 mm (3.15 inches) wide. The narrow type allows a media width as narrow as 40 mm (1.57 inches), but it may be less suited for wide and thin media.

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 D.
Tear-Off with Quick-Load, cont.

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

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

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.
Chapter 4—Media Load

Tear-Off with Quick-Load, cont.

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

6. Close the front and side doors, making sure that the media runs through the slot in the front door.
**Cut-Off**

The EasyCoder PF4i Compact Industrial can print on labels, tickets, tags, and continuous stock in various forms. This section describes the case when the media is to be cut off by an automatic paper cutter (option).

Cut-off can be used for:

- Non-adhesive continuous stock
- Self-adhesive labels with liner (cut only liner between labels)

The cutter is designed to cut through paper-based media with a thickness between 60 and 175 µm, which roughly corresponds to a paper weight of 60 to 175 grams/m² (basis weight 40 to 120 lb). The cutter should not be used to cut through labels, because the adhesive will stick to the shears, which can damage the cutter.

The cutter is held by a snap-lock and can be tilted forward to facilitate media load. A switch prevents the cutter from operating when in open position.

The optional label taken sensor cannot be used with the cutter.

The paper cutter can be used with both a standard edge guide and Quick-Load guides and with any type of side door. In this chapter, a printer with a standard edge guide and a long side door is illustrated.

There is no front door when a cutter is installed.

*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 D.
Chapter 4—Media Load

Cut-Off, cont.

1. Open the cutter and the side door.

2. Turn the printhead lift lever clockwise to raise the printhead.

3. If necessary, fold down the edge guide. 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.
Chapter 4—Media Load

Cut-Off, cont.

5

Route the media through the print mechanism and cutter. Then push it towards the center section as far as it will go.

6

This diagram shows the media path.

7

Turn the printhead lift lever counterclockwise to engage the printhead.

8

Adjust the position of the green edge guide so the media is guided with a minimum of play.
Chapter 4—Media Load

Cut-Off, cont.

9
Close the side door.

10
Close the cutter while pulling at the media.

11
An optional tray can be attached to the cutter to collect the cut off labels, tickets, or tags.

12
Press the Feed/Pause button to advance the media and adjust the media feed.
Peel-Off (Self-strip)

The EasyCoder PF4i Compact Industrial 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 D.

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.
Chapter 4—Media Load

Peel-Off, cont.

1. Open the front and side doors.

2. Turn the printhead lift lever clockwise to raise the printhead.

3. Pull out the handle to collapse the takeup hub, then remove any liner.

4. If necessary, fold down the edge guide. Remove any empty core from the media supply roll post.
Peel-Off, cont.

5. Fit a new roll of labels on the supply post.

6. Remove labels from the first 50 cm (20 inches) of the liner. Route the liner through the print mechanism, push it inwards, and adjust the edge guide so the label path becomes flush with the center section.

7. Close the edge guide. 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.

This diagram shows the media and liner paths.

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

Turn the printhead lift lever counterclockwise to engage the printhead.

Close the front and side doors.
Peel-Off, cont.

Press the Feed/Pause button to advance the media and adjust the media feed.
Chapter 4—Media Load

External Supply (Fan-fold)

The EasyCoder PF4i Compact Industrial 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 only be used with a long side door, not the megatop. 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.
This chapter explains how to load the printer with ribbon for thermal transfer printing.
Chapter 5—Thermal Transfer Printing

Ribbon Load

The EasyCoder PF4i Compact Industrial 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.

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 PF4i Compact Industrial 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 D.
Chapter 5—Thermal Transfer Printing

Ribbon Load, cont.

1. Open the front and side doors.

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.
Chapter 5—Thermal Transfer Printing

Ribbon Load, cont.

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

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

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

Slide the empty cardboard core onto the ribbon rewind hub so the ribbon rewound 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 counterclockwise to engage the printhead.

12
Close the front and side doors.
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.
Chapter 6—Setting Up the Printer

**Description**

The setup controls the printer in regard of serial communication, test and service operations, and specifies which types of media and ribbon are 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 options included):

<table>
<thead>
<tr>
<th>Ser-Com</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Baud rate</td>
<td>9600 bps</td>
</tr>
<tr>
<td>Data bits</td>
<td>8 bits</td>
</tr>
<tr>
<td>Parity</td>
<td>None</td>
</tr>
<tr>
<td>Stop bits</td>
<td>1 bit</td>
</tr>
<tr>
<td>Protocol</td>
<td>XON/XOFF</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test/Service</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Testprint</td>
<td>not applicable</td>
</tr>
<tr>
<td>Data dump</td>
<td>No</td>
</tr>
<tr>
<td>Memory reset</td>
<td>not applicable</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Media</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Media type</td>
<td>Gap</td>
</tr>
<tr>
<td>Paper type</td>
<td>DT</td>
</tr>
<tr>
<td>Label length</td>
<td>1200 dots</td>
</tr>
<tr>
<td>Sensitivity</td>
<td>420</td>
</tr>
<tr>
<td>Darkness</td>
<td>0%</td>
</tr>
<tr>
<td>Label rest point</td>
<td>0</td>
</tr>
<tr>
<td>Form adj dots X</td>
<td>0</td>
</tr>
<tr>
<td>Form adj dots Y</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Configuration</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Emulation</td>
<td>None</td>
</tr>
<tr>
<td>Print speed</td>
<td>4 in/sec</td>
</tr>
<tr>
<td>Cutter</td>
<td>Not installed</td>
</tr>
<tr>
<td>Label taken sensor</td>
<td>Not installed</td>
</tr>
</tbody>
</table>
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.

<table>
<thead>
<tr>
<th>Condition</th>
<th>Character</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buffer already full</td>
<td>GS</td>
</tr>
<tr>
<td>Printhead raised</td>
<td>US</td>
</tr>
<tr>
<td>Ribbon fault</td>
<td>US</td>
</tr>
<tr>
<td>No label stock</td>
<td>EM</td>
</tr>
<tr>
<td>Buffer now full</td>
<td>DC4</td>
</tr>
<tr>
<td>Printhead hot</td>
<td>SI</td>
</tr>
<tr>
<td>Label at strip pin</td>
<td>FS</td>
</tr>
<tr>
<td>Label skipping</td>
<td>DC2</td>
</tr>
<tr>
<td>Printing</td>
<td>DC2</td>
</tr>
</tbody>
</table>
Chapter 6—Setting Up the Printer

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

<table>
<thead>
<tr>
<th>Condition</th>
<th>Character</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buffer already full</td>
<td>GS</td>
</tr>
<tr>
<td>Printhead raised</td>
<td>US</td>
</tr>
<tr>
<td>Ribbon fault</td>
<td>US</td>
</tr>
<tr>
<td>No label stock</td>
<td>EM</td>
</tr>
<tr>
<td>Buffer now full</td>
<td>DC3</td>
</tr>
<tr>
<td>Printhead hot</td>
<td>SI</td>
</tr>
<tr>
<td>Label at strip pin</td>
<td>FS</td>
</tr>
<tr>
<td>Label skipping</td>
<td>DC1</td>
</tr>
<tr>
<td>Ready</td>
<td>DC1</td>
</tr>
<tr>
<td>Printing</td>
<td>DC1</td>
</tr>
</tbody>
</table>
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
Chapter 6—Setting Up the Printer

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 printhead and the print speed. Standard supplies from Intermec are labeled with a 3-digit media sensitivity number (see Appendix D) 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]`).
**Chapter 6—Setting Up the Printer**

**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 (\texttt{<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 (option)
If no cutter is installed, “Not Installed” is displayed as a read-only message. If a cutter is installed, you can select between “Enable”, and “Disable”.

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 sensitivity 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.
Returning to Factory Default Setup

There are two ways to return to the factory default setup of the printer:

A  Insert a special CompactFlash memory card and restart the printer.
B  Using the printer’s built-in keyboard.

To reset the printer using the keyboard, do like this:

1  Lift the printhead.
2  Switch on the power to the printer and press the <i> key and wait until the printer beeps.
3  Swiftly press the following keys:
   <▼> → <▲/Esc> → <▲/Esc> → <▼>
4  The following message will be displayed:
   ![Factory Default? Enter=Yes ESC=No]
5  Within 10 seconds, press <Enter> to reset the printer to factory default. The parameters will be reset and the printer will continue the normal startup.

If you press <▲/Esc> or wait until the 10 seconds timeout has passed, the normal startup will continue without any reset being performed.

Note: The factory default will remove all files used to store settings. It will not reset settings that already has been read when the files are removed. This means that EasyLAN Wireless settings (SSID, keys, etc.) will retain their values from the previous start. However, the next reboot will reset them to factory default.
7 Setup Mode

This chapter describes how to navigate in the setup mode, and provides overviews of the setup mode.
Chapter 7—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.

<table>
<thead>
<tr>
<th>Key</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>←</td>
<td>Move one step back on the same level.</td>
</tr>
<tr>
<td>ESC</td>
<td>Move up one level and escape without changing the setting.</td>
</tr>
<tr>
<td>→</td>
<td>Move forward on the same level.</td>
</tr>
<tr>
<td>↓</td>
<td>Move down one level.</td>
</tr>
<tr>
<td>Enter</td>
<td>Acknowledge and move to next menu.</td>
</tr>
<tr>
<td>Setup</td>
<td>Exit the Setup Mode. Can be used anywhere in Setup Mode.</td>
</tr>
</tbody>
</table>
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.
Legend:

Dotted boxes and lines indicate options.
Thick boxes indicate default options.
Values inside brackets indicate default settings.
Setup Mode; Network (option)

(IPL v2.20)

These menus will only be displayed when an optional EasyLAN interface board is installed.
Setup Mode; Media

(IPL v2.20)
Chapter 7—Setup Mode

Setup Mode; Configuration

(IPL v2.20)
This chapter describes the options available for the EasyCoder PF4i Compact Industrial 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 PF4i Compact Industrial provides a high degree of flexibility because it has a modular design. By adding options to the basic printer, the EasyCoder PF4i Compact Industrial 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.
Chapter 8—Options

Side Doors and Megatop

The EasyCoder PF4i Compact Industrial comes with two types of side door. The standard long door encloses the entire media compartment and allows a media roll with a diameter of 152 mm (6 inches). It also has a slot for external media supply. The 8-inch Megatop has a hinged transparent canopy that encloses a media roll with a diameter of up to 213 mm (8.38 inches). The standard long side door is generally illustrated throughout this manual.

Paper Cutter

The paper cutter is a factory- or field-installable option designed to cut off continuous paper-based stock or liner between labels. The cut-off labels, tickets, or tags can be collected on an optional tray.

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.
Chapter 8—Options

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.

The LTS cannot be used in connection with a paper cutter.

Thick Media Printhead
In addition to the standard printhead, which is designed for a maximum media thickness of 175 µm (7 mils) there is an optional printhead for thick media (170 to 220µm/6.6 to 8.7 mils). The printhead can easily be replaced or exchanged by the operator as described in Chapter 10.

Interface Boards
A number of interface boards are available for use with the EasyCoder PF4i Compact Industrial. The interface boards are either factory-fitted or can easily be fitted by an authorized service technician.

The EasyCoder PF4i Compact Industrial can accommodate one EasyLAN interface board plus one Parallel Interface Board (IEEE 1284).
This chapter describes how the Intermec Readiness Indicators work. It also lists various possible cases of inferior printout quality, describes possible causes, and suggests remedies.
Chapter 9—Troubleshooting

Intermec Readiness Indicator

The readiness of the printer, individually or as a part of a solution, is indicated by the blue Intermec Readiness Indicator (IRI).

If the IRI blinks or is switched off, the printer is not ready. Further information can be obtained in the display window by pressing the <i> key. In case of several errors or similar conditions occurring simultaneously, only the most significant error is displayed. Once this error has been cleared, next remaining error is displayed.

Provided the printer is connected to a network, all conditions that prevent printing are reported to the Easy ADC Console. The Easy ADC Console is a PC-based software which allows a supervisor to monitor all connected devices that have an Intermec Readiness Indicator, including handheld computers, access points, and printers.
## Display Messages and LED Indications

<table>
<thead>
<tr>
<th>Error/Event</th>
<th>IRI</th>
<th>Error Message</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operational</td>
<td>On</td>
<td></td>
<td>No error</td>
</tr>
<tr>
<td>Out of paper</td>
<td>Blink</td>
<td>PAPER OUT</td>
<td></td>
</tr>
<tr>
<td>Out of transfer ribbon</td>
<td>Blink</td>
<td>RIBBON OUT</td>
<td></td>
</tr>
<tr>
<td>Transfer ribbon is installed</td>
<td>Blink</td>
<td>RIBBON FITTED</td>
<td></td>
</tr>
<tr>
<td>Head lifted</td>
<td>Blink</td>
<td>PRINTHEAD UP</td>
<td></td>
</tr>
<tr>
<td>Cutter error1</td>
<td>Blink</td>
<td>OPEN&amp;SHUT CUTTER</td>
<td></td>
</tr>
<tr>
<td>Cutter error2</td>
<td>Blink</td>
<td>OPEN&amp;SHUT CUTTER</td>
<td></td>
</tr>
<tr>
<td>Cutter error3</td>
<td>Blink</td>
<td>OPEN&amp;SHUT CUTTER</td>
<td></td>
</tr>
<tr>
<td>Lss too high</td>
<td>Blink</td>
<td>PAPER FAULT</td>
<td></td>
</tr>
<tr>
<td>Lss too low</td>
<td>Blink</td>
<td>PAPER FAULT</td>
<td></td>
</tr>
<tr>
<td>Testfeed not done</td>
<td>Blink</td>
<td>PAPER FAULT</td>
<td></td>
</tr>
<tr>
<td>Press feed not done</td>
<td>Blink</td>
<td>PRESS FEED</td>
<td></td>
</tr>
<tr>
<td>Pause mode entered</td>
<td>Blink</td>
<td>PAUSED</td>
<td></td>
</tr>
<tr>
<td>Setup mode entered</td>
<td>Blink</td>
<td></td>
<td>Incl. interactive setup</td>
</tr>
<tr>
<td>IP link error</td>
<td>Blink</td>
<td></td>
<td>See note 1, 2, and 3</td>
</tr>
<tr>
<td>IP configuration error</td>
<td>Blink</td>
<td></td>
<td>See note 1, 3, and 4</td>
</tr>
<tr>
<td>Printhead not found</td>
<td>Off</td>
<td>NO PRINTHEAD</td>
<td></td>
</tr>
<tr>
<td>Rebooted</td>
<td>Off</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initializing</td>
<td>Off</td>
<td></td>
<td>Set at startup until operational</td>
</tr>
<tr>
<td>Printer crash</td>
<td>Off</td>
<td></td>
<td>See note 3 and 5</td>
</tr>
<tr>
<td>Printer turned off</td>
<td>Off</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maintenance</td>
<td>Off</td>
<td></td>
<td>Set when upgrading</td>
</tr>
<tr>
<td>Power supply Over temperature</td>
<td>Off</td>
<td>PSU OVER TEMP</td>
<td></td>
</tr>
</tbody>
</table>

**Note 1:** This is only applicable for printers equipped with an EasyLAN interface.

**Note 2:** A printer that is equipped with an EasyLAN interface, but is not connected to a network, will have a blinking IRI. To avoid this, the user can set “IP SELECTION” to “MANUAL” and “IP ADDRESS” to “0.0.0.0”. This will indicate that the user does not regard the lack of network connection as an error.

**Note 3:** No trap can be sent when this error/event occurs.
Chapter 9—Troubleshooting

Note 4: This error indicates that the printer has not received an IP address. It is only applicable for printers with IP SELECTION set to DHCP and/or BOOTP.

Note 5: At most, but not all, printer crashes, the console is reset. This will make the IRI go off.
<table>
<thead>
<tr>
<th>Symptom</th>
<th>Possible Cause</th>
<th>Remedy</th>
<th>Refer to</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall weak print-out</td>
<td>Wrong media grade</td>
<td>Change parameter</td>
<td>Chapter 6, Appendix D</td>
</tr>
<tr>
<td></td>
<td>Contrast value too low</td>
<td>Change parameter</td>
<td>Chapter 6</td>
</tr>
<tr>
<td></td>
<td>Printhead pressure too low</td>
<td>Adjust</td>
<td>Chapter 11</td>
</tr>
<tr>
<td></td>
<td>Worn printhead</td>
<td>Replace printhead</td>
<td>Chapter 10</td>
</tr>
<tr>
<td></td>
<td>Wrong printhead voltage</td>
<td>Replace CPU board</td>
<td>☑ Call Service</td>
</tr>
<tr>
<td>Printout weaker on one side</td>
<td>Uneven printhead pressure</td>
<td>Adjust arm align-</td>
<td>Chapter 11</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ment</td>
<td></td>
</tr>
<tr>
<td>Weak spots</td>
<td>Foreign particles on media</td>
<td>Clean or replace</td>
<td>Chapters 4 &amp; 5</td>
</tr>
<tr>
<td></td>
<td>Media/ribbon don’t match</td>
<td>Change to matching</td>
<td>Chapter 6</td>
</tr>
<tr>
<td></td>
<td>Poor media or ribbon quality</td>
<td>Select a better brand</td>
<td>Appendix D</td>
</tr>
<tr>
<td></td>
<td>Worn printhead</td>
<td>Replace printhead</td>
<td>Chapter 10</td>
</tr>
<tr>
<td></td>
<td>Worn platen roller</td>
<td>Check/replace</td>
<td>☑ Call Service</td>
</tr>
<tr>
<td>Overall dark print-out</td>
<td>Wrong media grade</td>
<td>Change parameter</td>
<td>Chapter 6, Appendix D</td>
</tr>
<tr>
<td></td>
<td>Contrast value too high</td>
<td>Change parameter</td>
<td>Chapter 6</td>
</tr>
<tr>
<td></td>
<td>Printhead pressure too high</td>
<td>Adjust</td>
<td>Chapter 11</td>
</tr>
<tr>
<td></td>
<td>Wrong printhead voltage</td>
<td>Replace CPU board</td>
<td>☑ Call Service</td>
</tr>
<tr>
<td>Excessive bleeding</td>
<td>Wrong media grade</td>
<td>Change parameter</td>
<td>Chapter 6, Appendix D</td>
</tr>
<tr>
<td></td>
<td>Contrast value too high</td>
<td>Change parameter</td>
<td>Chapter 6</td>
</tr>
<tr>
<td></td>
<td>Printhead pressure too high</td>
<td>Adjust</td>
<td>Chapter 11</td>
</tr>
<tr>
<td></td>
<td>Faulty energy control</td>
<td>Replace CPU board</td>
<td>☑ Call Service</td>
</tr>
<tr>
<td>Dark lines along media path</td>
<td>Foreign objects on printhead</td>
<td>Clean printhead</td>
<td>Chapter 10</td>
</tr>
</tbody>
</table>
## Chapter 9—Troubleshooting

<table>
<thead>
<tr>
<th>White vertical lines</th>
<th>Printhead dirty</th>
<th>Clean printhead</th>
<th>Chapter 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Missing printhead dots</td>
<td>Replace printhead</td>
<td>Chapter 10</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Large part of dot line missing</th>
<th>Failing printhead</th>
<th>Replace printhead</th>
<th>Chapter 11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Failing strobe signal</td>
<td>Check CPU-board</td>
<td>Call Service</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Printout missing along inner edge</th>
<th>Bad media alignment</th>
<th>Adjust</th>
<th>Chapter 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small core &amp; supply post in upper pos.</td>
<td>Move post to lower pos.</td>
<td>Chapter 2</td>
<td></td>
</tr>
<tr>
<td>X-start parameter value too low</td>
<td>Increase</td>
<td>Chapter 6</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Transfer ribbon breaks</th>
<th>Ribbon not fitted correctly</th>
<th>Reload ribbon</th>
<th>Chapter 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wrong media grade</td>
<td>Change parameter, then clean printhead</td>
<td>Chapter 6, Chapter 10</td>
<td></td>
</tr>
<tr>
<td>Bad energy control</td>
<td>Adjust</td>
<td>Call Service</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Transfer ribbon wrinkles</th>
<th>Faulty ribbon break shaft adjustment</th>
<th>Adjust</th>
<th>Chapter 11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incorrect edge guide adjustment</td>
<td>Adjust</td>
<td>Chapter 4</td>
<td></td>
</tr>
<tr>
<td>Too strong printhead pressure</td>
<td>Adjust</td>
<td>Chapter 11</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No thermal transfer printout</th>
<th>Ink-coated side does not face media</th>
<th>Reload ribbon</th>
<th>Chapter 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Media feed not working properly</td>
<td>Changed media characteristics</td>
<td>Press the Print button</td>
<td>Chapter 4</td>
</tr>
<tr>
<td>Wrong label rest dots parameter</td>
<td>Check/change</td>
<td>Chapter 6</td>
<td></td>
</tr>
<tr>
<td>Wrong Media Type parameter</td>
<td>Check/change</td>
<td>Chapter 6</td>
<td></td>
</tr>
<tr>
<td>Wrong LSS position</td>
<td>Check/change</td>
<td>Chapter 11</td>
<td></td>
</tr>
<tr>
<td>Dirty sensors</td>
<td>Clean media guides</td>
<td>Chapter 10</td>
<td></td>
</tr>
<tr>
<td>Faulty sensors</td>
<td>Replace</td>
<td>Call Service</td>
<td></td>
</tr>
</tbody>
</table>

| Compressed text or bar code | Too high speed for large media roll | Lower print speed | Chapter 6 |
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

When cleaning or replacing the printhead, take ample precautions to avoid electrostatic discharges.
Chapter 10—Maintenance

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 [(CH₃)₂CHOH; CAS 67-63-0] is a highly flammable, moderately toxic, and mildly irritating substance.

1. Open the front and side doors.
2. Turn the printhead lift lever clockwise to raise the printhead.
Printhead Cleaning, cont.

3. Remove any media and transfer 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).
Chapter 10—Maintenance

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.
Chapter 10—Maintenance

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.

Isopropyl alcohol [(CH₃)₂CHOH; CAS 67-63-0] is a highly flammable, moderately toxic, and mildly irritating substance.

Warning

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.

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.

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

1. Open the front and side doors.
2. Turn the printhead lift lever clockwise to raise the printhead.
Chapter 10—Maintenance

Printhead Replacement, cont.

3. Remove any media and transfer 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!
Chapter 10—Maintenance

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.
Chapter 10—Maintenance

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 \([(\text{CH}_3)_2\text{CHOH}; \text{CAS 67-63-0}]\) is a highly flammable, moderately toxic, and mildly irritating substance.

- Reload the media as described in Chapter 4.
- Switch on the power.
- Readjust the media feed by pressing the <Feed/Pause> key.
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
Chapter 11—Adjustments

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.
Chapter 11—Adjustments

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—they click—while counting the clicks from the snap-locks. A hole in the bottom plate facilitates the adjustment of the lower sensor package.

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)

![Diagram of Label Stop Sensor Position Adjustment]
Chapter 11—Adjustments

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 (-) four full turns.

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

Caution

Adjustment screw
Ribbon Break Shaft

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.

Before readjusting the break shaft, make sure that there is no other cause for the wrinkling of the ribbon. (See Chapter 10, “Troubleshooting.”)
Chapter 11—Adjustments
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

<table>
<thead>
<tr>
<th></th>
<th>Direct Thermal and Thermal Transfer</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Print Technique</strong></td>
<td>Direct Thermal and Thermal Transfer</td>
</tr>
<tr>
<td><strong>Printhead Resolution</strong></td>
<td>8 dots/mm (203.2 dpi)</td>
</tr>
<tr>
<td><strong>Print Speed (variable)</strong></td>
<td>100 to 200 mm/sec. (≈ 4 to 8 in./sec.)</td>
</tr>
<tr>
<td><strong>Print Width (max)</strong></td>
<td>104 mm (4.095 inches) = 832 dots</td>
</tr>
<tr>
<td><strong>Print Length (max)</strong></td>
<td>32767 dots = 409.5 cm (161.25 inches)</td>
</tr>
<tr>
<td><strong>Media Width (min/max)</strong></td>
<td>25 to 114.3 mm (1 to 4.5 inches)</td>
</tr>
<tr>
<td><strong>Media Width (min/max)</strong></td>
<td>40/80 to 114.3 mm (1.57/3.15 to 4.5 inches)</td>
</tr>
<tr>
<td><strong>Media Roll Diameter (max)</strong></td>
<td>152 mm (6.00 inches) 213 mm (8.38 inches)</td>
</tr>
<tr>
<td><strong>Media Roll Core Diameter</strong></td>
<td>38 to 40 mm (1.5 inches) or 76 mm (3 inches)</td>
</tr>
<tr>
<td><strong>Ribbon Width (min/max)</strong></td>
<td>25 to 110 mm (1 to 4.33 inches)</td>
</tr>
<tr>
<td><strong>Ribbon Roll Diameter (outer)</strong></td>
<td>65 mm (2.56 inches) equivalent to 240-300 m (787-985 ft) of ribbon</td>
</tr>
<tr>
<td><strong>Ribbon Roll Core Diameter (inner)</strong></td>
<td>25.4 mm (1.00 inches)</td>
</tr>
<tr>
<td><strong>Print Directions</strong></td>
<td>4</td>
</tr>
</tbody>
</table>

### Modes of Operation

<table>
<thead>
<tr>
<th></th>
<th>Tear-Off (Straight-through)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tear-Off (Straight-through)</strong></td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Cut-Off</strong></td>
<td>Optional</td>
</tr>
<tr>
<td><strong>Cut-Off</strong></td>
<td>Optional</td>
</tr>
<tr>
<td><strong>Peel-Off (Self-strip)</strong></td>
<td>Optional</td>
</tr>
<tr>
<td><strong>Peel-Off (Self-strip)</strong></td>
<td>Optional</td>
</tr>
</tbody>
</table>

### Firmware

<table>
<thead>
<tr>
<th></th>
<th>IPL, v2.20</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operating System</strong></td>
<td>IPL, v2.20</td>
</tr>
<tr>
<td><strong>Smooth Fonts</strong></td>
<td>13 scaleable + 21 simulated bitmap</td>
</tr>
<tr>
<td><strong>Built-in bar code symbologies (std)</strong></td>
<td>38</td>
</tr>
</tbody>
</table>
## Physical Measures

<table>
<thead>
<tr>
<th>Dimensions (W x L x H)</th>
<th>244 x 405 x 178 mm (9.61 x 15.93 x 7.00 inches)</th>
<th>With long side door with paper cutter with 8-in. Megatop</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>253 x 447 x 178 mm (9.96 x 17.60 x 7.00 inches)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>244 x 475 x 225 mm (9.61 x 18.70 x 8.86 inches)</td>
<td></td>
</tr>
<tr>
<td>Weight (excluding media)</td>
<td>7 to 8 kg (15.5 to 17.7 pounds)</td>
<td></td>
</tr>
<tr>
<td>Ambient Operating Temperature</td>
<td>+5°C to +40°C (+41°F to +104°F)</td>
<td></td>
</tr>
<tr>
<td>Humidity</td>
<td>20 to 80% non-condensing</td>
<td></td>
</tr>
</tbody>
</table>

## Electronics

<table>
<thead>
<tr>
<th>Microprocessor</th>
<th>32 bit RISC</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-board Flash SIMMs</td>
<td>2 sockets for 4MB or 8MB each, Std. 1 x 4MB</td>
</tr>
<tr>
<td>On-board SDRAM SIMM</td>
<td>1 socket for 8MB or 16MB, Std. 8MB</td>
</tr>
</tbody>
</table>

## Power Supply

<table>
<thead>
<tr>
<th>AC Voltage</th>
<th>90 to 265 VAC, 45 to 65 Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>PFC Regulation</td>
<td>IEC 61000-3-2</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>Standby 15W; Peak 300W</td>
</tr>
</tbody>
</table>

## Sensors

<table>
<thead>
<tr>
<th>Gap/Mark/Out of Media</th>
<th>Yes</th>
<th>5 fixed positions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Printhead Lifted</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Ribbon End</td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>

## 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

<table>
<thead>
<tr>
<th>Serial</th>
<th>1 x RS-232</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connection for Optional Interface Boards</td>
<td>1 + 1, 1 EasyLAN, 1 IEEE 1284</td>
</tr>
<tr>
<td>Memory Card Adapter</td>
<td>1, Firmware upgrading only</td>
</tr>
</tbody>
</table>
### Accessories and Options

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thick Media Printhead</td>
<td>Option</td>
</tr>
<tr>
<td>Integral Self-strip Unit with Liner Takeup</td>
<td>Option</td>
</tr>
<tr>
<td>Rotating Media Supply Hub</td>
<td>Option</td>
</tr>
<tr>
<td>3-inch Adapter</td>
<td>Option</td>
</tr>
<tr>
<td>Cutter and Tray</td>
<td>Option</td>
</tr>
<tr>
<td>Long Side Door</td>
<td>Option(^2)</td>
</tr>
<tr>
<td>Long Side Door with 8-in. Megatop</td>
<td>Option(^2)</td>
</tr>
<tr>
<td>Label Taken Sensor</td>
<td>Option</td>
</tr>
<tr>
<td>RS-232 Cable</td>
<td>Option</td>
</tr>
<tr>
<td>Parallel Interface Cable</td>
<td>Option</td>
</tr>
<tr>
<td>Parallel Interface Board</td>
<td>Option</td>
</tr>
<tr>
<td>Double Serial Interface Board</td>
<td>Option</td>
</tr>
<tr>
<td>Serial/Industrial Interface Board</td>
<td>Option</td>
</tr>
<tr>
<td>EasyLAN Ethernet Interface</td>
<td>Option</td>
</tr>
<tr>
<td>EasyLAN Wireless Interface</td>
<td>Option</td>
</tr>
<tr>
<td>External Alphanumeric Keyboard</td>
<td>Option</td>
</tr>
<tr>
<td>CompactFlash Cards</td>
<td>Option</td>
</tr>
</tbody>
</table>

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 standard long door or an 8-inch Megatop.
This appendix specifies the physical measures for various types of media.
Appendix B—Media Specifications

Media Roll Size

Core

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

⚠️ Caution

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 3 213 mm (8.38 inches)
Max. width: 114.3 mm (4.50 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 (7 mils) with the standard printhead or 220µm (8.7 mils) with a special printhead. 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.
Appendix B—Media Specifications

Media

Non-Adhesive Strip

⇐ a ⇒ Media Width

Maximum: 114.3 mm (4.50 inches)
Minimum (standard): 25.0 mm (1.00 inches)
Min. (narrow Quick-Load): 40.0 mm (1.57 inches)
Min. (wide Quick-Load): 80.0 mm (3.15 inches)

Media Type Setup

• Fix length strip
• Var length strip
Self-Adhesive Strip

**⇐ a ⇒ Media Width (including liner)**
Maximum: 114.3 mm (4.50 inches)
Minimum (standard): 25.0 mm (1.00 inches)
Min. (narrow Quick-Load): 40.0 mm (1.57 inches)
Min. (wide Quick-Load): 80.0 mm (3.15 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: 112.7 mm (4.43 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: 114.3 mm (4.50 inches)
Minimum (standard): 25.0 mm (1.00 inches)
Min. (narrow Quick-Load): 40.0 mm (1.57 inches)
Min. (wide Quick-Load): 80.0 mm (3.15 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: 112.7 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 11).

Media Type Setup
• Label (w gaps)
Appendix B—Media Specifications
Tickets with Gaps

Media Width
- Maximum: 114.3 mm (4.50 inches)
- Minimum (standard): 25.0 mm (1.00 inches)
- Min. (narrow Quick-Load): 40.0 mm (1.57 inches)
- Min. (wide Quick-Load): 80.0 mm (3.15 inches)

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.

LSS Detection Position
Five fixed positions, see Chapter 11.

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).

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.
Appendix B—Media Specifications

Tickets with Black Mark

⇐ a ⇒ Media Width
Maximum: 114.3 mm (4.50 inches)
Minimum (standard): 25.0 mm (1.00 inches)
Min. (narrow Quick-Load): 40.0 mm (1.57 inches)
Min. (wide Quick-Load): 80.0 mm (3.15 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 11.

⇐ 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.
Appendix B—Media Specifications
This appendix describes the interface connectors found on the printer’s rear plate. It covers the following topics:

- RS-232 interface
- Optional interface boards
Appendix C—Interfaces

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:

<table>
<thead>
<tr>
<th>DB-9</th>
<th>Signal</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TXD</td>
<td>Transmit data</td>
</tr>
<tr>
<td>2</td>
<td>RXD</td>
<td>Receive data</td>
</tr>
<tr>
<td>3</td>
<td>DSR</td>
<td>Data set ready</td>
</tr>
<tr>
<td>4</td>
<td>GND</td>
<td>Ground</td>
</tr>
<tr>
<td>5</td>
<td>DTR</td>
<td>Data terminal ready</td>
</tr>
<tr>
<td>6</td>
<td>CTS</td>
<td>Clear to send</td>
</tr>
<tr>
<td>7</td>
<td>RTS</td>
<td>Request to send</td>
</tr>
<tr>
<td>9</td>
<td>–</td>
<td>Not used</td>
</tr>
</tbody>
</table>

* 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

![Parallel interface connector](image1)

EasyLAN Ethernet Interface

![RJ-45 EasyLAN Ethernet connector](image2)
Appendix C—Interfaces

EasyLAN Wireless Interface

EasyLAN antenna
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.
Appendix D—Intermec Supplies

Direct Thermal Media

Intermec offers two quality grades of direct thermal media for the EasyCoder printers:

Premium Quality

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

Europe
Thermal Top Board
Thermal Top
Thermal Top High Speed

North America
Duratherm II
Duratherm II Tag
Duratherm Lightning
Duratherm Lightning Plus
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
Thermal Eco
Thermal Eco Board

North America
—
## 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:

<table>
<thead>
<tr>
<th>Europe</th>
<th>North America</th>
</tr>
</thead>
<tbody>
<tr>
<td>TTR Uncoated</td>
<td></td>
</tr>
</tbody>
</table>

### Coated Papers

Various coat-weight, smoothness, and gloss. To be used with HP/TMX 2200/TMX 2500 and GP/TMX 1500 ribbons. Examples:

<table>
<thead>
<tr>
<th>Europe</th>
<th>North America</th>
</tr>
</thead>
<tbody>
<tr>
<td>TTR Coated</td>
<td>Duratran II</td>
</tr>
<tr>
<td>TTR Premium</td>
<td>Duratran II Tag</td>
</tr>
<tr>
<td>TTR Premium Board</td>
<td>Valeron Tag</td>
</tr>
<tr>
<td>TTR High Gloss White</td>
<td></td>
</tr>
</tbody>
</table>

### Polyethylene Plastics

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

<table>
<thead>
<tr>
<th>Europe</th>
<th>North America</th>
</tr>
</thead>
<tbody>
<tr>
<td>TTR Polyethylene</td>
<td>Kimdura</td>
</tr>
<tr>
<td>TTR Gloss Polyethylene</td>
<td>Syntran</td>
</tr>
</tbody>
</table>

### Polyesters

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

<table>
<thead>
<tr>
<th>Europe</th>
<th>North America</th>
</tr>
</thead>
<tbody>
<tr>
<td>TTR High Gloss Polyester</td>
<td>PET Gloss</td>
</tr>
</tbody>
</table>
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.
Appendix D—Intermec Supplies

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.

<table>
<thead>
<tr>
<th>Media or Ribbon</th>
<th>Sensitivity Rating</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal transfer media</td>
<td>56*</td>
<td>The asterisk for the third digit is reserved to identify the ribbon’s sensitivity number.</td>
</tr>
<tr>
<td>Thermal transfer ribbon</td>
<td>5*7</td>
<td>The asterisk for the second digit is reserved to identify the media’s sensitivity number.</td>
</tr>
<tr>
<td></td>
<td>567</td>
<td>Optimum sensitivity rating</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Approximate Sensitivity Ratings</th>
<th>Setting</th>
<th>Direct Thermal Media</th>
</tr>
</thead>
<tbody>
<tr>
<td>400 Series Medium Sensitivity</td>
<td>480</td>
<td>Duratherm Lightning IR Tag</td>
</tr>
<tr>
<td></td>
<td>470</td>
<td>Duratherm Lightning-2</td>
</tr>
<tr>
<td></td>
<td>460</td>
<td>European IR</td>
</tr>
<tr>
<td></td>
<td>450</td>
<td>Duratherm IR Lightning-1</td>
</tr>
<tr>
<td></td>
<td>440</td>
<td>European Thermal</td>
</tr>
<tr>
<td></td>
<td>420</td>
<td>Duratherm Lightning-1</td>
</tr>
<tr>
<td>100 Series Low Sensitivity</td>
<td>180</td>
<td>Duratherm Lightning II-1</td>
</tr>
<tr>
<td></td>
<td>170</td>
<td>European Tag</td>
</tr>
<tr>
<td></td>
<td>160</td>
<td>Duratherm II Tag</td>
</tr>
<tr>
<td></td>
<td>140</td>
<td>European Top</td>
</tr>
<tr>
<td></td>
<td>130</td>
<td>Duratherm II-2</td>
</tr>
</tbody>
</table>

### Thermal Transfer Media and Ribbon Sensitivity Settings

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