Installation & Operation

P/N 1-960467-03
Edition 4
Februari 2001

EasyCoder F4
Bar Code Label Printer

Intermec
Technologies Corporation

A UNOVA Company

Contents

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Installation & Operation
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WARNING

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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.

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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

We,

Intermec Printer AB
Idrottsvägen 10
Box 123
S-431 22 Mölndal
Sweden

declare under our sole responsibility[1] that the product

EasyCoder F4

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

EMC:
EN 50 081-1:1992
EN 55 022:1994
EN 61 000-3-2:1995, class A

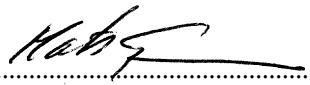
EN 50 082-2:1995
EN 61 000-4-2:1995
EN 61 000-4-3:1996
ENV 50 204:1995
EN 61 000-4-4:1995
EN 61 000-4-6:1996

Electrical Safety:
EN 60 950

following the provisions of Directives

89/336/EEC and 73/23/EEC

Mölndal 1999-09-01



.....

Mats Gunnarsson
President

[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.

Introduction

The EasyCoder F4 is a sturdy medium-duty direct thermal/thermal transfer printer with a printhead resolution of 8 dots per mm (203.2 dots per inch) 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 memory card adapter
- Built-in USB and RS-232 interfaces
- Provision for one extra interface board
- Bar code wand interface for easy setup
- 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 10 and Appendix 1 for more information.

The EasyCoder F4 supports the unique and flexible Intermec Fingerprint v7.50 programming language, which allows the user or third-party developer to create custom-made application programs and label formats in a BASIC-like environment. It is also designed to work with the Intermec Direct Protocol programming language and with the Intermec InterDriver. The InterDriver allows you to design labels using standard PC applications, for example Microsoft Office.

The EasyCoder F4 supports 15 scaleable Unicode TrueType and TrueDoc fonts as standard. Additional fonts can be downloaded into the printer's Flash memory, or be plugged in using a memory card. The Unicode standard allows the use of special characters for various languages including non-Latin fonts, such as Arabic, Cyrillic, Chinese, Japanese, Korean, Hebrew, and similar.

Safety Precautions

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

Caution

- Read this manual carefully before connecting the printer.
- Moving parts are exposed when the side door is open, so ensure that the door is closed before you operate the printer.
- Do not open the front/left-hand cover. Dangerous voltage!
- Do not remove the bottom plate. Dangerous voltage!
- Do not put your fingers inside the print mechanism when the power is on.
- Place the printer on an even surface which can support its weight of approximately 7 kg (15.5 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 Labeling

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.

Printing a Label

Introduction

This chapter will help you to produce a label within minutes of unpacking your printer and it will show you how the Intermed Fingerprint programming language and the Intermec Direct Protocol make creating label formats an easy task.

If you are new to EasyCoder printers, read the rest of the manual before returning here.

In addition to the Intermec Direct Protocol and the Intermec Fingerprint programming language, the EasyCoder F4 also supports the InterDriver printer driver for various versions of Microsoft Windows. After you select the Windows Driver option in Intermec Shell, you can use the EasyCoder F4 printer the same way as you use any other printer to produce printouts from any standard Windows program.

Connecting Printer and Host

In the following examples we assume that you are using an ASCII terminal or a PC with a terminal program, for example Microsoft HyperTerminal, as a host. We also assume that you are using the standard RS-232 serial interface to connect your printer with the host.

The printer contains a powerful microprocessor which is controlled by the Intermec Fingerprint programming language. The connected PC is only used as a non-intelligent terminal for sending instructions to the printer and to display the responses from the printer on a screen.

Intermec provides optional communication cables for connecting the printer to most PCs. Refer to Appendix 3 for wiring diagrams.

Introduction, cont.

Setup

By default, the printer is set up for the following serial communication protocol on communication port "uart1:":

Baud rate:	9600
Character length:	8
Parity:	none
Stop bits:	1
Flowcontrol:	none
New line:	CR/LF

If you want to change any of these values, refer to Chapter 8, “Setup Mode.” Set up the host computer for the same communication protocol as the printer.

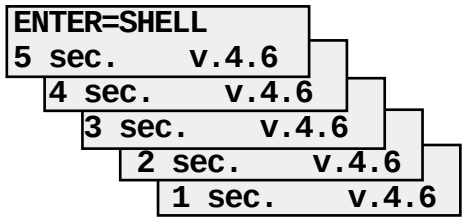
Media Supply

Load the printer with labels at least 35 mm (1.4 inches) wide and at least 40 mm (1.6 inches) long, see Chapter 5. In case of thermal transfer printing, also load a suitable thermal transfer ribbon, see Chapter 6.

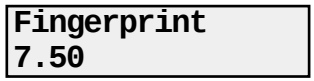
If the printout becomes too light or too dark, you will need to change the paper type parameter. For help, see Chapter 8.

Startup and Communications Check

Switch on the printer. Provided the printer is not fitted with any custom-made startup program, after initialization the Intermec Shell countdown menu will appear in the display window:



Do not take any action. By default, the display window will show the following message when the countdown is completed:



If this message is not shown, refer to “Selecting an Application” in Chapter 9 for information on how to select the “Fingerprint” application.

Introduction, cont.

Check that the printer and your terminal or PC have a working communication by typing the following instruction on the host:

BEEP ↵ (↵ = *carriage return*)

The printer should respond by returning **ok** to the host screen and emit a short beep. If not, check the communication setup of the printer and the host.

The next two steps demonstrate the printer's ability both to feed out the media and to pull it back. Type:

FORMFEED 300 ↵

The printer will feed out a short piece of the label. Then order the printer to pull back the label to its original position by typing:

FORMFEED -300 ↵

After loading a new type of label stock, the printer should always be allowed to adjust itself according to the size and characteristics of the labels and liner. Type:

TESTFEED ↵

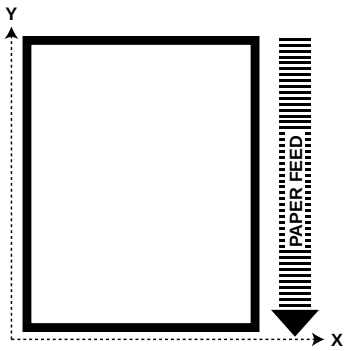
The printer will feed out at least two labels while adjusting its sensors and media feed mechanism. You can also perform a testfeed operation by simultaneously pressing the <**Shift**> and <**Feed**> keys on the printer's keyboard.

Tear off the labels by grabbing the outer (right) edge and pulling downwards.

Now you are ready to start programming your first label.

Using Intermec Fingerprint

The label we will design in Intermec Fingerprint will contain a box, an image, a bar code, and a line of text. Note that the illustrations are not reproductions of the label, but are merely intended to show the principles of label editing.

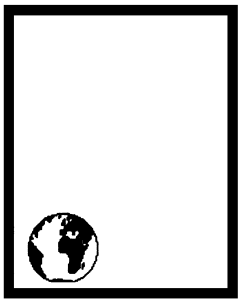


Printing a Box

Let us start by printing a box 430 dots high and 340 dots wide with a 15 dot line thickness. The box is inserted at position X=10; Y=10:

```
NEW
10    PRPOS 10, 10 ↵
20    PRBOX 430,340,15 ↵
200   PRINTFEED ↵
300   END ↵
RUN ↵
```

Note: The printer does not execute the program until you have typed **RUN** ↵.



Printing an Image

Now we add the image "GLOBE.1" after changing the print coordinates to X=30; Y=30.

Note that the characters enclosing the word GLOBE.1 are quotation marks (ASCII 034 decimal/22 hex) and indicate a string expression (text) as opposed to a numeric expression (value). The same applies to bartypes, bar code input data, barfonts, text fonts, and input to text fields later in this chapter.

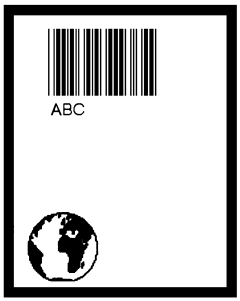
```
30    PRPOS 30,30 ↵
40    PRIMAGE "GLOBE.1" ↵
RUN ↵
```

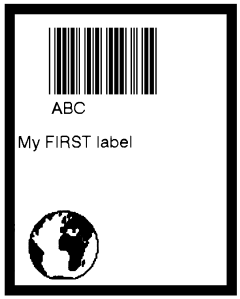
Printing a Bar Code

You need to choose a bar code type before you can print a bar code. Note there is no blank space in the bartype name. Then provide the input data to the bar code.

```
50    PRPOS 75,270 ↵
60    BARTYPE "CODE39" ↵
70    PRBAR "ABC" ↵
RUN ↵
```

Using Intermec Fingerprint, cont.





Printing Human Readables

To get human readable text printed below the bar code, add these lines which enable bar code interpretation and select a font for it:

```
1     BARFONT ON ↵
2     BARFONT "Swiss 721 BT",6 ↵
RUN ↵
```

Printing a Line of Text

Add a line of text at position X=25; Y=220, select a font, and finally provide the actual text:

```
80    PRPOS 25,220 ↵
90    FONT "Swiss 721 BT", 6 ↵
100   PRTXT "My FIRST Label" ↵
RUN ↵
```

Listing the Program

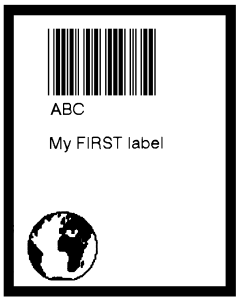
To view the whole program, type:

```
LIST ↵
```

The lines will be listed in ascending order on the screen of your PC:

```
1     BARFONT ON
2     BARFONT "Swiss 721 BT", 6
10    PRPOS 10,10
20    PRBOX 430,340,15
30    PRPOS 30,30
40    PRIMAGE "GLOBE.1"
50    PRPOS 75,270
60    BARTYPE "CODE39"
70    PRBAR "ABC"
80    PRPOS 25,220
90    FONT "Swiss 721 BT", 6
100   PRTXT "My FIRST label"
200   PRINTFEED
300   END
ok
```

Using Intermec Fingerprint, cont.



Changing a Program Line

If you want to change a program line, simply rewrite the line using the same line number. For example, move the text to the right by rewriting line 80 with a different X-coordinate:

```
80   PRPOS 75,220 ↵
RUN ↵
```

Saving the Program

If you want to save your first attempt, issue the following command.

```
SAVE "LABEL1" ↵
```

Your program will be saved in the printer's permanent memory under the name:

```
LABEL1.PRG
```

Loading the Program

If you want to use this label later, for example after having created more programs, type:

```
LOAD "LABEL1.PRG" ↵
RUN ↵
```

A new copy of the label will be printed.

The Intermec Fingerprint offers many more advanced functions that allow you to create sophisticated application programs or to emulate other printer protocols. For more information on the subject of programming, please refer to the documentation of the Intermec Fingerprint programming language.

Using Intermec Direct Protocol

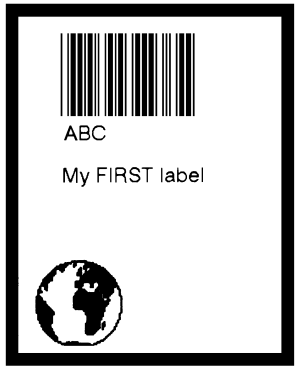
You can use Intermec Direct Protocol in many ways. This section shows you how to use Intermec Direct Protocol to create the same label as the one you created using Intermec Fingerprint in the previous section. You will first create the format and then provide input data to the variable fields. Note that many of the commands are abbreviated. We assume that you use Intermec Shell to enter Intermec Direct Protocol. For help, see "Starting Up with Intermec Shell" in Chapter 9.

First, create a format:

```
LAYOUT INPUT "tmp:LABEL1" ↵      (start format recorder)
BF ON ↵                          (enable bar code interpretation)
BF "Swiss 721 BT",6 ↵            (select bar code font)
PP 10,10 ↵                       (insertion point for box field)
PX 430,340,15 ↵                  (create a box)
PP 30,30 ↵                       (insertion point for image field)
PM "GLOBE.1" ↵                   (select image)
PP 75,270 ↵                      (insertion point for bar code field)
BT "CODE39" ↵                    (select bar code type)
PB VAR1$ ↵                       (variable input data to bar code field)
PP 75,220 ↵                      (insertion point for text field)
FT "Swiss 721 BT",6 ↵            (select text font)
PT VAR2$ ↵                       (variable input data to text field)
LAYOUT END ↵                     (save format)
```

Then add the variable data and a print instruction:

```
LAYOUT RUN "tmp:LABEL1" ↵        (select format)
<STX>                            (start of input data, ASCII 02 dec.)
ABC ↵                            (variable input data to VAR1$)
My FIRST label ↵                 (variable input data to VAR2$)
<EOT>                            (end of input data, ASCII 04 dec.)
PF ↵                             (print one label)
```

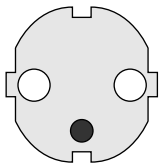


Installation

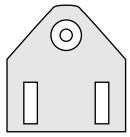
Unpacking

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

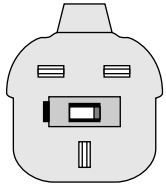
- Open the box and lift the printer out.
- Check that the printer has not been visibly damaged during transportation. Keep the packing materials in case you need to move or reship the printer.
- Check the label on the printer's rear plate, which gives the voltage, the part number, and the serial number.
- Check that any options you ordered are included.
- Check that all accessories are included. As standard, the box contains:
  - Intermec EasyCoder F4 printer
  - Two sets of Quick-Load guides (wide and narrow)
  - Power cord (at least one depending on model)
  - Quality check card
  - Cleaning card
  - Short strip of labels[1]
  - Adapter for 3-inch media roll core (only in models fitted with a rotating media supply hub)
  - Starter pack of thermal transfer ribbon (thermal transfer models only)[1]
  - User's Guide (multilingual)
  - Installation & Operation manual
  - Supporting software and product information on CD.
- Check that the power cord is appropriate for the local standard. The printer works within 100 to 240 VAC, 50 to 60 Hz.



European-type 230 VAC plug



US/Canadian-type 115 VAC plug



GB-type 230 VAC plug

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

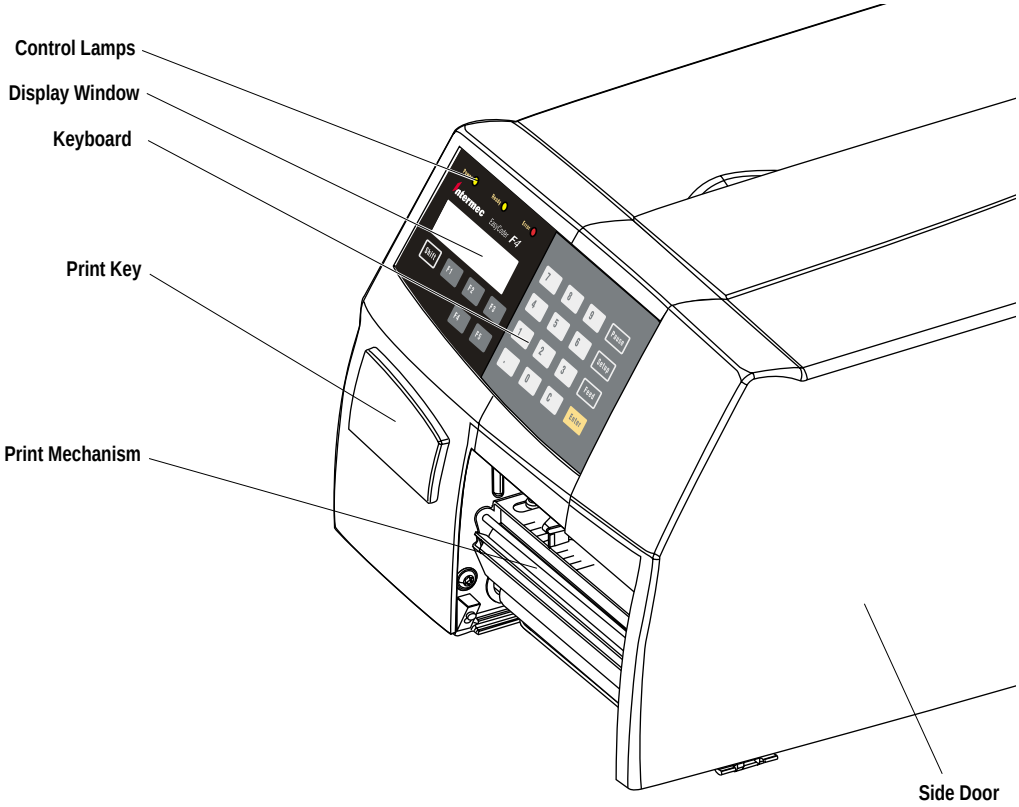
If the delivery is incorrect or any parts are missing, report it immediately to the distributor.

[1]/. Type and quantity may vary, or labels/ribbon may be omitted completely, depending on area of distribution.

Front View

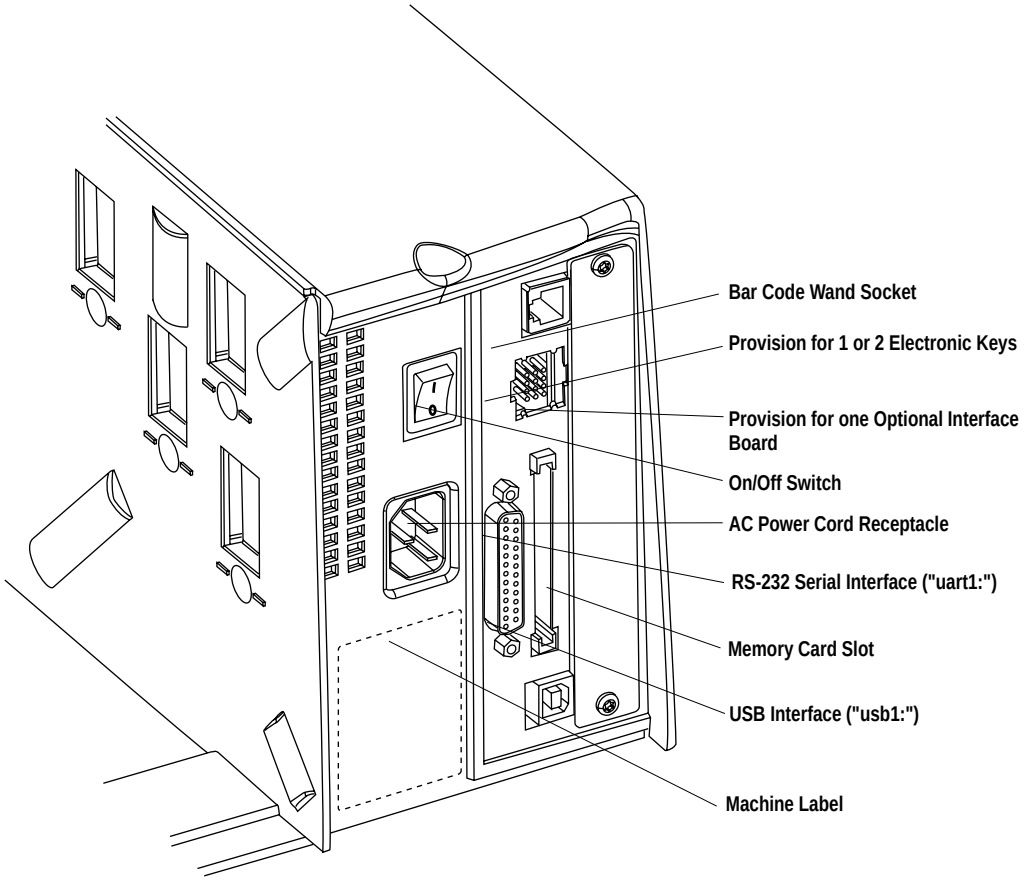
At the front of the printer are the display window, the control lamps, and the keyboard. These features allow the operator to control and set up the printer manually, in addition to the remote control facilities offered by the Intermec Fingerprint programming language and Intermec Shell.

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



Rear View

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

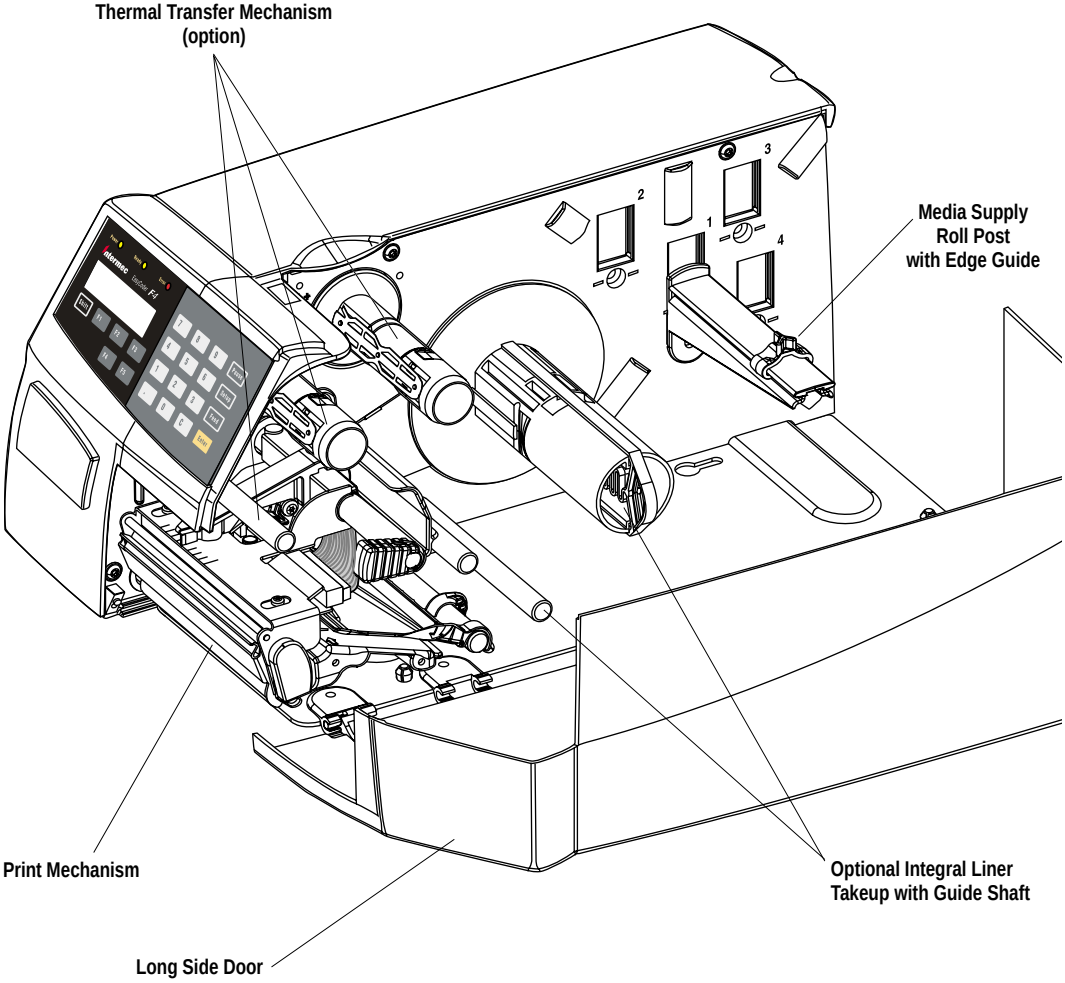


Media Compartment

The media compartment is either covered by a long side door that completely encloses the print mechanism and media compartment, an 8-inch Megatop for extra large media rolls, or a short side door that only covers the print mechanism and gives easy access to the media stock. The door is held by a magnetic lock. It can be opened 180° to provide full access to the media compartment.

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

Also see Chapter 10, “Options.”

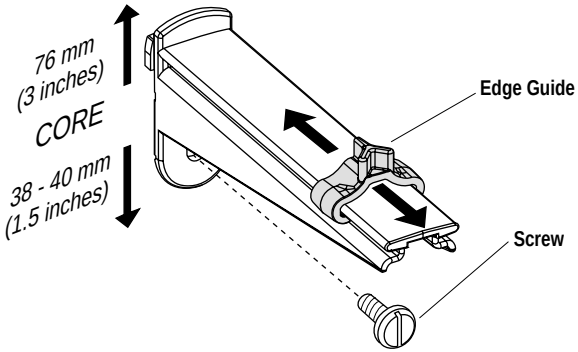


Media Compartment, cont.

Since the EasyCoder F4 has a modular design, it uses a media supply roll post that can be fitted in three different positions inside the media compartment. The position depends on the type of side door (long, short, or Megatop) and whether or not the printer is fitted with an integral liner takeup. Alternatively, an external media supply (for example a box of fan folded tickets) behind the printer can be used. A rotating media supply hub is also available as an option, see Chapter 10, "Options."

Media Supply Roll Post

The media supply roll post fits both the 38-40 mm (1.5 inches) and the 76 mm (3.0-inches) cores, since it can be moved vertically in the slot in the center section. The bottom position is 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.

Caution!

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

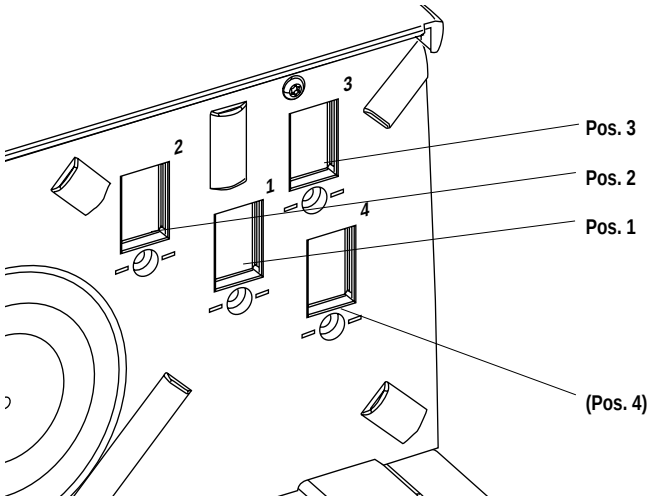
Media Compartment, cont.

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.

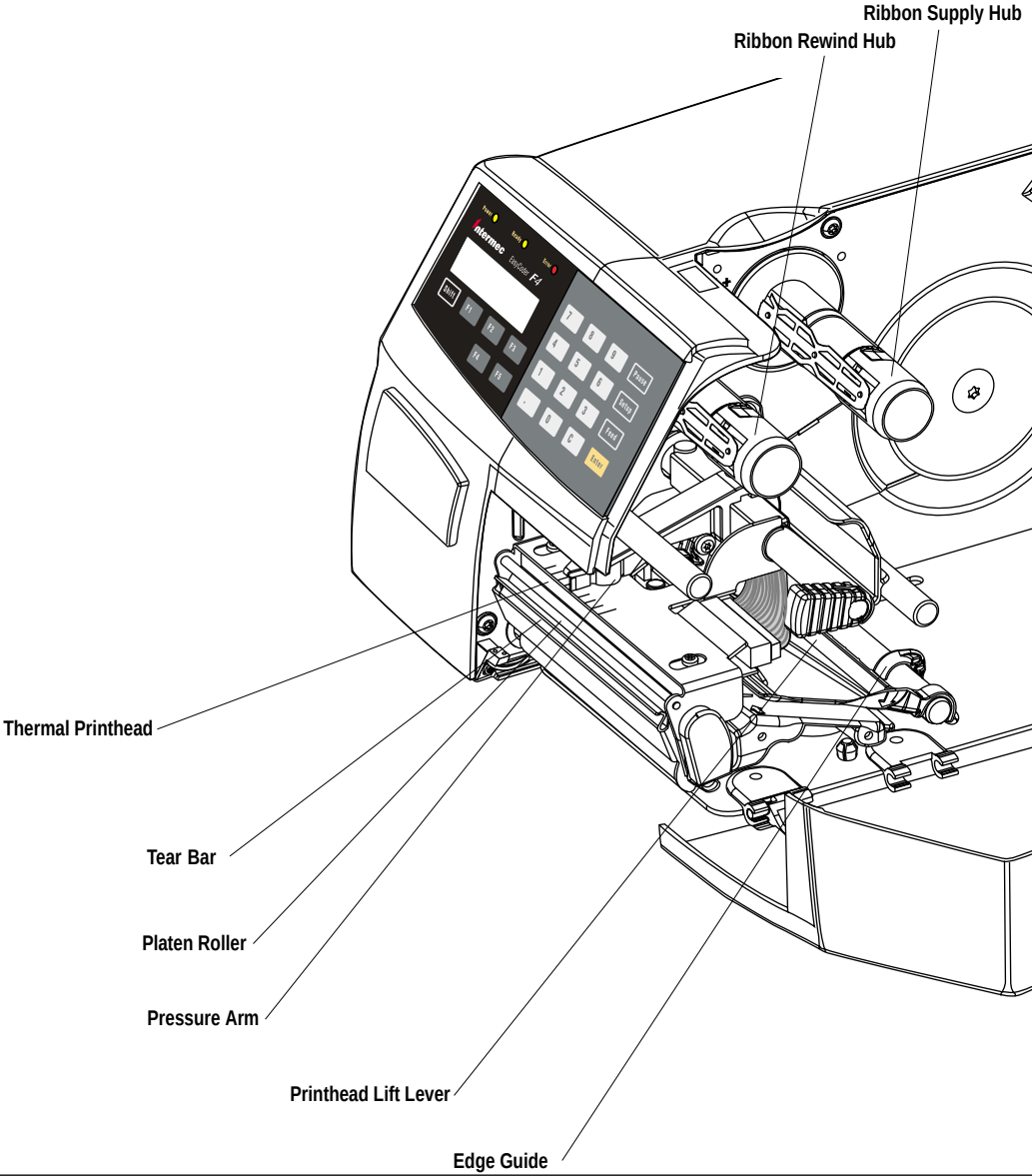
- Position 1 is used when the media compartment is fully enclosed by a long side door, regardless of the existence of any integral liner takeup unit. Maximum roll size is 152 mm (6 inches).
- Position 2 is used when the printer has a short side door that only encloses the print mechanism, but does not have an integral liner takeup unit. Maximum roll size is 213 mm (8.38 inches).
- Position 3 is used when the printer has a short side door and an integral liner takeup unit. This position is also used with the optional 8-inch Megatop, see Chapter 10, "Options." Maximum roll size is 213 mm (8.38 inches).
- Position 4 is reserved for possible future development.

The printer can also use an external media supply located behind the printer, unless it has an optional 8-inch Megatop.



Print Mechanism

The print mechanism features a high-performance 8 dots-per-mm (203.2 dots-per-inch) thermal printhead with quick-mount fittings to facilitate replacement. The thermal transfer ribbon mechanism is omitted in dedicated direct thermal printing models.



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, to load ribbon, and to remove the printout
2. Check that the printer is switched off.
3. Connect the power cord between the receptacle on the rear plate and an electrical outlet (>90 to <264 VAC).

Computer

The EasyCoder F4 is fitted with one 25-pin D-style subminiature (DB25) female connector for the RS-232 serial interface port and one class B connector for the USB interface port (see Appendix 3).

- ***RS-232 Serial Interface***
  (device name: "uart1:")
  Use the serial interface with Intermec LabelShop or the Intermec InterDriver. Also use it with the Intermec Direct Protocol or the Intermec Fingerprint programming language because you can receive error messages from your printer. 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 7, “Setting Up the Printer.”
- ***USB Interface***
  (device name: "usb1:")
  Use the USB interface with an USB-compatible version of the Intermec InterDriver for printing. The printer works only as a “slave” (that is, the USB interface is not suitable for programming because you cannot receive error messages from your printer). Unlike RS-232, there is no communication setup in regard of baud rate, parity, handshaking, etc.
- ***Optional Interface Board***
  (device name: "uart2:", "uart3:", "centronics:", or "net1:")
  Several types are available (see Chapter 10, “Options”). Refer to Appendix 3 and the separate documentation delivered with the boards for connection and setup instructions.

Switch off both the PC and the printer before connecting them together.

Controls and Indicators

The EasyCoder F4 has several ways of communicating directly with its operator: three control lamps, a display window, a membrane-switch keyboard with 22 programmable keys, a big programmable "Print" button on the printer's front, and a beeper.

Control Lamps

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

- *Power* (green) indicates that the power is on.
- *Ready* (green) indicates that the printer is ready for use.
- *Error* (red) indicates that some kind of error has occurred. If serial communication is used, an error message may be returned to the host computer.

Display

The display window contains an LCD (Liquid Crystal Display) with background illumination and two lines of text, each with 16 characters. It guides the operator through the setup and indicates possible errors during printing.

The Intermec Fingerprint programming language and the Intermec Direct Protocol allow custom-made messages to be composed and displayed according to the requirements of the application.

Keyboard

The keyboard is of the membrane-switch type and has 22 keys. The keyboard is supplemented by a large "Print" button on the printer's front. Some keys have hard-coded functions in the startup and setup modes.

In application programs created using the Intermec Fingerprint programming language, the keys can be assigned various functions. Since one key works as a shift key, up to 44 different key combinations are possible. An audible signal, which can be turned off, acknowledges that a key has been pressed.

Controls and Indicators, cont.

Beeper

The beeper notifies the operator when an error has occurred and acknowledges that a key has been pressed. The Intermec Fingerprint programming language allows the key acknowledge signal to be turned off. The frequency and duration of other signals can be specified. Thus, it is possible to create different signals for different conditions or even to make the printer play simple melodies!

Starting Up

Startup Files

When the printer is switched on, its behavior depends on the existence of a startup file (autoexec.bat) in its memory. There are two cases:

A The printer is **only** fitted with the Intermec Shell file-managing program, which allows the operator to choose between a variety of applications and functions.

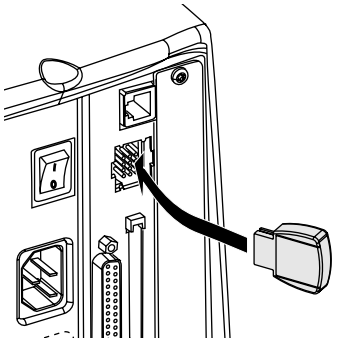
B In addition to Intermec Shell, the printer is **also** fitted with a custom-made application program that is designed to perform a specific task, for example to print tickets, baggage tags, or product labels for a certain company. Such a program may be initiated by a startup file (autoexec.bat) stored in the printer's permanent memory or in a memory card.

There can be one startup file stored in each of three main parts of the printer's memory. If there are startup files stored in more than one part, only one will be selected with the following priority:

1. An **`autoexec.bat`** file stored in a memory card, provided the card was inserted in the printer before startup.
2. An **`autoexec.bat`** file stored in the read/write part of the printer's permanent memory (device "c:").
3. The **`pup.bat`** file (Intermec Shell) in the read-only part of the printer's permanent memory (device "rom:").

If you insert a memory card that contains a startup file before you switch on the printer, this startup file will be used instead of Intermec Shell.

Electronic Keys



Some applications may require one or two electronic keys to be inserted in the slot in the rear plate.

Insert the key so the flat side faces the center of the slot. It does not matter if the key is fitted in the right or left position.

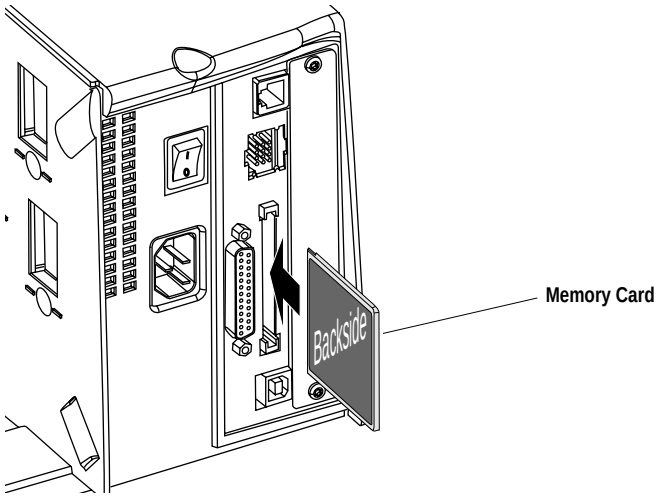
In case of two electronic keys, the flat sides should face each other.

Important!
Always switch off the power before inserting or removing an electronic key.

Memory Card

If you want to use a memory card, you must insert it into the slot in the printer's rear plate before you switch on the power. The memory card can be an SRAM card complying with the JEIDA-4 standard or a Flash Memory card from Intermec. Maximum size in both cases is 64Mbit (8MB). There are three types of Flash Memory cards:

- Font Cards provide additional fonts that can be used as long as the card remains inserted in the printer.
- Font Install Cards permanently install additional fonts, which can be used even after the card has been removed.
- Firmware Cards automatically replace the printer's firmware, usually with an updated version.



Important!

Always switch off the power before inserting or removing a memory card! The manufacturer's logotype should face right when viewing the card as in the illustration above.

Switching On

Before switching on the printer, make the necessary connections, insert any memory card you want to use, 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. Then a message will appear in the display window, depending on the startup file.

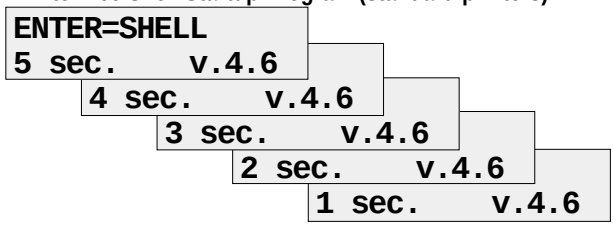
Display Messages at Startup

When the power is switched on, 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
:::
```

The type of startup file running in the printer is indicated by the message shown in the display window **immediately** after initialization.

A. Intermec Shell Startup Program (standard printers)



Refer to Chapter 9 for more information on Intermec Shell. The digits in the lower right corner of the display window indicate the version of Intermec Shell.

B. Custom-Made Application Program (non-standard printers)

Any other display messages than those illustrated above indicates that the printer is either running some custom-made, non-standard application program, or that some error has occurred.

Media Load

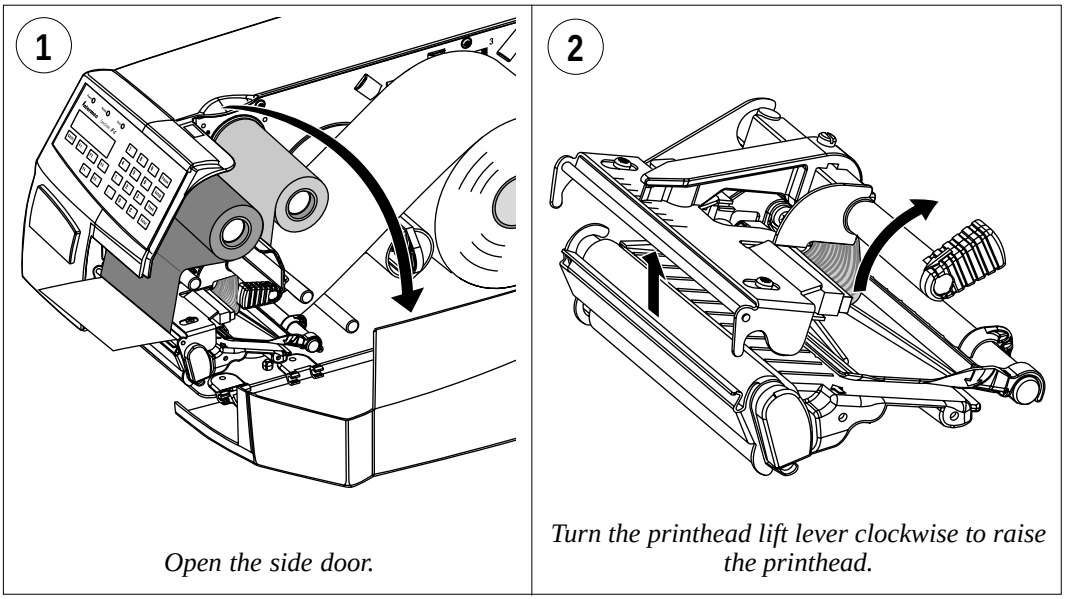
Tear-Off
(Straight-through)

The EasyCoder F4 can print on labels, tickets, tags, and continuous stock in various forms. This section describes the case when the media is to be torn off manually against the printer's tear bar. This method is also known as "straight-through printing."

Use the <**Feed**> key (see figure #10) when loading the same type of media. When switching to a new type of media or if the printer does not feed out the media properly, simultaneously press the <**Shift**> and <**Feed**> keys to perform a "testfeed."

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 10, "Options."

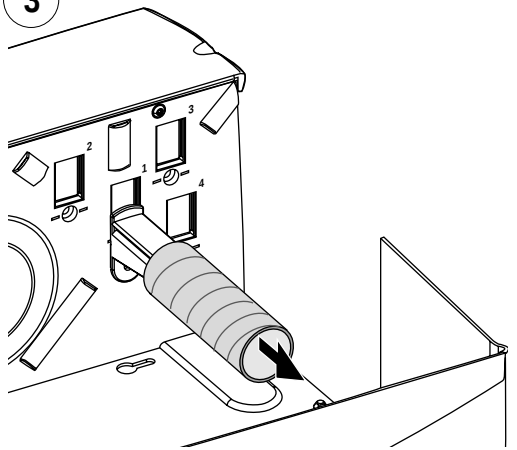


Open the side door.

Turn the printhead lift lever clockwise to raise the printhead.

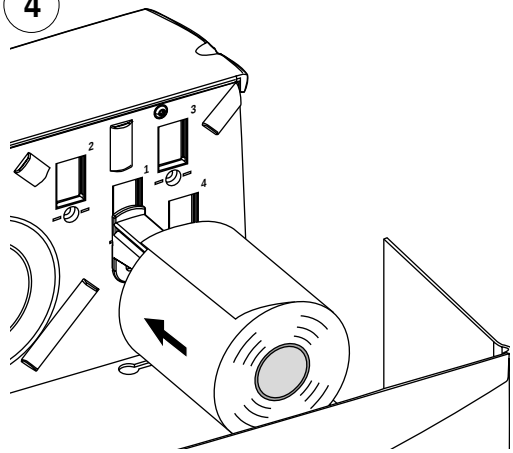
Tear-Off, cont.

3



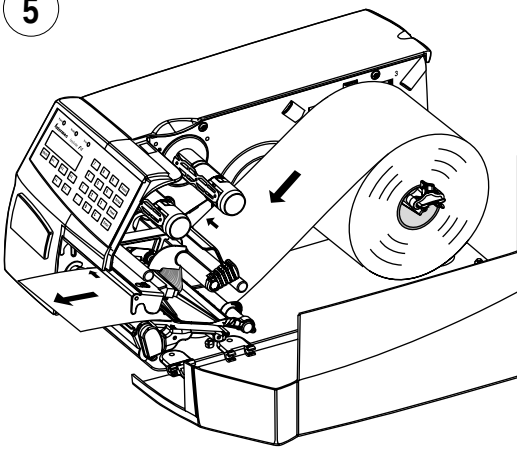
Remove any empty core from the media supply roll post.

4



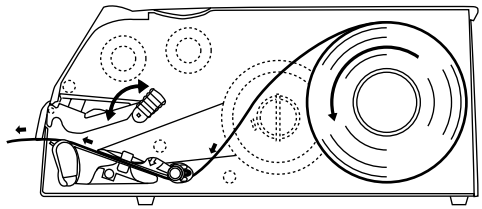
Fit a new roll of media on the supply post and adjust the edge guide so the roll becomes flush with the center section.

5



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

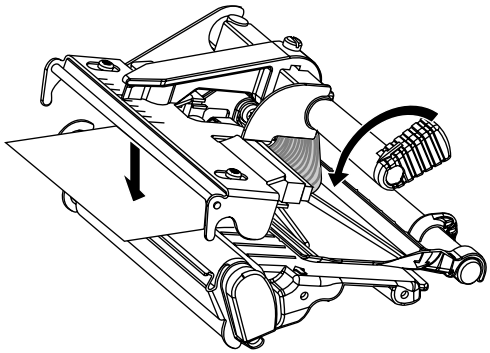
6



This diagram shows the media path.

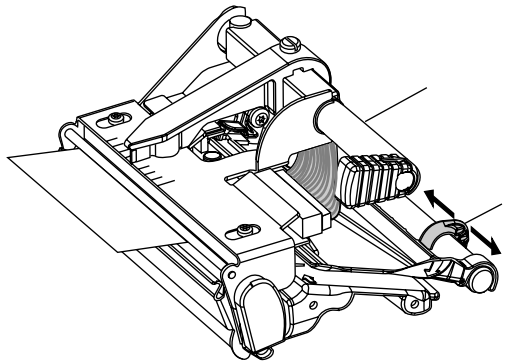
Tear-Off, cont.

7



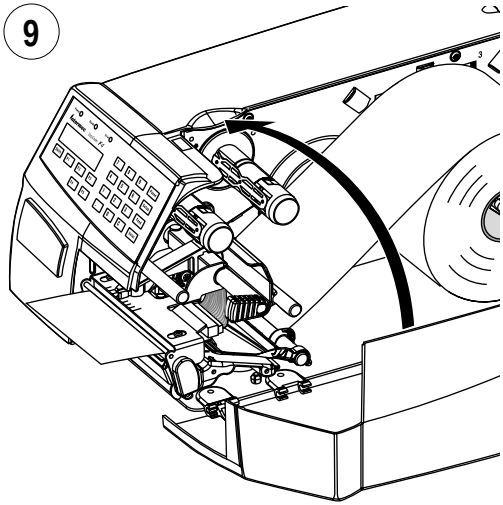
Turn the printhead lift lever counterclockwise to engage the printhead.

8



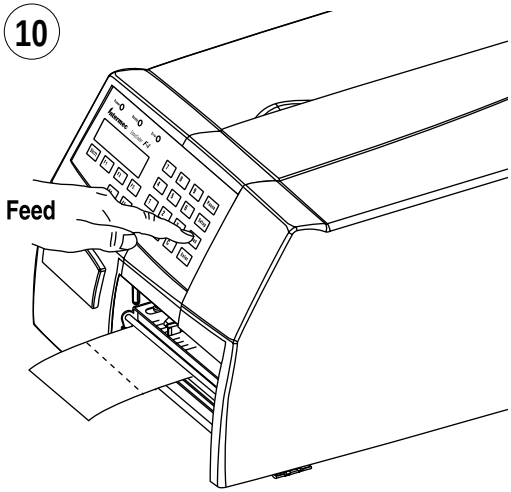
Adjust the position of the green edge guide so the media is guided with a minimum of play.

9



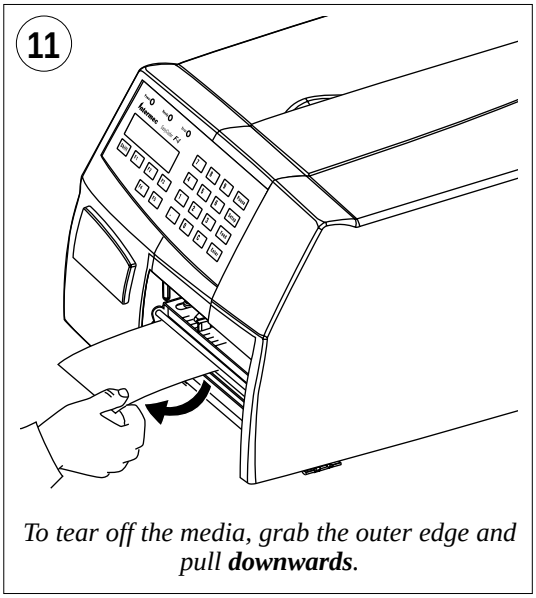
Close the side door.

10



*Press the **Feed** key to advance the media and adjust the media feed.*

Tear-Off, cont.



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

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

Fully automatic loading, without the operator having to press any key, requires a special set of Intermec Fingerprint instructions in the application program.

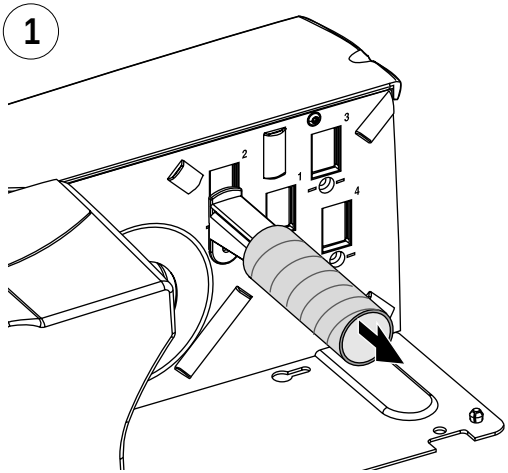
In addition to the media load procedure for tear-off (straight-through) operation described earlier in this chapter, the EasyCoder F4 can optionally be fitted with a set of Quick-Load guides that makes media load much easier and quicker, especially if the printer has a short side door. See Chapter 10, "Options" for installation instructions.

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. Illustrations in this chapter show the narrow type of guides.

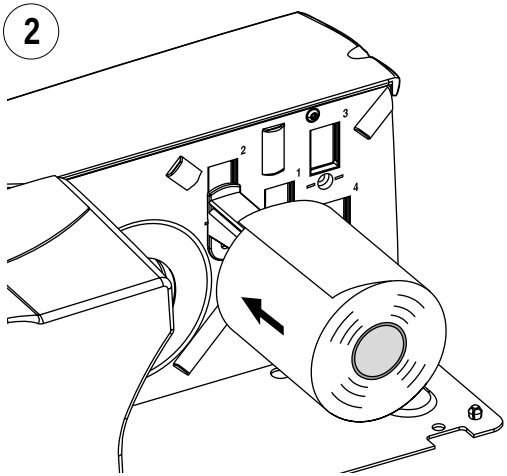
Quick-Load cannot be combined with peel-off (self-strip) operation.

Use the <**Feed**> key (see figure #5) when loading the same type of media. When switching to a new type of media, or if the printer does not feed out the media properly, simultaneously press the <**Shift**> and <**Feed**> keys to perform a "testfeed."

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 10, "Options."



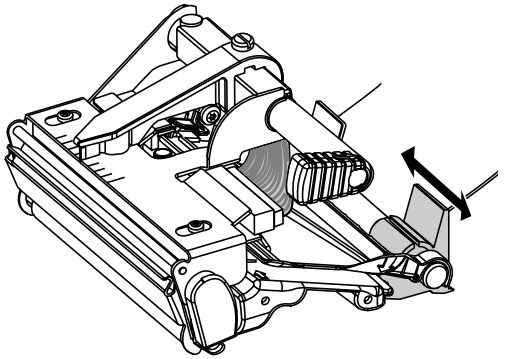
Remove any empty core from the media supply roll post.



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

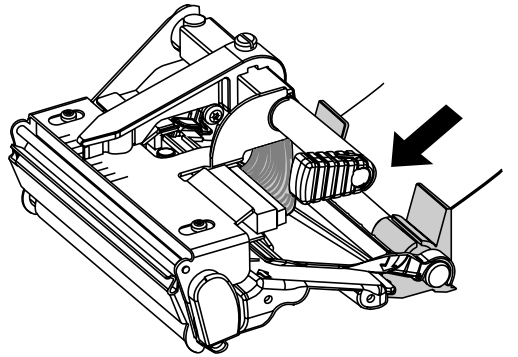
Tear-Off with Quick-Load, cont.

3



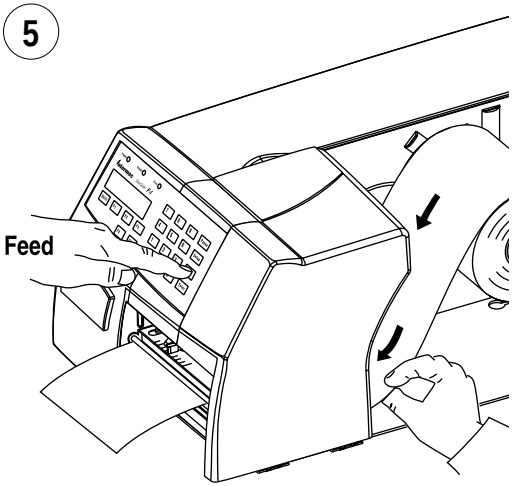
If necessary, adjust the outer Quick-Load guide to fit the width of the media.

4



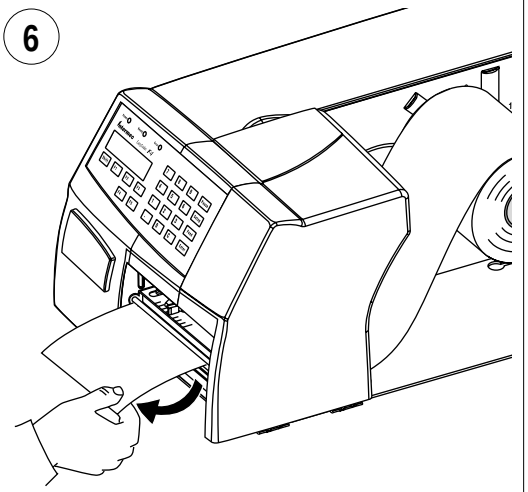
Insert the media between the guides and feed it forward until the media reaches the platen roller and cannot be inserted any further.

5



*Keep pushing the media forward while pressing the **Feed** key.*

6



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

Cut-Off

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.

The EasyCoder F4 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).

Use the <**Feed**> key (see figure #12) when loading the same type of media. When switching to a new type of media or if the printer does not feed out the media properly, simultaneously press the <**Shift**> and <**Feed**> keys to perform a "testfeed."

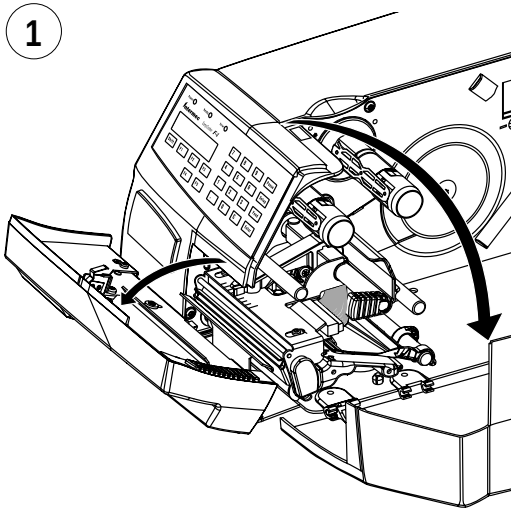
Tear-off can be used for:

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

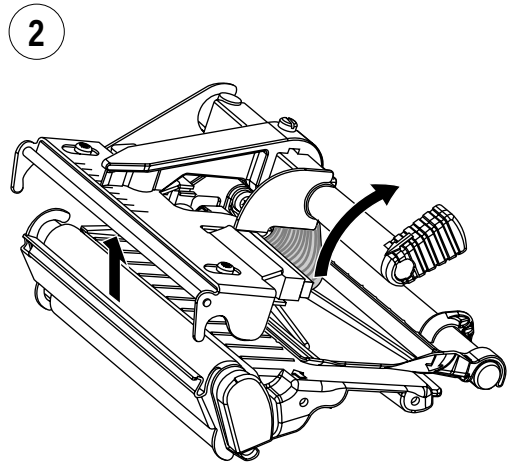
The cutter is designed to cut through paper-based media with a thickness between 60 and 175 µm, whick roughly corresponds to a paper weight of 60 to 175 grams/m^2 (basis weight 40 to 120 lb). The cutter should not be used to cut through labels, because the adhesive will stick to the shears, which can 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.



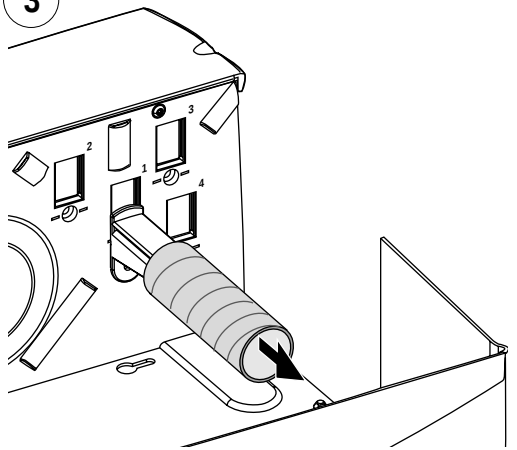
Open the cutter and the side door.



Turn the printhead lift lever clockwise to raise the printhead.

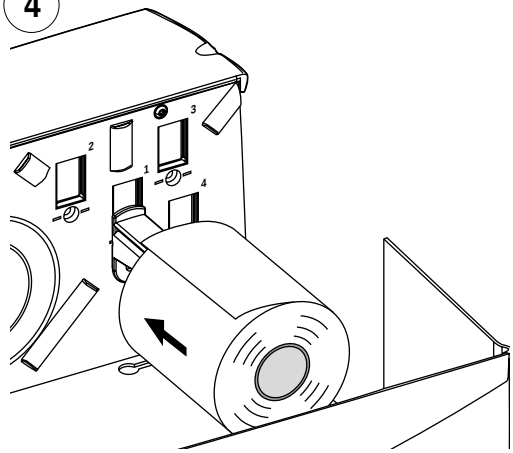
Cut-Off, cont.

3



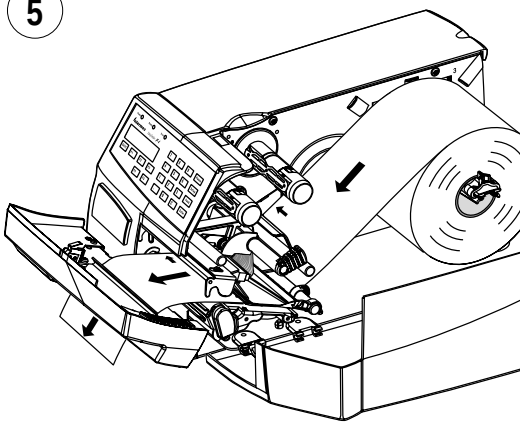
Remove any empty core from the media supply roll post.

4



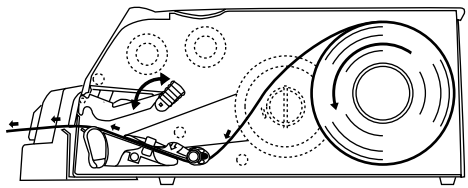
Fit a new roll of media on the supply post and adjust the edge guide so the roll becomes flush with the center section.

5



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

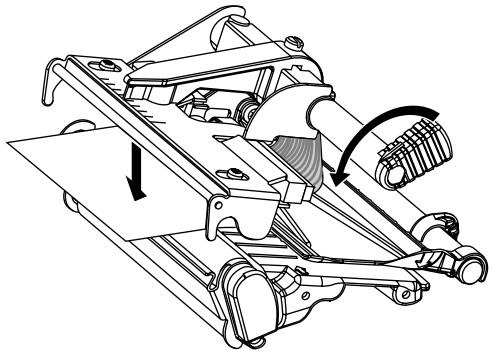
6



This diagram shows the media path.

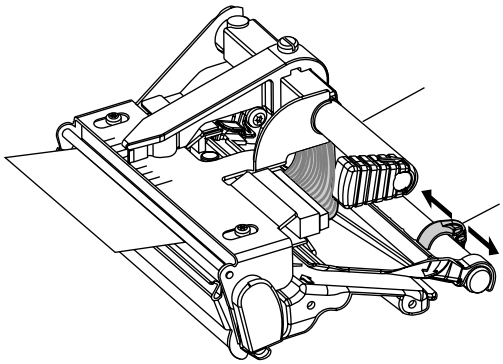
Cut-Off, cont.

7



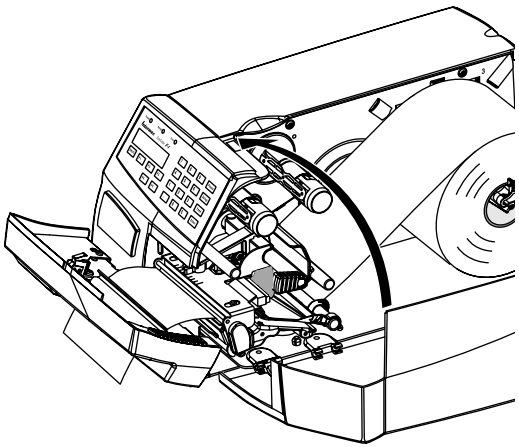
Turn the printhead lift lever counterclockwise to engage the printhead.

8



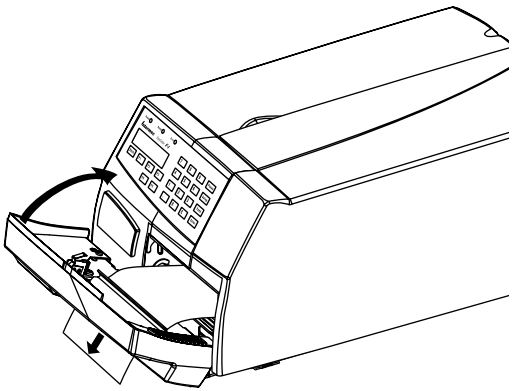
Adjust the position of the green edge guide so the media is guided with a minimum of play.

9



Close the side door.

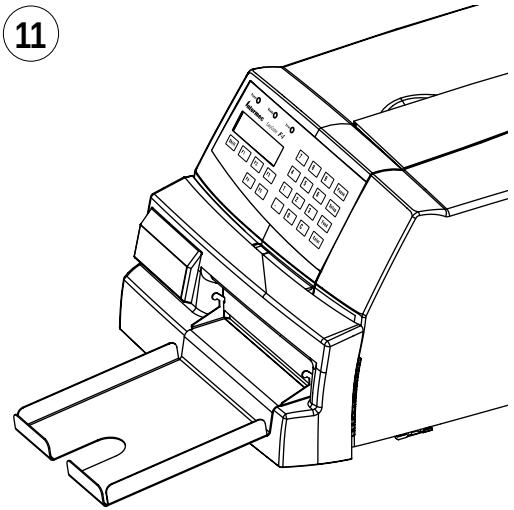
10



Close the cutter while pulling at the media.

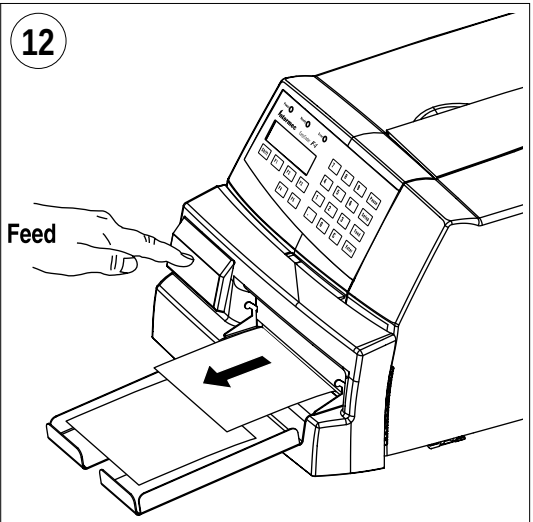
Cut-Off, cont.

11



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

12



*Press the **Feed** key to advance the media and adjust the media feed.*

Peel-Off
(Self-strip)

The EasyCoder F4 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.

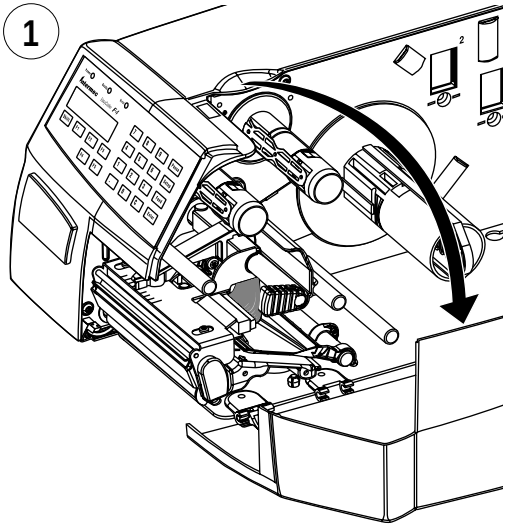
Peel-off operation cannot be performed when Quick-Load guides are fitted.

Use the <**Feed**> key (see figure #13) when loading the same type of media. When switching to a new type of media, or if the printer does not feed out the media properly, simultaneously press the <**Shift**> and <**Feed**> keys to perform a “testfeed.”

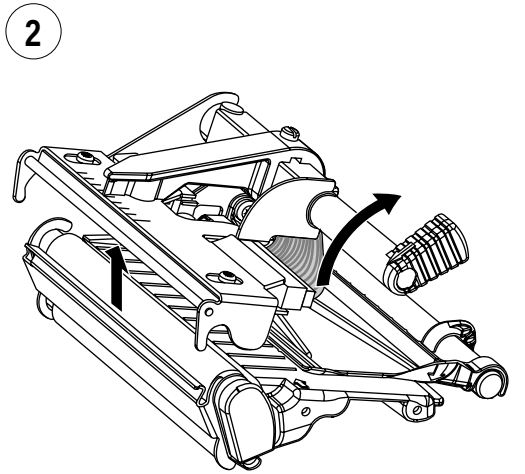
Peel-off can only be used for:

- Self-adhesive labels with liner

An optional label taken sensor can hold the printing of the next label in the batch until the present label has been removed, see Chapter 10, “Options.”



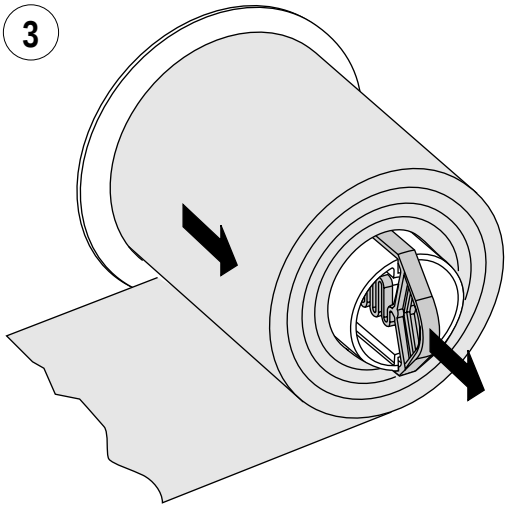
Open the side door.



Turn the printhead lift lever clockwise to raise the printhead.

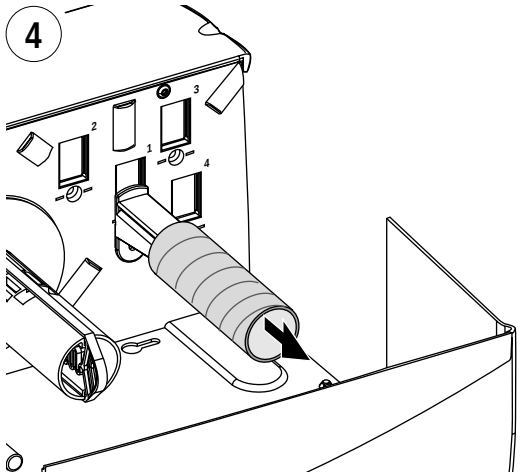
Peel-Off, cont.

3



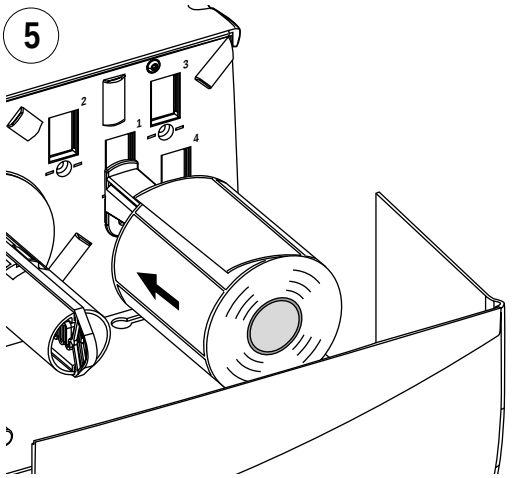
Pull out the handle to collapse the takeup hub, then remove any liner.

4



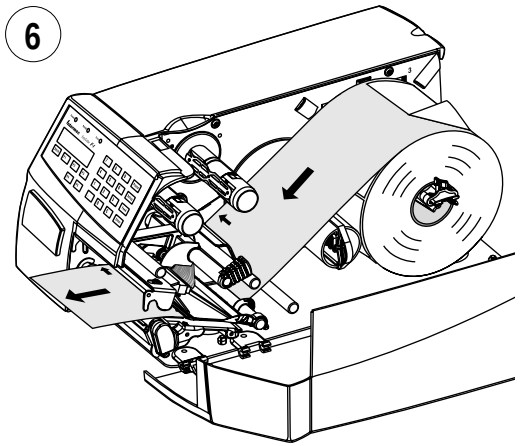
Remove any empty core from the media roll supply post. Remove the edge guide if necessary.

5



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

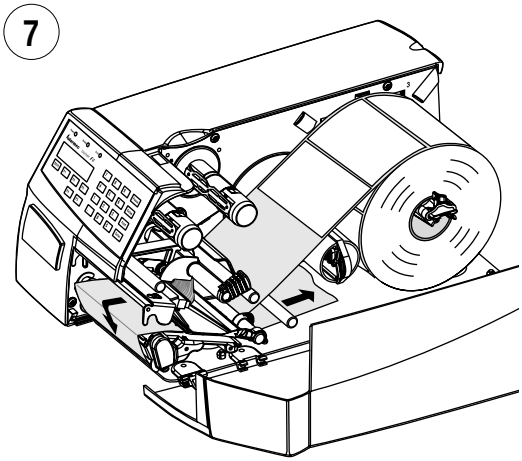
6



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

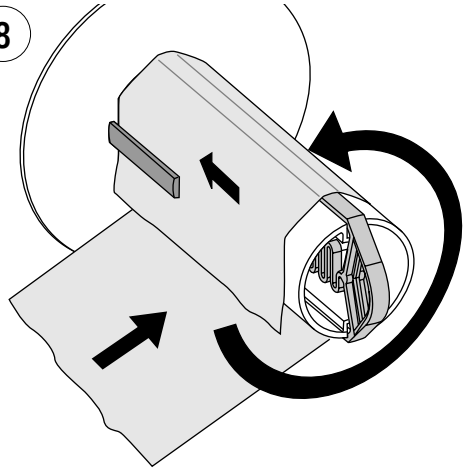
Peel-Off, cont.

7



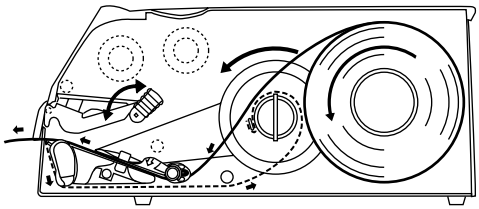
Route the liner around the tear bar and the liner drive roller and back under the print mechanism and guide shaft.

8



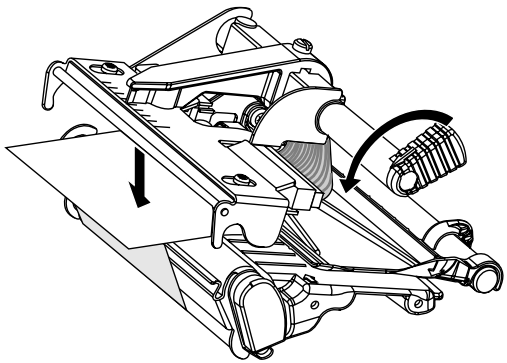
Insert the start of the liner under the lip of the takeup hub, then rotate the hub counterclockwise a few turns to wind up some of the liner.

9



This diagram shows the media and liner paths.

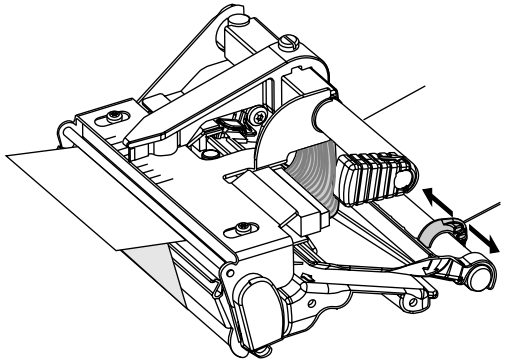
10



Turn the printhead lift lever counterclockwise to engage the printhead.

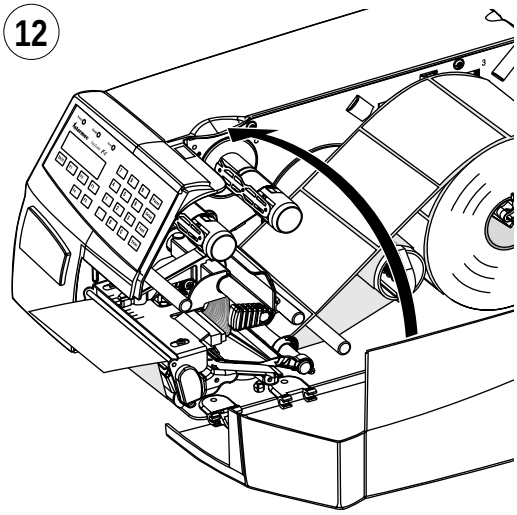
Peel-Off, cont.

11



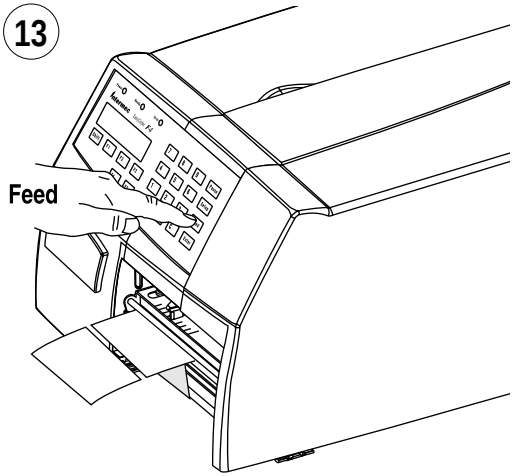
Adjust the position of the green edge guide so the media is guided with a minimum of play.

12



Close the side door.

13



*Press the **Feed** key to advance the media and adjust the media feed.*

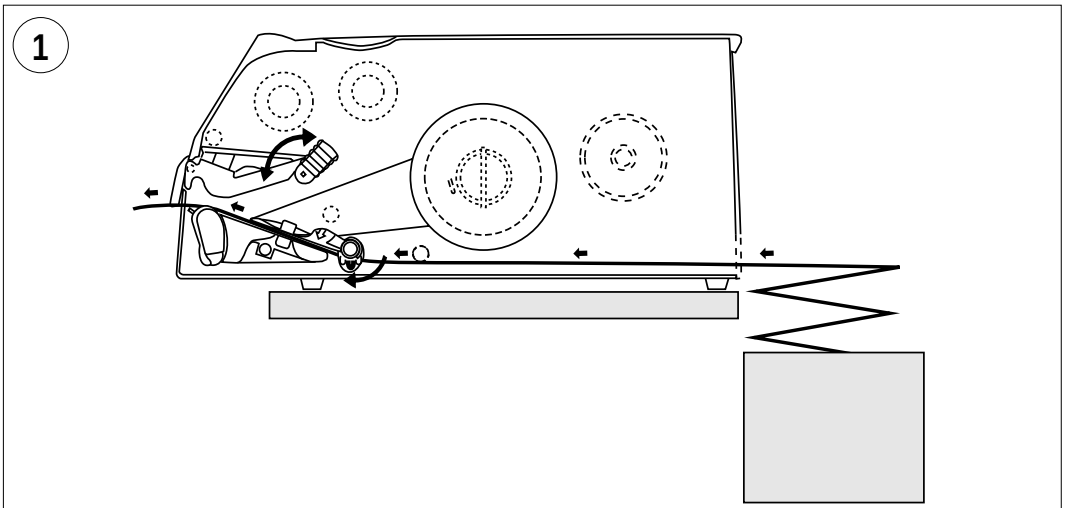
External Supply

The EasyCoder F4 can print on labels, tickets, tags, and continuous stock in various forms. This section describes the case when the media supply is placed behind the printer, usually in the form of fan-folded tickets or tags. External supply can be used with tear-off (straight-through) printing–preferably with Quick-Load.

External supply can be used with both short and long side doors and there is no need to remove the media supply roll post. External supply cannot be used when the printer is fitted with an 8-inch Megatop.

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.

Thermal Transfer Printing

Ribbon Load

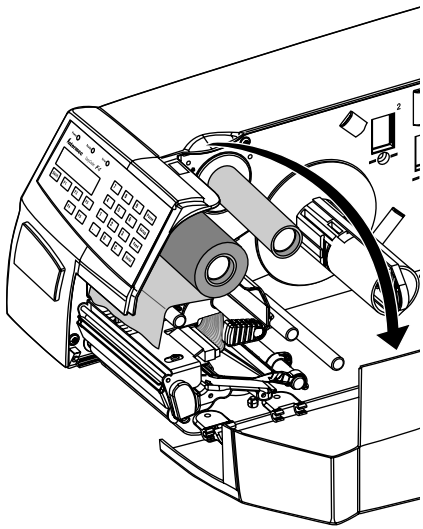
The EasyCoder F4 can print on labels, tickets, tags, and contionuous stock using either direct thermal printing on special heat-sensitive media or thermal transfer printing using a special ink-coated ribbon. For thermal transfer printing, the printer must be fitted with a transfer ribbon mechanism.

Thermal transfer printing makes it possible to use a wide range of receiving face materials. Make sure to select a type of ribbon that matches the type of receiving face material (see Appendix 2, "Media Specification") and to set up the printer properly (see Chapter 7, "Setting Up the Printer").

The EasyCoder F4 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.

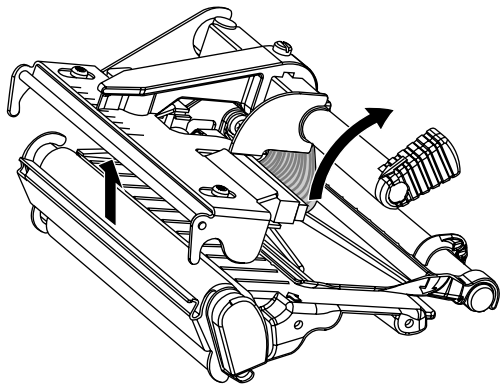
Most transfer ribbons do not smear at room temperature.

1



Open the side door.

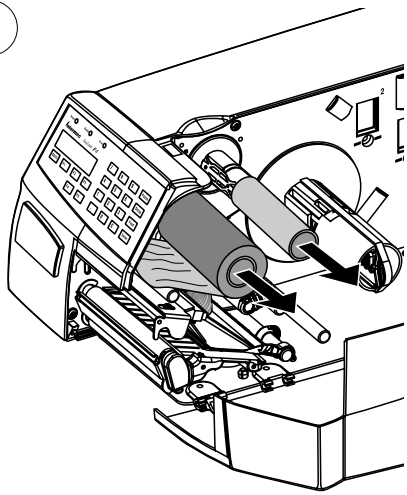
2



Turn the printhead lift lever clockwise to raise the printhead

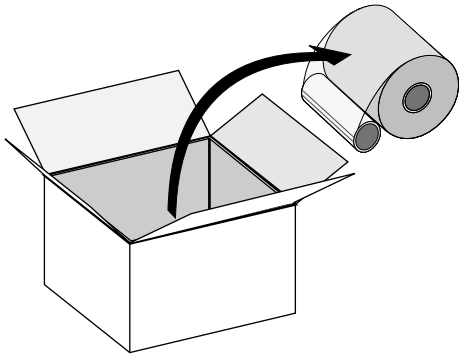
Ribbon Load, cont.

3



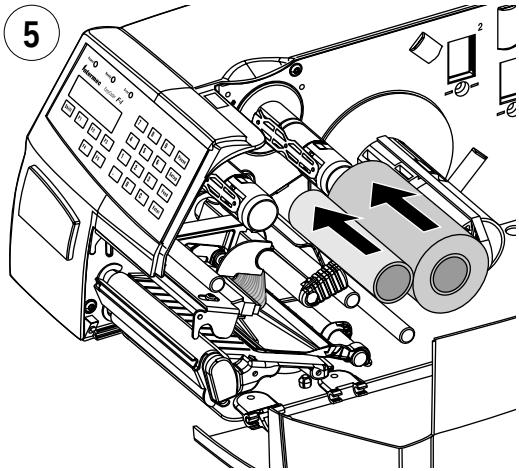
In case of ribbon reload, remove any used ribbon and empty ribbon core.

4



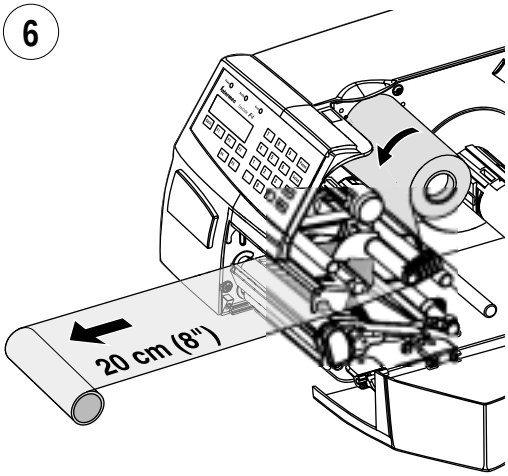
Unpack a roll of original Intermec thermal transfer ribbon.

5



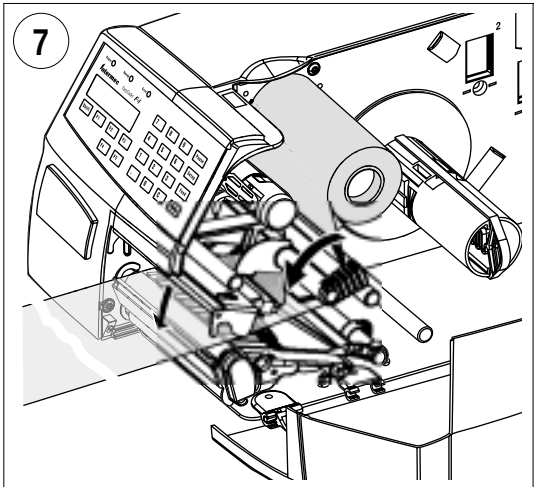
Slide the ribbon roll onto the supply hub so the ink-coated side faces down when the ribbon is routed through the print mechanism.

6

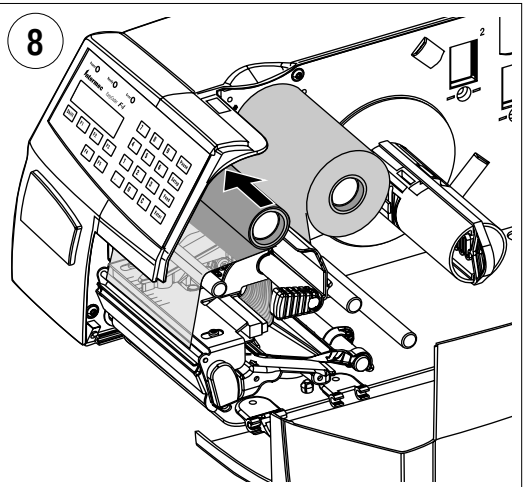


Route the ribbon through the print mechanism and pull out approximately 20 cm (8 inches) of ribbon.

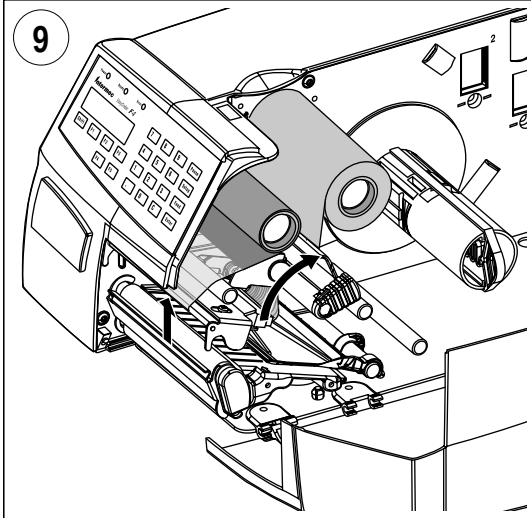
Ribbon Load, cont.



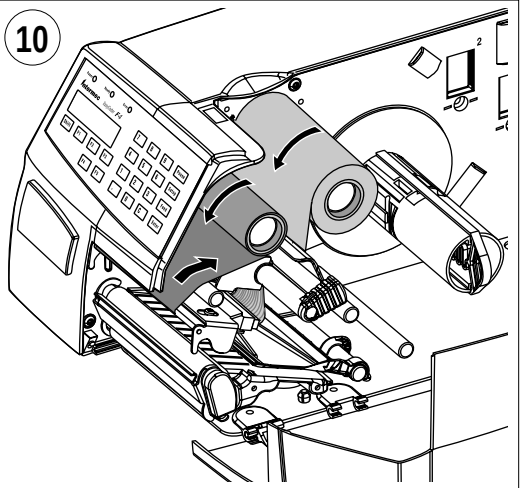
Without releasing the ribbon, turn the printhead lift lever counterclockwise to engage the printhead and lock the ribbon.



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



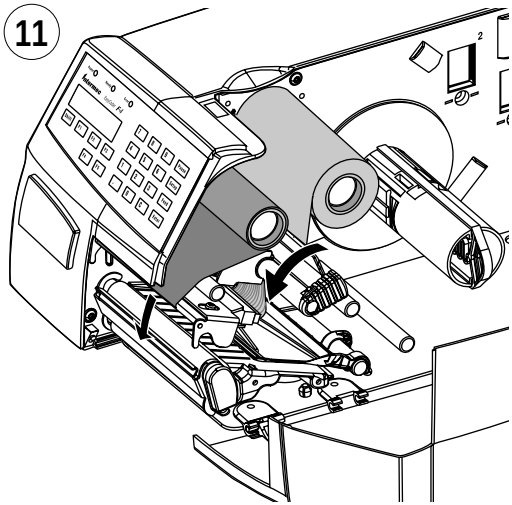
Turn the printhead lift lever clockwise to raise the printhead and release the ribbon.



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

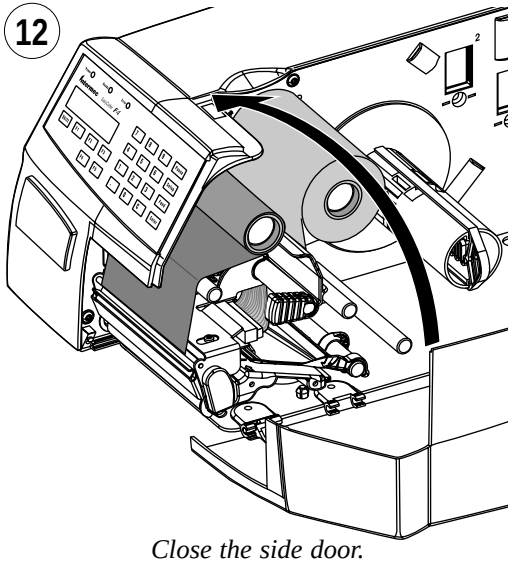
Ribbon Load, cont.

11



Turn the printhead lift knob counterclockwise to engage the printhead.

12



Close the side door.

Setting Up the Printer

Description

The setup controls the printer in regard of serial communication, media feed, and print speed, 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 using one of the methods described below. The setup may also be changed, manually or automatically, by Intermec PrintSet, InterDriver, and LabelShop, or by third-party application programs.

- **Setup Mode**
  - Press the <**Setup**> key on the printer's built-in keyboard to enter the Setup Mode, or
  - select the *Setup* option in Intermec Shell to enter the Setup Mode, or
  - execute the Intermec Fingerprint *SETUP* instruction to enter the Setup Mode, or
  - access the Setup Mode via the printer's home page using an optional EasyLAN 100i interface board.

  See Chapter 8, "Setup Mode" in this manual and the documentation of the EasyLAN 100i interface board.
- **Intermec Shell**
  - Use *Terminal Setup* option to change the setup remotely from the host.

  See Chapter 9, "Intermec Shell" in this manual.
- **Intermec Fingerprint**
  - Use *setup strings* to change individual setup parameters remotely from the host, or
  - use *setup files* to create sets of setup parameters remotely from the host.

  See Intermec Fingerprint v7.xx, Reference Manual.
- **Intermec Direct Protocol**
  - Use *setup strings* to change individual setup parameters remotely from the host.

  See Intermec Direct Protocol v7.xx, Programmer's Guide.
- **EasySet Bar Code Wand**
  - Scan a Code 128 bar code containing the setup parameter id. and the desired value or choice.

  See Appendix 4, "EasySet Bar Code Wand Setup."

Default Setup

The printer's default setup is listed below:

Ser-Com "uart1:"

Baud rate:	9600 bps
Character length:	8 bits
Parity:	None
Stop bits:	1 bit
RTS/CTS:	Disable
ENQ/ACK:	Disable
XON/XOFF, data to host:	Disable
XON/XOFF, data from host:	Disable
New line:	CR/LF
Receive buffer:	300 bytes
Transmit buffer:	300 bytes

Feedadjust

Startadjust:	0
Stopadjust:	0

Media

X-start:	24
Width:	832
Length:	1200
Media type:	Label (w Gaps)
Paper type:	Thermal Transfer
Ribbon constant:	90
Ribbon factor:	25
Label offset:	0
Low diameter;	36
Contrast:	±0%

Print Defines

Print speed:	100 mm/sec.

Reading the Current Setup

The printer's current setup values can be read from the printer's display window by browsing through the Setup Mode, or from the host by browsing through the Terminal Setup of Intermec Shell.

You can list the printer's current setup by printing test label #5 in the Setup Mode or by using Intermec Shell.

The current setup can be sent to the host via the standard serial communication channel using a **`SETUP WRITE "uart1:"`** statement (see *Intermec Fingerprint v7.xx, Reference Manual)*.

Setup Parameters

Serial Communication

- Baud Rate
- Character Length
- Parity
- Stop Bits
- Flow Control
- New Line
- Receive Buffer
- Transmit Buffer

The serial communication parameters control the communication between the printer and the connected computer or other devices on the standard serial port "uart1:" and the optional serial ports "uart2:" and "uart3:". The optional ports require an optional interface board. The printer's firmware detects if an interface board is installed in the printer and presents additional sets of communication setup menus depending on type of communication (refer to diagrams 3-5 in Chapter 8, "Setup Mode").

The serial communication parameters have no effect on parallel communications, on Ethernet communications, or on the IN and OUT ports on the optional Industrial Interface Board.

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

Baud Rate

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

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

Setup Parameters, cont.

Serial Communication, cont.

Character Length

The character length specifies the number of bits that will define a character. Eight bits are recommended, because that option allows more special characters and characters specific for foreign languages to be used. Refer to the *Intermec Fingerprint v7.xx, Reference Manual* for information on which characters are available in various combinations of character length and character set.

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

Parity

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

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

Stop Bits

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

- 1 (default)
- 2

Flow Control

- ***RTS/CTS***

  RTS/CTS is a protocol where communication is controlled by currents through separate lines in the cable being set either to high or low. By default, this option is disabled.

  RTS high indicates that the transmitting unit is able to receive characters. RTS low indicates that the receive buffer is filled to 75% (see XON/XOFF).

  CTS high indicates that the unit transmitting the CTS signal is ready to receive data. CTS low indicates that the receive buffer is full (see XON/XOFF). In some computer programs, for example MS Windows Terminal, RTS/CTS is designated “Hardware.”

Setup Parameters, cont.

Serial Communication, cont.

- ***ENQ/ACK***
  In this protocol, communication is controlled by the control characters ENQ (ASCII 05 dec.) and ACK (ASCII 06 dec.) being transmitted on the same line as the data. The sending unit transmits ENQ at regular intervals. If the response ACK is not received, the transmission is held up awaiting an ACK character from the receiving unit. By default, ENQ/ACK is disabled.
- ***XON/XOFF***
  In this protocol, communication is controlled by the control characters XON (ASCII 17 dec.) and XOFF (ASCII 19 dec.) being transmitted on the same line as the data. XON/XOFF can be enabled/disabled separately for data received from the host by the printer (printer sends XON/XOFF) and for data transmitted to the host from the printer (host sends XON/XOFF).

  XOFF is sent from the printer when its receive buffer is filled to 75% and the transmission from the host is held, waiting for an XON character. When enough data have been processed so the receive buffer is filled only to 50%, the printer sends an XON character and the host resumes transmitting data. The same principles apply to XON/XOFF sent by the host, even if the percentage figure may differ.

  By default, XON/XOFF is disabled for data both ways.

New Line
Selects the character(s) transmitted from the printer to specify the switching to a new line. There are three options:

- CR/LF ASCII 13 dec. + ASCII 10 dec. (default)
- LF ASCII 10 dec.
- CR ASCII 13 dec.

Receive Buffer
The receive buffer stores input data received on the serial channel before processing. Default size is 300 bytes.

Transmit Buffer
The transmit buffer stores output data to be transmitted on the serial channel before transmission. Default size is 300 bytes.

Setup Parameters, cont.

Feedadjust

- Startadjust
- Stopadjust

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

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

Recommended Feed Adjustments

The following settings allow printing from the top of the label. Minor deviations from the recommended values may be required due to various combinations of media types, roll size, type of media supply device, and individual differences between printers.

Tear-Off:

Start adjust:	-100	(-12.5 mm)
Stop adjust:	0	(0 mm)

Cut-Off between labels:

Start adjust:	-240	(-30,0 mm)
Stop adjust:	+160	(+20.0 mm)

Peel-Off:

Start adjust:	-56	(-7.0 mm)
Stop adjust:	-44	(-5.5 mm)

Start Adjust

The Start Adjust value is given as a positive or negative number of dots (1 dot = 0.125 mm = 4.9 mils). Default value is 0, which places the origin a certain distance back from the forward edge of the copy.

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

Stop Adjust

The Stop Adjust value is given as a positive or negative number of dots (1 dot = 0.125 mm = 4.9 mils). Default value is 0, which stops the media feed in a position suitable for tear off operation.

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

Setup Parameters, cont.

Media

- Media Size
- Media Type
- Paper Type
- Testfeed
- Contrast

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 Size

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

X-Start

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

By default, X-start is 24 dots, which places the inner margin of the print area 3 mm (0.118 inches) inside the edge of the media and gives a maximum print width of 808 dots (101 mm/3.976 inches). This prevents printing outside labels when the liner is slightly wider than the labels.

If you want to use the entire media width, change the X-start value to 0, which gives a maximum print width of 832 dots (104 mm/4.095 inches).

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

Width

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

Length

Specifies the length of the printable area in number of dots from the origin along the Y-coordinate and allocates memory space for two identical image buffers in the printer's temporary memory. The size of each buffer can be calculated using this formula:

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

Note that the temporary memory has other functions that also require memory space. To obtain a longer print area, the memory can be increased by fitting a larger DRAM SIMM on the printer's CPU board as described in the Service Manual.

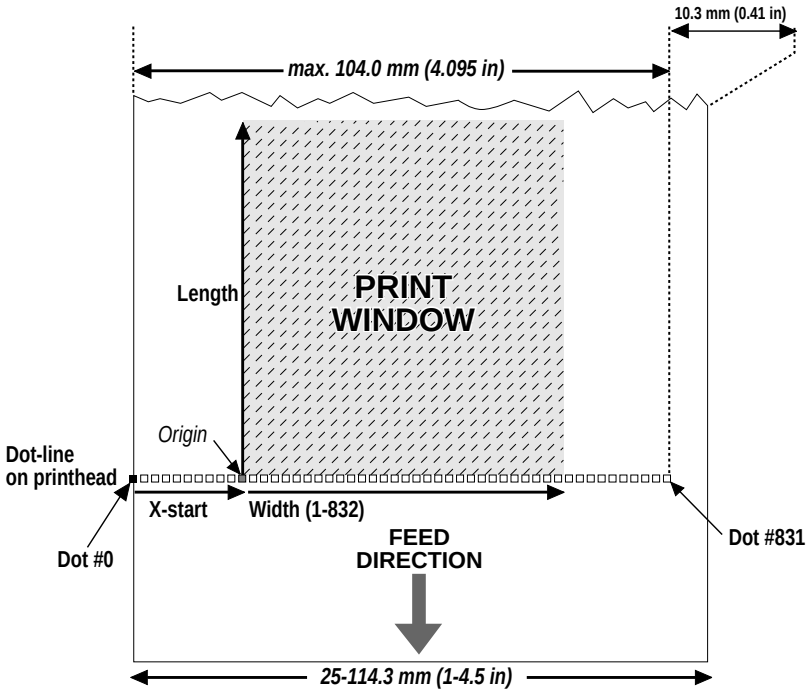
Setup Parameters, cont.

Media, cont.

Length, cont.

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

By setting up the X-start, the Width, and the Length, you will create a print window inside which the printing can be performed. Any object or field extending outside the print window in any direction will either be clipped or cause an error condition (*Error 1003 "Field out of label"*), see *Intermec Fingerprint v7.31 (or later), Reference Manual.*



Setup Parameters, cont.

Media, cont.

Media Type

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

- **Label (w gaps)** is used for adhesive labels mounted on liner.
- **Ticket (w mark)** is used for labels, tickets, or continuous stock provided with black marks at the back.
- **Ticket (w gaps)** is used for tickets and tags with detection slits.
- **Fix length strip** is used for continuous stock where the length of the print window decides the length of media to be fed out.
- **Var length strip** is used for continuous stock and adds 115 dots of media feed after the last printable dot (may even be a blank space character or a "white dot" in an image or character cell) to allow the media to be properly torn off.

It is important to select the correct media type, so the printer can indicate possible errors. Two error conditions may occur:

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

Paper Type

The Paper Type parameters control the heat emitted from the printhead to the transfer ribbon or direct thermal media in order to produce the dots that make up the printout image. Start by choosing between two alternatives:

- Thermal Transfer printing (default)
- Direct Thermal printing

Your choice will decide which parameters to enter next:

Thermal Transfer Printing

This option contains four parameters:

- Ribbon Constant *(range 50 to 115)*
- Ribbon Factor *(range 10 to 50)*
- Label Offset *(range -50 to 50)*
- Low Diameter[1] *(range 25 to 80 mm)*

Direct Thermal Printing

This option contains two parameters:

- Label Constant *(range 50 to 115)*
- Label Factor *(range 10 to 50)*

[1]. This parameter specifies the diameter of the ribbon supply roll, where SYSVAR (26) switches from 0 to 1, that is SYSVAR(26) = 0 means that there is still a sufficient supply of ribbon, whereas SYSVAR(26) = 1 means that it is time to consider replacing the ribbon supply. The diameter is expressed in millimetres and an accuracy of ±3 mm can be expected. Note that this setting has no effect unless SYSVAR(26) is read by a Fingerprint program (v7.40 or later).

Setup Parameters, cont.

Media, cont.

Recommended Settings

Intermec recommends that you use the paper type and print speed settings listed below to produce the highest possible print quality under normal conditions and to ensure maximum lifetime of the printhead. Use the EasySet bar code wand for easy media setup. Label materials are available from Intermec either in standard types and sizes, or in special materials and sizes.

When adjusting the image darkness for individual requirements or new label materials, keep the Label Factor at the recommended value for the type of direct thermal media. Decrease or increase the Label Constant for lighter or darker images respectively, depending on the requirements of the images or of the new label material.

General Paper Type Settings Guide

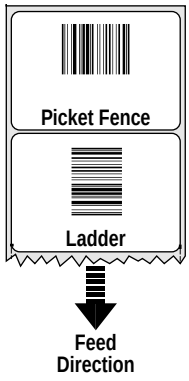
Sensitivity[1]	Label Constant	Label Factor	Max. Speed[3]
Low	100 – 115	40	100
Standard	86 – 99	40	125
High	70 – 85	40	175
Ultra high	50 – 69	40	200

[1]/. Please note that preprint and varnish decrese the sensitivity of direct thermal media.

Thermal Transfer Printing

Keep the Ribbon Factor for each ribbon type at the recommended value. Decrease or increase the Ribbon Constant for lighter or darker images respectively. For a new label material, start with an average Ribbon Constant value for the ribbon quality in question.

Bar Code Directions



Bar Code Directions

In the tables on the pages that follow, different maximum print speeds may be recommended depending on the direction of possible bar codes in the printout. Generally, ladder style bar codes are more demanding and may require a lower print speed, especially in connection with a large media roll and/or negative start adjust values (see “Print Speed” later in this chapter). The illustration to the left shows how the two type of bar code directions relate to the media feed direction.

Setup Parameters, cont.

Media, cont.

Direct Thermal Printing (Europe)

DT Type/ Speed	Media Designation	Label Constant	Label Factor	Max Rec. Print Speed (mm/sec)[1] Picket Fence Bar Code[2]	Ladder Bar Code
Top Coated/ Standard	Thermal Top Board[3]	100	40	100	100
	Thermal Top	95	40	125	125
Non Top Coated/ Standard	Thermal Eco	85	40	125	125
	Thermal Eco Board[3]	80	40	175	175
Top Coated/High	Thermal Top High Speed	85	40	175	175

Thermal Transfer Printing (Europe)

Ribbon Type	Receiving Material	Ribbon Constant	Ribbon Factor	Label Offset	Max Rec. Print Speed (mm/sec)[1] Picket Fence Bar Code[2]	Ladder Bar Code
GP02	TTR Uncoated	75	25	0	150	150
	TTR Matte Coated	80	25	0	150	150
	TTR Premium	70	25	0	150	150
HP66	TTR Matte Coated	100	25	0	200	200
	TTR Premium	85	25	0	200	200
	TTR Premium Board[3]	105	25	0	150	150
	TTR High Gloss White Premium	95	25	0	150	150
	TTR Polyethylene	75	25	0	150	150
	TTR Gloss Polyethylene	95	25	0	200	200
HP07	TTR Matte Coated	100	25	0	150	150
	TTR Premium	95	25	0	200	200
	TTR Premium Board[3]	105	25	0	150	150
	TTR High Gloss White Premium	110	25	0	150	150
	TTR Polyethylene	90	25	0	150	150
	TTR Gloss Polyethylene	100	25	0	200	150
HP05	TTR Matte Coated	95	25	0	150	150
	TTR Premium	80	25	0	200	200
	TTR Premium TBoard[3]	95	25	0	150	150
	TTR High Gloss White Premium	80	25	0	200	200
	TTR Polyethylene	75	25	0	100	100
	TTR Gloss Polyethylene	80	25	0	150	150
HR03	TTR High Gloss Polyester	100	30	0	150	150

[1]/. Exceeding the recommended print speed may cause the printhead to wear out prematurely. If the ambient temperature is lower than +15°C (+59°F), decrease print speed by 50 mm/sec.
[2]/. Also applies to printing of text, images, lines, and boxes.
[3]/. Requires high printhead pressure (see Chapter 13 “Adjustments, Printhead Pressure”).

Setup Parameters, cont.

Media, cont.

Direct Thermal Printing (North America)

DT Type/ Speed	Media Designation	Label Constant	Label Factor	Max Rec. Print Speed (mm/sec)[1] Picket Fence Bar Code[2]	Ladder Bar Code
Top Coated/ Standard	Duratherm II Tag[3]	112	40	100	100
	Duratherm II	95	40	100	100
Top Coated/ High	Duratherm Ltg	92	40	175	175
	Duratherm IR	82	40	150	150

Thermal Transfer Printing (North America)

Ribbon Type	Receiving Material	Ribbon Constant	Ribbon Factor	Label Offset	Max Rec. Print Speed (mm/sec)[1] Picket Fence Bar Code[2]	Ladder Bar Code
Basewax (4022)	Duratran II	55	25	0	200	200
	Duratran II Tag[3]	70	25	0	200	200
	Duratran VG	70	25	0	150	150
	Kimdura	70	25	0	200	200
	Kimdura Tag	70	25	0	200	200
	Syntran	65	25	0	200	200
Standard (4085)	Duratran II	65	25	0	150	150
	Duratran II Tag[3]	75	25	0	150	150
	Kimdura	80	25	0	150	150
	Kimdura Tag	80	25	0	150	150
	Syntran	70	25	0	150	150
Premium (5050)	Duratran II	65	25	0	150	150
	Duratran II Tag[3]	75	25	0	150	150
	Kimdura	80	25	0	150	150
	Kimdura Tag	80	25	0	150	150
	Matte Polyester	70	25	0	150	150
	Syntran	70	25	0	150	150
Super Premium	Polyester	90	25	0	200	200

[1]/. Exceeding the recommended print speed may cause the printhead to wear out prematurely. If the ambient temperature is lower than +15°C (+59°F), decrease print speed by 50 mm/sec.
[2]/. Also applies to printing of text, images, lines, and boxes.
[3]/. Requires high printhead pressure (see Chapter 13 “Adjustments, Printhead Pressure”),

Setup Parameters, cont.

Media, cont.

Contrast

Use the contrast 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. 11 options are displayed in an endless loop from -10% to +10%. Default value is 0%. The contrast is reset to the default (±0) whenever a new paper type is specified, regardless which method has been used.

Testfeed

The sensitivity of the label stop sensor (LSS) may need to be adjusted when switching from one type of media to another. This is especially the case when using adhesive labels since the transparency of the liner (backing paper) may vary. Adjusting the LSS entails feeding out a number of blank copies until the firmware has decided the proper setting for the LSS. At the same time, the front edges of the labels, tickets, etc. are detected so the feed control can position the media according to the Feedadjust parameter (same as the Intermec Fingerprint statement TESTFEED). The comparator and amplifier values of the LSS are displayed (read-only information).

Print Defines

- Head Resistance
- Testprint
- Print Speed
- LTS (optional)

Head Resistance

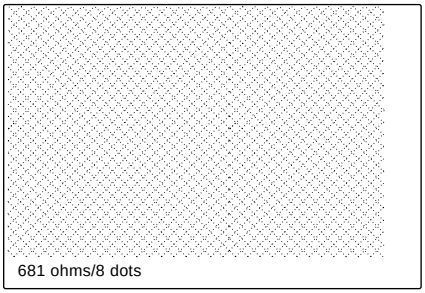
The printhead resistance is measured automatically at startup (read-only information).

Testprint

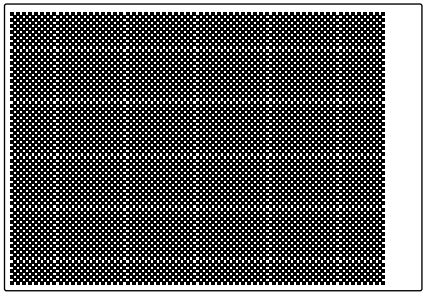
Test label #1 to #4 check the printout quality and facilitate adjustment of the printhead pressure, see Chapter 13, "Adjustments." Test label #5 lists the printer's current setup (extra labels may be printed if the printer is fitted an optional interface board). Test label #6 is only printed if the printer has an optional EasyLAN 100i interface board. Test labels #1 to #5 are illustrated on the next page. If the printer refuses to print a test label, press the <**F3**> key to find out what is wrong, for example printhead lifted or out-of paper.

Setup Parameters, cont.

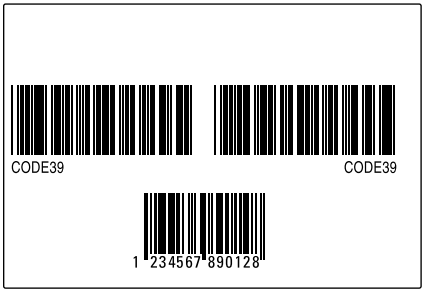
Print Defines, cont.



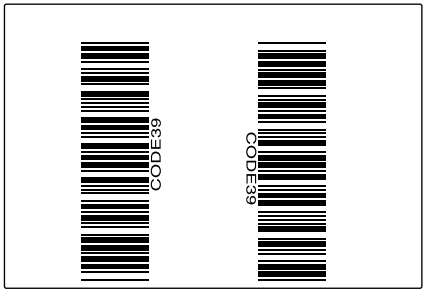
Test Label #1



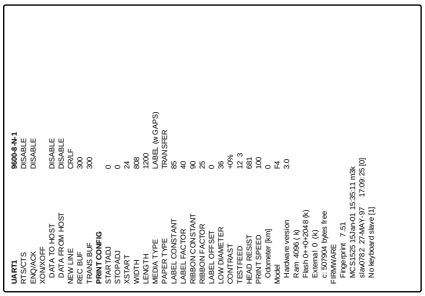
Test Label #2



Test Label #3



Test Label #4



Test Label #5

Setup Parameters, cont.

Print Defines, cont.

Print Speed

The print speed is variable between 100 and 200 mm/sec. Generally, the lower the speed, the better the printout quality. This is especially true when printing bar codes with the bars running across the media path ("ladder style"), when printing on demanding face materials, and when printing at low ambient temperatures. Refer to the tables under "Media" earlier in this chapter for maximum print speed values. The default setting is 100 mm/sec. (≈ 4 inches/sec.).

Caution!

The combination of a larger media roll (>152 mm/6 inches diameter) and/or narrow media width in combination with high print speed (> 150 mm/6 inches per sec.) could cause jerks in the media feed. Such jerks will compress text and spoil the readability of ladder-style bar codes placed close to the front edge of the label. In case of batch printing, only the first label in the batch will be affected. Negative startadjust values tend to increase the jerks.

- *If the media roll is larger than 152 mm (6 inches), do not use a print speed > 150 mm/s.*
- *If a negative start adjust is used, do not use a print speed > 125 mm/s.*
- *Narrow media width may require further restrictions on print speed.*
- *Avoid placing text and ladder-style bar codes close to the front edge of labels.*

Setup Parameters, cont.

Print Defines, cont.

LTS (Label Taken Sensor)

The sensitivity of the LTS may need to be adjusted according to ambient light conditions and reflective characteristics of the back side of the media. The LTS setup options are only displayed if an optional label taken sensor is installed in the printer.

- **LTS Adjust**
  Press <**Enter**>. A label is fed out. Remove the label and press <**Enter**> again. A menu shows the sensitivity automatically selected by the firmware and the range, in which the LTS will work. Press <**Enter**> again and you will proceed to the LTS Test menu.
- **LTS Test**
  Press <**Enter**>. A label is fed out. Remove the label and a new label should be fed out automatically. Repeat until you are sure the LTS works properly. Then press <**Enter**> to stop and exit.
- **LTS Value**
  Press <**Enter**>. You can enter a new value in the range indicated in the LTS Adjust menu (see above). Min/max values are in the range 0 to 10.

Setup Mode

Entering Setup Mode at Installation

The method of entering the Setup Mode depends on which startup files are stored in the printer's memory, a subject that was more thoroughly discussed in Chapter 4, "Starting Up."

EasyCoder F4 with Intermec Shell

- Switch on the power.
- When the display shows the message *"Enter=Shell; x sec..."*, press <**Enter**>.
- Press <**Setup**> (this facility can be used anywhere within Intermec Shell).
- Set up the printer as described in this chapter.
- Return to Intermec Shell by pressing <**Setup**>.

EasyCoder F4 with a custom-made application program

- Normally, there is no need to enter the Setup Mode for custom-made application programs. Necessary provisions for changing the setup, manually or automatically, should be provided by the program.

Navigating in Setup Mode

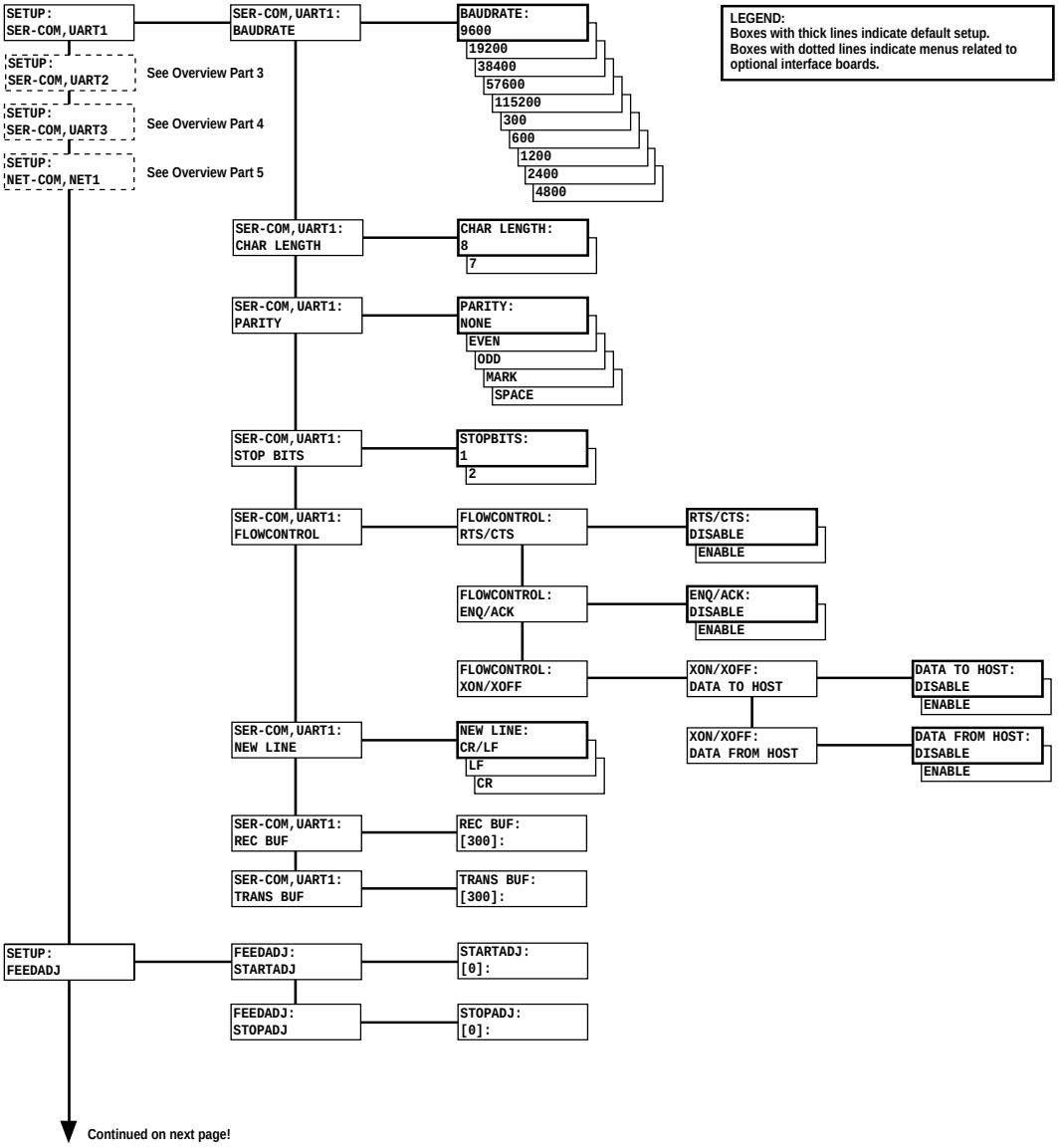
While going through the setup procedure, you are guided by texts in the printer's display. You can navigate between setup menus, acknowledge displayed values, select or type new values, etc. by using the keys on the printer's keyboard.

Note!
An external keyboard cannot be used inside the Setup Mode.

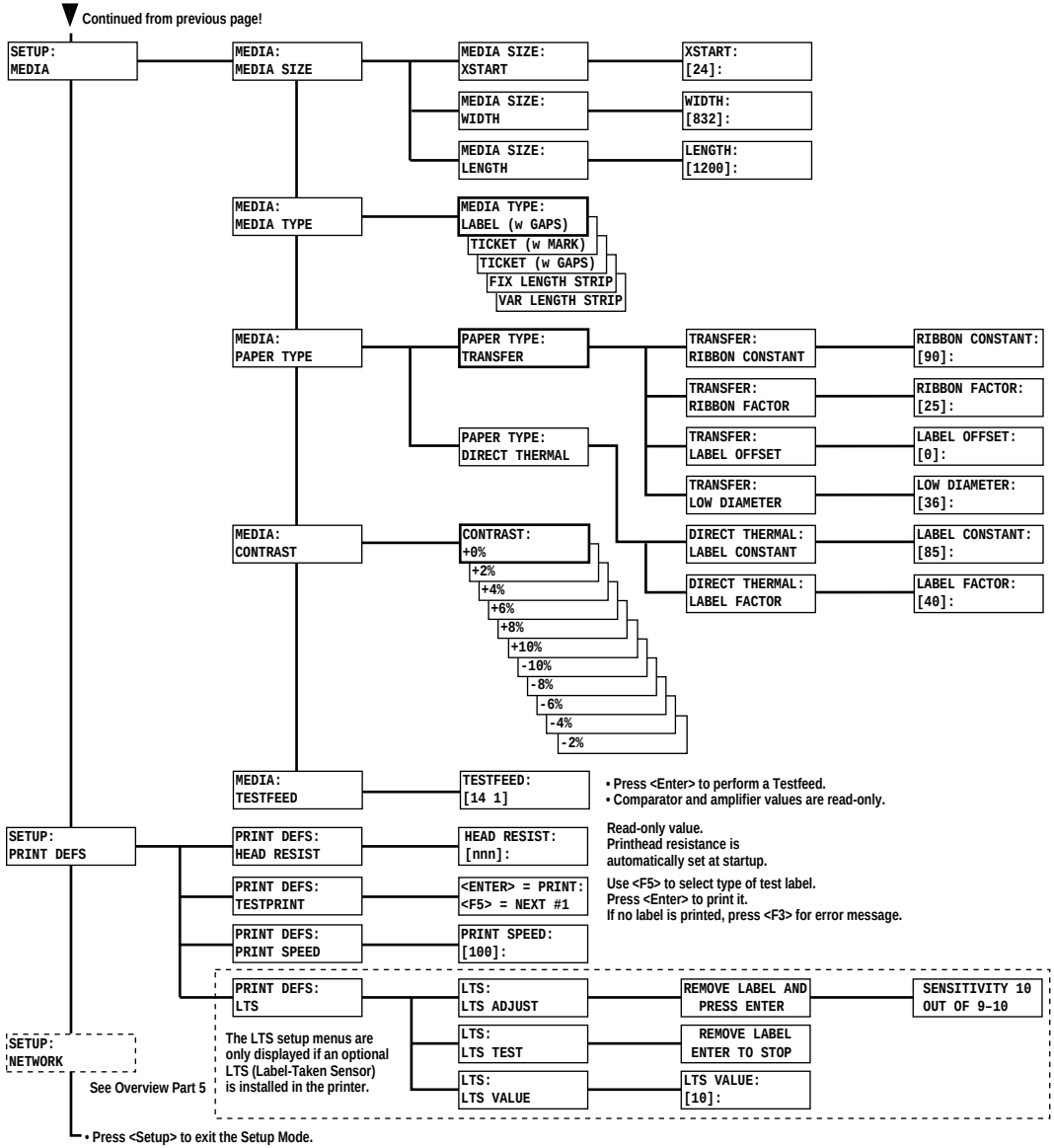
F1	Move one menu to the left on the same level[1].
F2	Move one menu to the right on the same level[1].
F3	Display error message at test label printing failure.
F4	Move up one level or scroll back in a stack of options[1].
F5	Move down one level or scroll forward in a stack of options[1].
0 – 9	Enter numeric values.
.	Specify negative values (leading position).
C	Clear erroneously entered values.
Enter	Acknowledge and move to next menu. Perform testfeeds in the Testfeed menu. Print test labels in the Test Label menu.
Setup	Exit the Setup Mode. (Can be used anywhere in the Setup Mode.)

[1]/. "Left", "right", "up", and "down" refer to the overviews later in this chapter.

Setup Mode Overview, Part 1
(Intermec Fingerprint v7.50)

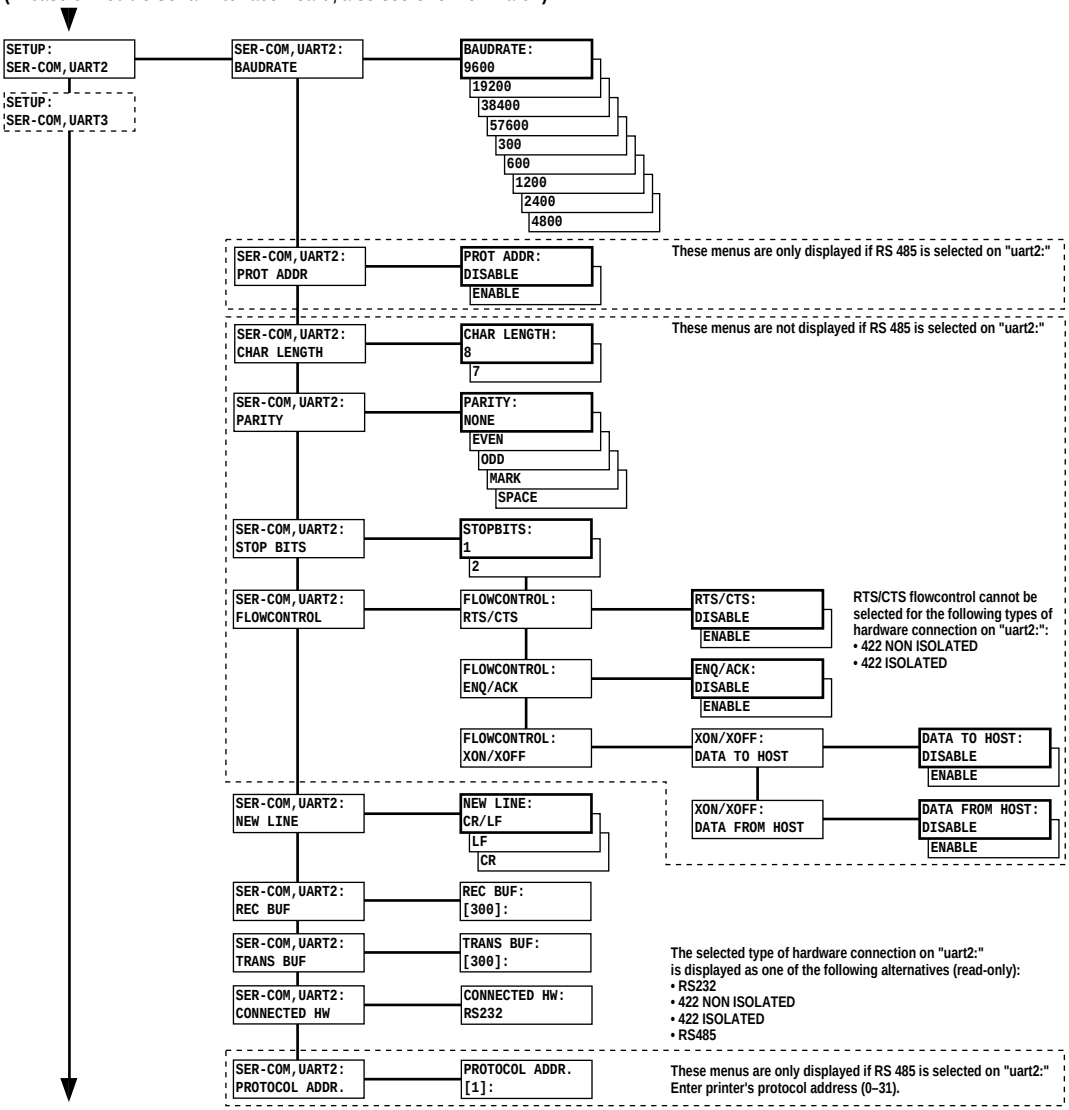


Setup Mode Overview, Part 2
(Intermec Fingerprint v7.50)



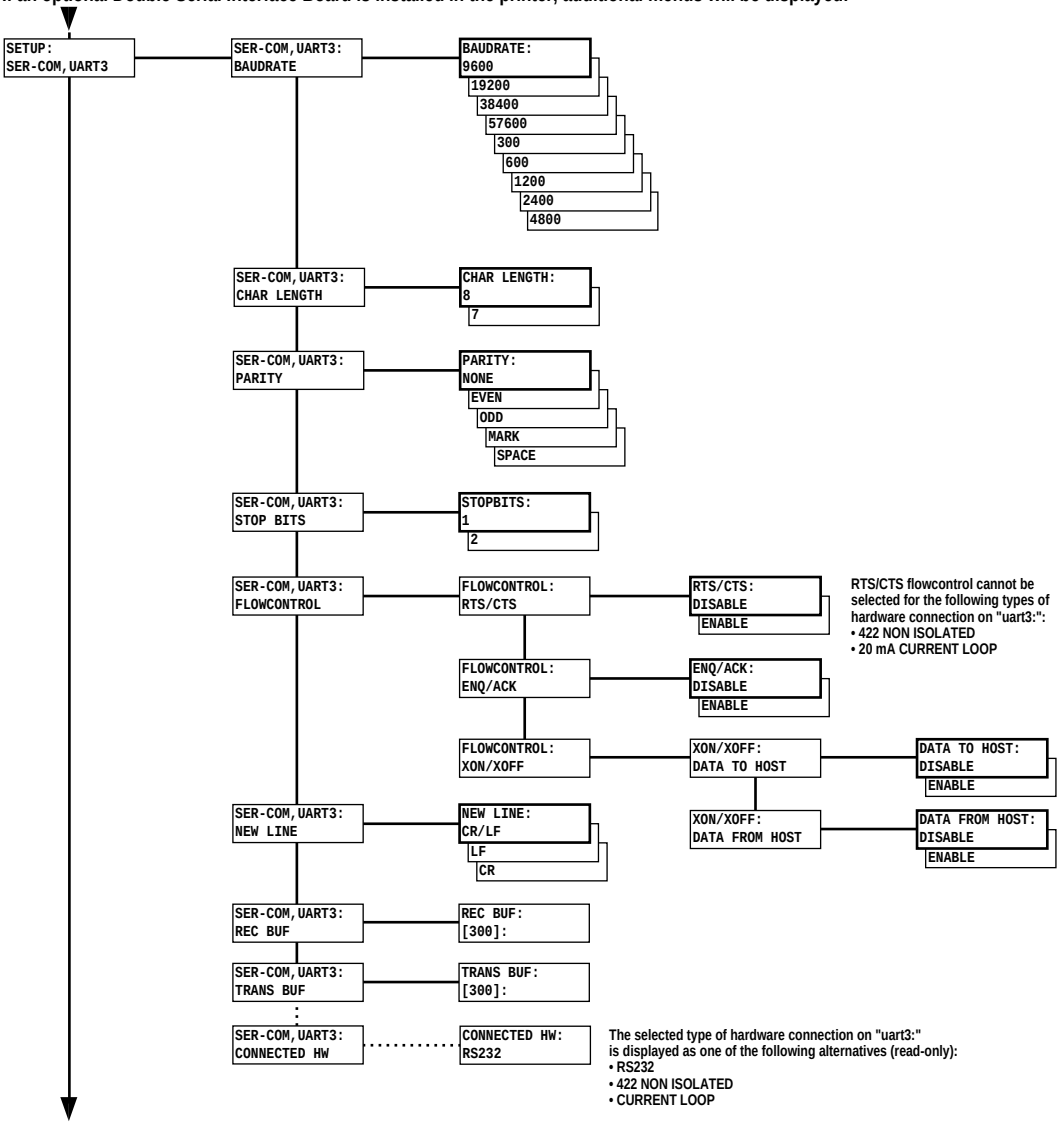
Setup Mode Overview, Part 3
(Intermec Fingerprint v7.50)

If an optional Double Serial or Industrial Interface Board is installed in the printer, additional menus will be displayed (in case of Double Serial Interface Board, also see Overview Part 4):



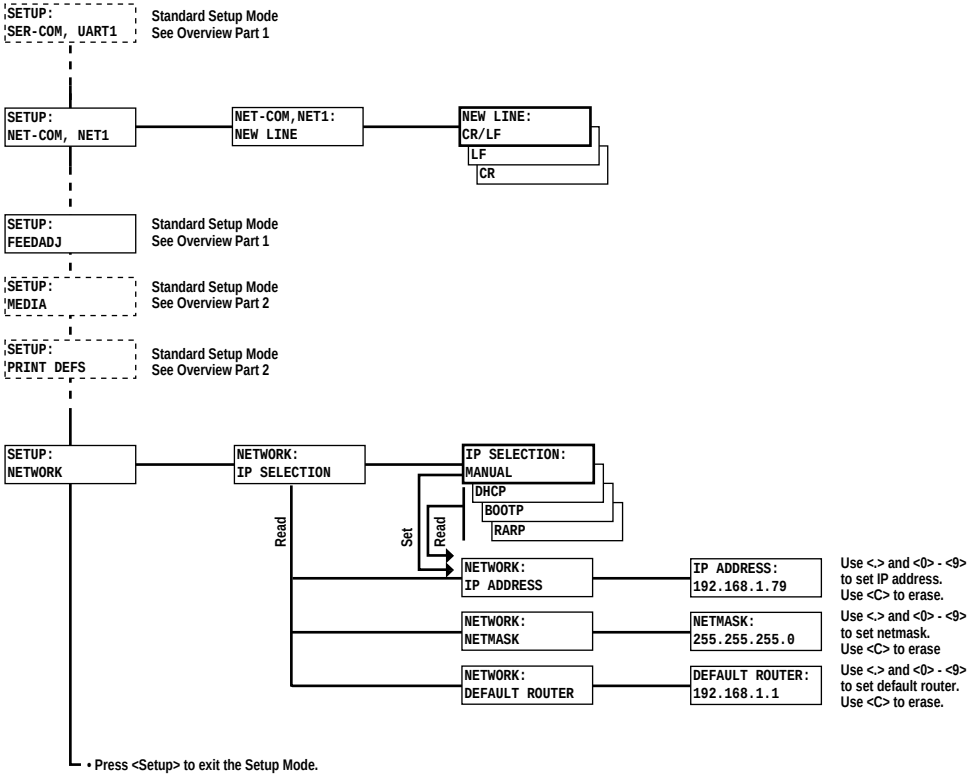
Setup Mode Overview, Part 4
(Intermec Fingerprint v7.50)

If an optional Double Serial Interface Board is installed in the printer, additional menus will be displayed:



Setup Mode Overview, Part 5
(Intermec Fingerprint v7.50)

If an optional an EasyLAN 100i interface board is installed in the printer, additional menus will be displayed.



Intermec Shell Startup Program

Introduction

Intermec Shell is a startup program (also called “autoexec-file”), which is a program that automatically starts running when the printer is switched on. Intermec Shell helps the operator to choose between a number of standard or custom-made application programs and to start certain useful facilities, as listed below.

Application Programs

- Intermec LabelShop *(WYSIWYG label design program)*
- Intermec Windows Driver *(do not use)*
- Intermec Fingerprint *(for creating your own programs or to run the Intermec InterDriver)*
- Intermec Direct Protocol *(easy-to-use slave protocol)*
- LINE_AXP.PRG *(line analyzer program)*
- Other application programs in the printer’s memory.
  A prerequisite is that the program is provided with the extension “.PRG”. However, some original Intermec utility programs are excluded as long as they remain stored in "rom:":
  - ERRHAND.PRG
  - FILELIST.PRG
  - LBLSHTXT.PRG
  - MKAUTO.PRG
  - LSS-SENSOR.PRG
  - SHELLXP.PRG
  - WINXP.PRG

Other Facilities

- Setup Mode *(manual setup from printer’s keyboard)*
- Print Setup *(printing setup on label)*
- Testfeed *(formfeeds + auto-adjust of the LSS)*
- Test Label *(printing of test labels)*
- Default setup *(resetting all setup parameters to default)*
- Update PC card *(downloading data from a host to a PC card inserted in the printer, or upgrading the printer’s firmware from a PC card)*
- Reboot *(restarting the printer)*

Intermec Shell is factory-installed in the printer’s permanent memory (device "rom:"). If you insert a memory card with another startup file before you switch on the printer, or if there is a startup file stored in the printer’s permanent memory (device "c:"), this startup file will be used instead of Intermec Shell (see Chapter 4, “Startup Files”).

Starting with Intermec Shell

A few seconds after you have switched on the power to the printer and the initialization is completed, the countdown menu of the Intermec Shell program will be displayed:

```
ENTER=SHELL
5 sec.    v.4.6
```

Now you have 5 seconds to enter Intermec Shell by pressing the <**Enter**> key.

Provided you have a working two-way communication with a terminal program in a host computer, you may, as an alternative, enter the Terminal Setup by transmitting "**TTT**" or "**ttt**" to the printer. The Terminal Setup is described later in this chapter.

The lower line tells you how much time you have left. Should the time run out before you have taken any action to enter Intermec Shell, the last selected application in Intermec Shell will be opened. If you use the same application all the time, you will only need to switch on the power, once the application has been selected.

If no other application has yet been selected, the current version of Intermec Fingerprint will be opened with the standard RS-232 port "uart1:" selected as standard I/O channel (see Intermec Fingerprint manuals). When the countdown is completed, you will see these lines in the display:

```
FINGERPRINT
7.50
```

If you want to select another application, just cycle the power and enter Intermec Shell before the countdown is completed.

When you enter the Intermec Shell from the countdown menus, the Select Application menu will be displayed:

```
SHELL
SEL. APPLICATION
```

In this menu, you can choose between three options:

- Press <**Enter**> to go to menus where you can select an application program.
- Press <**F5**> to go to the Facilities part of Intermec Shell.
- Start the Terminal Setup program by transmitting "**TTT**" or "**ttt**" from the host.

Starting with Intermec Shell, cont.

In Intermec Shell, the menus present the option in infinite loops, To see all the menus and options, refer to the overview later in this chapter.

Select Application

The Select application lets you choose an application program that resides in the printer's memory:

- **Current appl.** starts the last selected application (by default Intermec Fingerprint with "uart1:" selected as standard I/O channel).
- **LabelShop** sets up the printer[1] for the various Intermec LabelShop label formatting programs for Microsoft Windows. This option requires that you also select a standard IN/OUT channel, which is the channel you want to use for communication between the printer and the computer. Refer to the Intermec LabelShop manuals.
- **Windows Driver** does not work with EasyCoder F-Series printers. Use the ***Fingerprint*** option (see below) for the Intermec InterDriver.
- **Fingerprint** is used to create, modify, or run programs written in the Intermec Fingerprint programming language and to run the Intermec InterDriver. This option requires that you also select a standard IN/OUT channel, which is the channel you want to use for communication between the printer and the computer. Normally, you select "uart1:". Refer to the Intermec Fingerprint manuals.
- **Direct Protocol** is an easy-to-use printer protocol for downloading label formats and variable input data to a printer from a host computer. This option requires that you also select a standard IN/OUT channel, that is the serial channel you want to use for communication between the printer and the host. Normally, you select "uart1:". Refer to the *Intermec Direct Protocol v7.xx, Programmer's Guide.*
- **LINE-ALY.PRG** (Line Analyzer) is a Fingerprint program that captures characters received by the printer on a communication channel and prints them on labels. (See later in this chapter.)
- **Other Application Programs**
  If the printer contains any other application programs, standard or custom-made, these will presented as additional options.

[1]. When an application program is started, it may automatically change the communication setup. For example, Intermec LabelShop changes the setup to the following values:

Baud rate:	*57600*
Char. length:	*8*
Parity:	*None*
Stopbits:	*1*
RTS/CTS:	*Enable*
ENQ/ACK:	*Disable*
XON/XOFF to host:	*Disable*
XON/XOFF from host:	*Disable*
New line:	*CR/LF*
Receive buffer:	*600*
Transmit buffer:	*600*

If another application is selected later, this communication setup will remain valid, unless the new application includes instructions that automatically change the setup. The setup could also be changed manually in the Setup Mode.

Starting with Intermec Shell, cont.

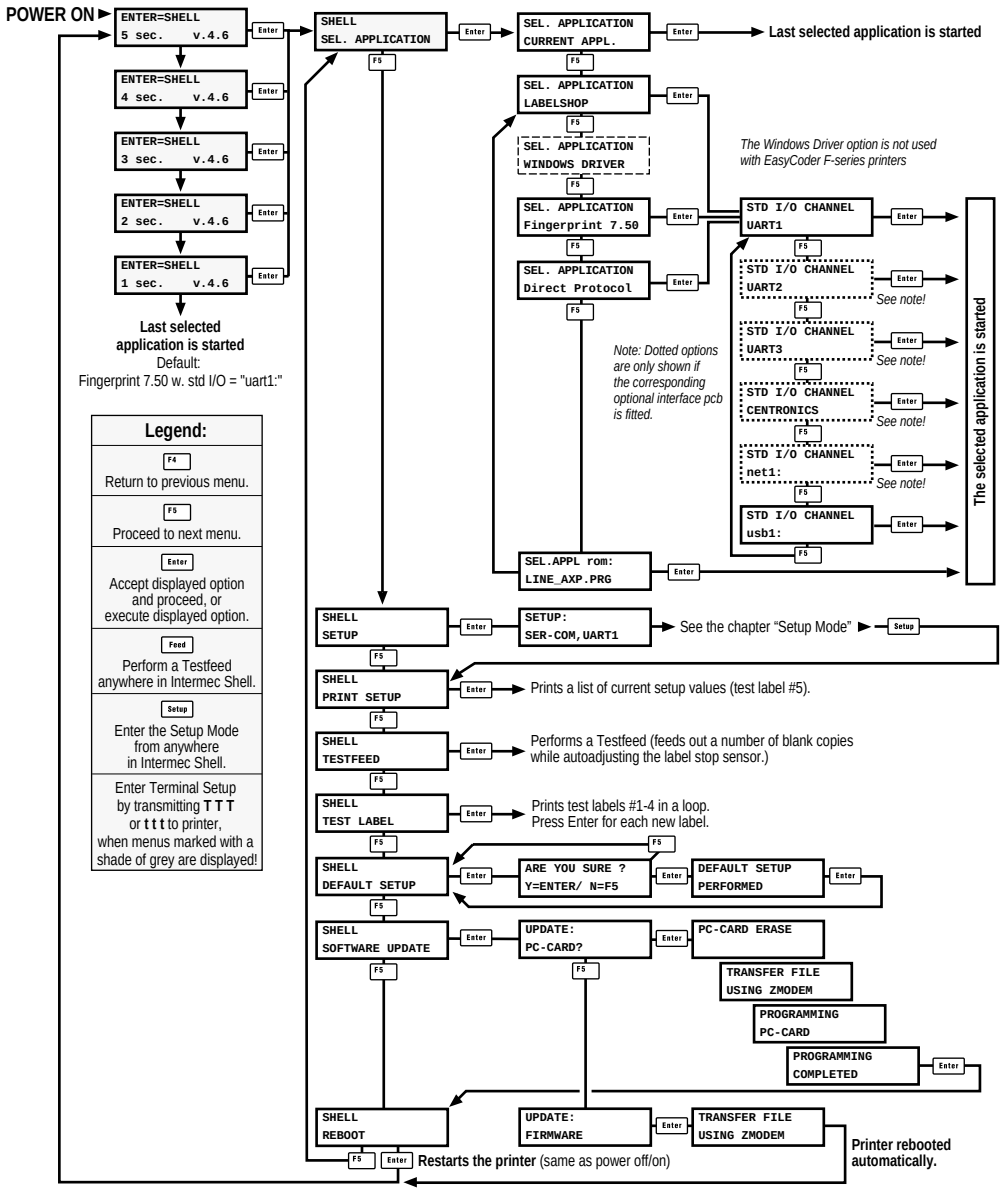
Select Other Facilities

As an alternative to selecting an application, you can step through a number of other useful facilities:

- **Setup** allows you to enter the Setup Mode where you can set up the printer by means of its built-in keyboard, see Chapter 8, "Setup Mode."
- **Print Setup** allows you to produce a printout of the printer's current setup values (test label #5).
- **Testfeed** allows you to feed out a number of labels, tickets, tags, or portions of continuous stock while the printer auto-adjusts its media feed and label stop/black mark sensor. It is recommended to perform a Testfeed each time you load a roll of labels from a new batch or of a different brand.
- **Test Label** allows you to print a series of four test labels (test labels #1 to #4) in order to test the printout quality and printhead alignment. The labels are presented in an infinite loop, so you can print the series over and over again. Press <**Enter**> for each new label.
- **Default Setup** allows you to reset all setup parameters to their default values, as listed in Chapter 7, "Setting Up the Printer."
- **Software Update** is used for two purposes:
  - ***Update PC-card*** allows the printer to be used as a Flash PC card programming device. Using the Zmodem communication tool, files can be downloaded from a PC to a Flash PC card[1] inserted in the memory card slot in the printer's rear plate.
    Warning! If the Flash PC card contains an earlier firmware version than the one in the printer, the printer's firmware will be downgraded without warning.
  - ***Update firmware*** is used to upgrade the printer's firmware from a new firmware version stored as a file in a PC.
- **Reboot** has the same effect as cycling the power to the printer. To exit Intermec Shell without having selected any application program, select Reboot. Then wait for the 5 seconds countdown to finish, and the last selected application will be opened.

[1]/. Only Flash PC cards approved by Intermec can be used.

Intermec Shell v4.6 Overview



Terminal Setup

Starting Terminal Setup

The Terminal Setup program in Intermec Shell allows the operator to control the whole Intermec Shell program remotely from a host computer and to read or change the printer's setup. There must be a working two-way (serial) communication between printer and host and the host must be running a suitable communication program (for example MS Windows HyperTerminal) that can transmit and receive data in ASCII format; that is, as printable characters. Set up the terminal as VT100.

Enter Terminal Setup by transmitting three upper- or lowercase **T** characters (**TTT** or **ttt**), while the printer either shows the Intermec Shell countdown menus or the Select Application menu.

Solving Communication Problems

If you cannot start Terminal Setup, the communication protocols of the printer and the host probably do not match, or there is some other communication error. For example, you may have a defective communication cable, the wrong port may be selected on the host, or the cable is not connected to "uart1:" on the printer[1].

You can check and change the printer's setup in the Setup Mode, which you can enter by pressing the <**Setup**> key on the printer's built-in keyboard. Proceed as described in Chapter 8, "Setup Mode." Among the facilities in Intermec Shell, you will also find a number of options that allow you to read or change the communication setup of the printer:

- **Setup**
  This is another way of entering the Setup Mode, where you can browse through the setup parameters and make changes using the printer's keyboard.
- **Print Setup**
  Here you can print the current setup on one or more labels.
- **Default Setup**
  This option allows you to reset the communication parameters for all serial communication channels on the printer to default values.

Change the communication setup of the printer according to the host or vice versa.

Once printer and host have been set up with the same communication parameters, go to the "Select Application" menu and use the triple T (**TTT** or **ttt**) to start Terminal Setup.

[1]/. By default, "uart1:" is standard IN/OUT channel and should be used for running Terminal Setup. However, other ports could be appointed standard IN and/or OUT channel using the Intermec Fingerprint statement SETSTDIO. Refer to the Intermec Fingerprint manuals for further information.

Terminal Setup, cont.

Using Terminal Setup

The Terminal Setup program uses prompts to help you navigate. You move around in this Intermec Shell program the same way as when you use the printer's front panel.

Comprehensive explanations of the various setup parameters can be found in Chapter 7, "Setting Up the Printer."

When you transmit the triple T (**TTT** or **ttt**) to the printer, the following message will appear on the printer's display:

```
SETUP FROM
TERMINAL
```

On the host screen, another message will appear:

```
------------------------------------------------
Welcome to SHELL v.4.6 in terminal mode
------------------------------------------------

Answer Y <CR> for Yes, <CR> for No.

---------------
SHELL
SEL. APPLICATION
---------------

(Y / N / B):
```

From here on, you can move around in Intermec Shell according to the diagram in the chapter "Using Intermec Shell" by answering **Y** (Yes), **N** (No), or **B** (Back) to the prompts that appear on the screen.

Note that the program also accepts lowercase characters (**y**, **n**, and **b**).

Terminal Setup, cont.

Selecting an Application

This example shows how you can select the Intermec Fingerprint application:

```
----------
SHELL
SEL. APPLICATION
----------

(Y / N / B):Y
----------
SEL. APPLICATION
CURRENT APPL.
----------

(Y / N / B):N
----------
SEL. APPLICATION
LABELSHOP
----------

(Y / N / B):N
----------
SEL. APPLICATION
WINDOWS DRIVER
----------

(Y / N / B):N
----------
SEL. APPLICATION
Fingerprint 7.50
----------

(Y / N / B):Y
----------
STD I/O CHANNEL
UART1
----------

(Y / N / B):Y
```

When you have answered the final prompt, the printer will start the selected application.

Terminal Setup, cont.

Changing the Setup

To set up the printer or use any other of the facilities, answer **N** (No) to the "Select Application" prompt. The following example illustrates how to enter the Setup Mode:

```
----------
SHELL
SEL. APPLICATION
----------

(Y / N / B):N
----------
SHELL
SETUP
----------

(Y / N / B):Y
----------
SETUP:
SER-COM,UART1
```

From here you can navigate through the Setup Mode using the keys on a VT100 terminal according to the same principles as when using the printer's own keyboard (see overviews in Chapter 8):

Key	Action
u	Move one menu to the left on the same level (same as <**F1**>).
d	Move one menu to the right on the same level (same as <**F2**>).
e	Display error message at test label printing failure (same as <**F3**>).
b	Move up one level or scroll back in a stack of menus (same as <**F4**>).
f	Move down one level or scroll forward in a stack of options (same as <**F5**>).
x	Exit the setup (same as <**Setup**>).
0 – 9	Enter numeric values.
.	Specify negative values (same as <**.**>).
Enter	Acknowledge and move to next menu, perform testfeeds, or print test labels (same as <**Enter**>).
Backspace	Delete one character to the left of the cursor (same as <**C**>).

Terminal Setup, cont.

Exiting Terminal Setup

To exit the Terminal Setup program, step through all the facility options and select Reboot, as illustrated below:

```
----------
SHELL
PRINT SETUP
----------

(Y / N / B):N
----------
SHELL
TESTFEED
----------

(Y / N / B):N
----------
SHELL
TEST LABEL
----------

(Y / N / B):N
----------
SHELL
DEFAULT SETUP
----------

(Y / N / B):N
----------
SHELL
SOFTWARE UPDATE
----------

(Y / N / B):N
----------
SHELL
REBOOT
----------

(Y / N / B):Y
```

Line Analyzer

The Line Analyzer (LINE_AXP.PRG) is a program written in the Intermec Fingerprint programming language and is intended to help solving possible communication problems. As the name implies, the Line Analyzer captures all incoming characters on a specified communication channel and prints them on one or several labels.

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

While the printer is receiving data, the "Ready" control lamp blinks. There is a 0.5 second timeout. That is, if no more character have been received after 0.5 seconds, the program considers the transmission terminated and prints out a label.

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

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

The Line Analyzer is displayed as the option "LINE_ALY.PRG" under the "SEL. APPLICATION" menu. After the Line Analyzer has been selected, the printer feeds out two labels and the following message is displayed:

```
Line Analyzer
Sel.port(1-5) 1
```

Select the desired communication port using the numeric keys on the printer's keyboard:
1 = "uart1:"
2 = "uart2:"
3 = "uart3:"
4 = "centronics:"
5 = "net1:"

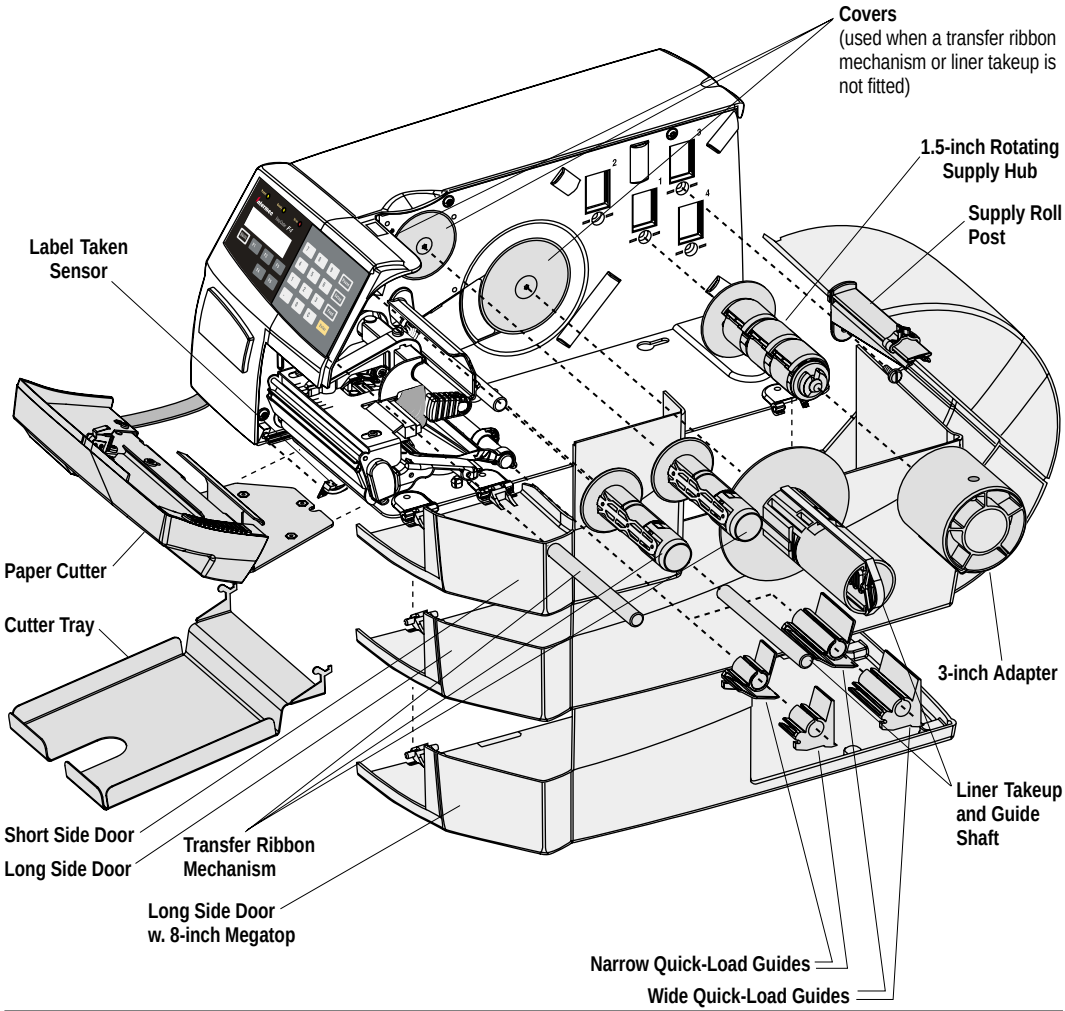
If the printer is not fitted with the specified port, an error message appears in the display and you can select another port:

```
Line Analyzer
Error:56
```

Options

Introduction

The EasyCoder F4 provides a high degree of flexibility because it has a modular design. By adding options to the basic printer, the EasyCoder F4 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.



DTP Model

In the dedicated direct thermal printing (DTP) model, the thermal transfer ribbon mechanism is omitted. The printer's default setup changes for direct thermal printing – no setup parameters for thermal transfer printing appear.

Side Doors and Megatop

The EasyCoder F4 comes with either a short side door, which only covers the print mechanism or with one of two types of long side doors, which encloses the entire media compartment. The standard long side door has a flat top and a slot for external media supply. The 8-inch Megatop version has a hinged transparent canopy that encloses a media roll with a diameter up to 213 mm (8.38 inches).The standard long side door is generally illustrated throughout this manual, but pictures of the short side door can be found in Chapter 5, "Media Load/Tear-off with Quick-Load."

Paper Cutter

The paper cutter is a factory- or field-installable option designed to cut off continous paper-based stock or liner between labels. The cut-off labels, tickets, or tags can be collected on an optional tray. The paper cutter can be controlled using the instructions CUT, CUT ON, and CUT OFF in Intermec Fingerprint and the Intermec Direct Protocol. Also see Chapter 5, "Media Load, Cut-Off."

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 3, "Installation." Being factory installed, the position of the 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 media supply hub and secured by a screw.

The 3-inch adapter is not used with a media supply roll post.

Quick-Load Guides

For Quick-Load operation (see Chapter 5, "Media Load"), a set of wide or narrow Quick-Load guides is installed at the rear of the print mechanism instead of the standard edge guide. The outer guide is adjustable for different media widths. Two sets of Quick-Load guides are included as standard in the delivery (either factory-fitted or loose). They can easily be installed by the operator:

1. Open the upper media guide. See illustration in Chapter 12, "Maintenance/Cleaning the Media Guides."
2. Pull out the standard edge guide from the shaft.
3. Install the appropriate set of Quick-Load guides onto the shaft as illustrated on the first page of this chapter.

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 can be enabled or disabled using the instructions LTS& ON and LTS& OFF respectively in Intermec Fingerprint and the Intermec Direct Protocol. It cannot be used in connection with a paper cutter.

EasySet Bar Code Wand

The EasySet bar code wand is primarily intended to facilitate paper type setup, but it can also be used to change all other setup parameters. This is done by scanning a pre-printed Code 128 bar code created according to a special standard. (FNC3 in the bar code input data specifies a setup parameter.) The bar code wand can also be used to read other Code 128 bar codes as input data to an Intermec Fingerprint program.

A selection of setup bar codes is provided in Appendix 4. For further information on how to create setup bar codes, see the *Intermec Fingerprint v7.xx, Reference Manual*.

The bar code wand is connected to the topmost connector on the printer's rear plate, immediately to the right of the on/off switch.

Real Time Clock

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

Interface Boards

A number of different interface boards are available for use with the EasyCoder F4. The interface boards are either factory-fitted or can easily be fitted by an authorized service technician.

The EasyCoder F4 can accommodate one interface board.

The interface boards for the EasyCoder F4 are:

- Parallel Interface Board (IEEE 1284)
- Double Serial Interface Board
- Industrial Interface Board
- EasyLAN 100i Interface Board (Ethernet)

Refer to Appendix 3, “Interfaces” for more information on interface boards.

Troubleshooting

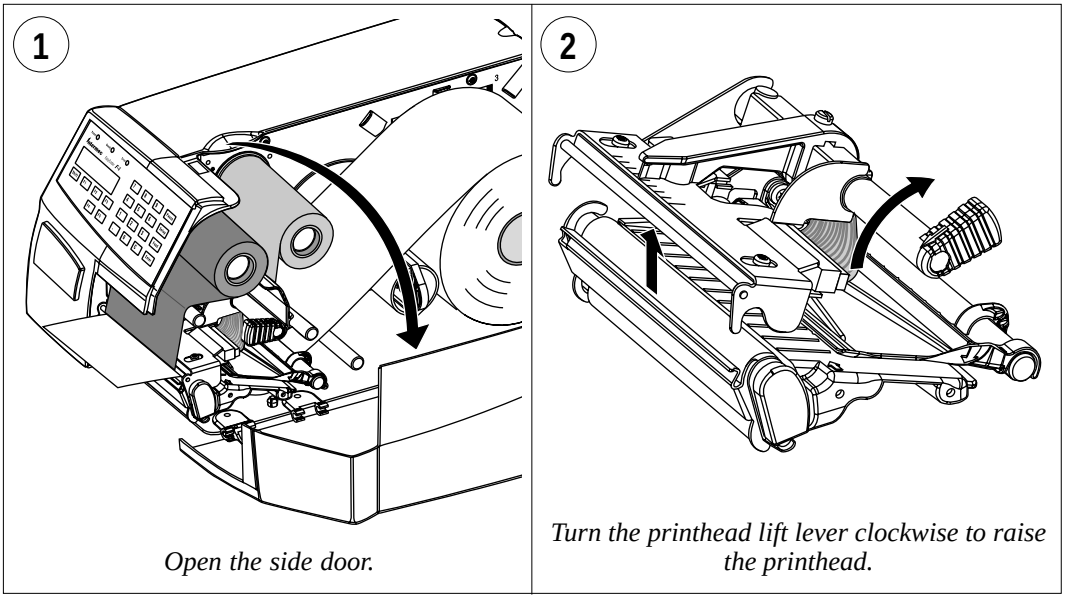
Symptom	Possible Cause	Remedy	Refer to
Overall weak printout	Wrong Paper Type parameter Contrast value too low Printhead pressure too low Worn printhead Wrong printhead voltage	Change parameter Change parameter Adjust Replace printhead Replace CPU board	Chapter 7 Chapter 7 Chapter 13 Chapter 12 ✎ Call Service
Printout weaker on one side	Uneven printhead pressure	Adjust arm alignment	Chapter 13
Weak spots	Foreign particles on media Media/ribbon don't match Poor media or ribbon quality Worn printhead Worn platen roller	Clean or replace Change to matching media Use Intermec media/ribbon Replace printhead Check/replace	Chapters 5 & 6 Chapter 7 Appendix 2 Chapter 12 ✎ Call Service
Overall dark printout	Wrong Paper Type parameter Contrast value too high Printhead pressure too high Wrong printhead voltage	Change parameter Change parameter Adjust Replace CPU board	Chapter 7 Chapter 7 Chapter 13 ✎ Call Service
Excessive bleeding	Wrong Paper Type Contrast value too high Printhead pressure too high Faulty energy control	Change parameter Change parameter Adjust Replace CPU board	Chapter 7 Chapter 7 Chapter 13 ✎ Call Service
Dark lines along media path	Foreign objects on printhead	Clean printhead	Chapter 12
White lines along media path	Printhead dirty Missing dots on printhead	Clean printhead Replace printhead	Chapter 12 Chapter 12
Large part of dot line missing	Wrong X-start or Width parameter Failing printhead Failing strobe signal	Change parameter Replace printhead Check CPU-board	Chapter 7 Chapter 12 ✎ Call Service
Printout missing along inner edge	Bad media alignment Small core & supply post in upper pos. X-start parameter value too low	Adjust Move post to lower pos. Increase	Chapter 5 Chapter 3 Chapter 7
Transfer ribbon breaks	Ribbon not fitted correctly Wrong paper type parameter (too much energy) Bad energy control	Reload ribbon Change parameter, then clean printhead Adjust	Chapter 6 Chapter 7 Chapter 13 ✎ Call Service
Transfer ribbon wrinkles	Faulty ribbon break shaft adjustment Incorrect edge guide adjustment Too strong printhead pressure	Adjust Adjust Adjust	Chapter 13 Chapter 5 Chapter 13
No thermal transfer printout	Ink-coated side does not face media	Reload ribbon	Chapter 6
Media feed not working properly	Changed media characteristics Wrong start- and stop adjust values Wrong Media Type parameter Wrong sensor position Dirty or blocked sensors Faulty sensors	Perform a TESTFEED Check/change Check/change Check/change Clean media guides Replace	Chapter 5 Chapter 7 Chapter 7 Chapter 13 Chapter 12 ✎ Call Service
Compressed text or bar code	Too high print speed for large media roll	Lower print speed	Chapter 7

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 ribbon and media. This section describes how to clean the printhead using cleaning cards. If additional cleaning is required, for example removing adhesive residue from the platen roller or tear bar, use a cotton swab moistened with isopropyl alcohol.

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

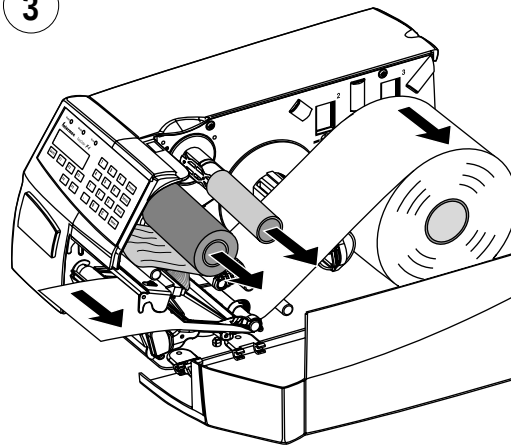


Open the side door.

Turn the printhead lift lever clockwise to raise the printhead.

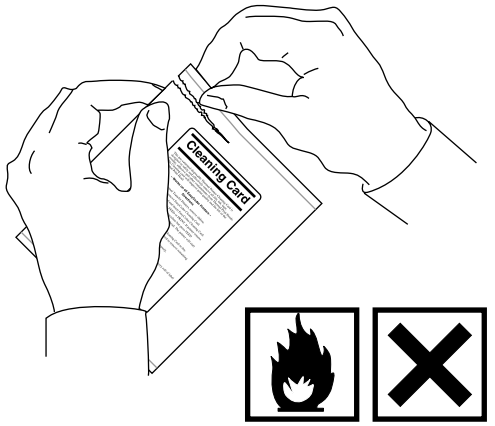
Printhead Cleaning, cont.

3



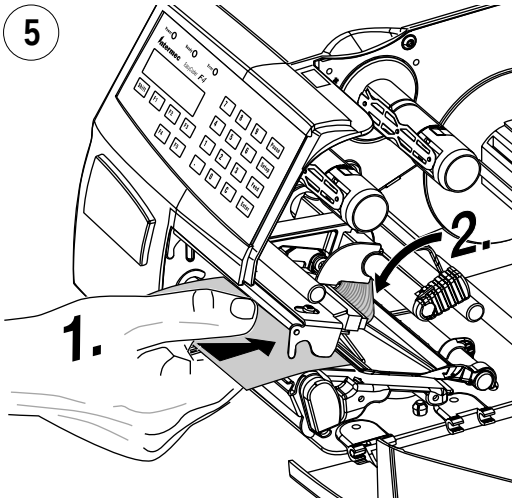
Remove any media and transfer ribbon.

4



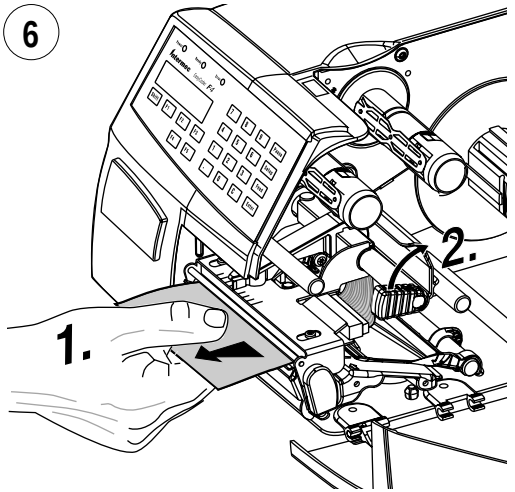
Open the cleaning card envelope and pull out the cleaning card. Read the warning text.

5



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

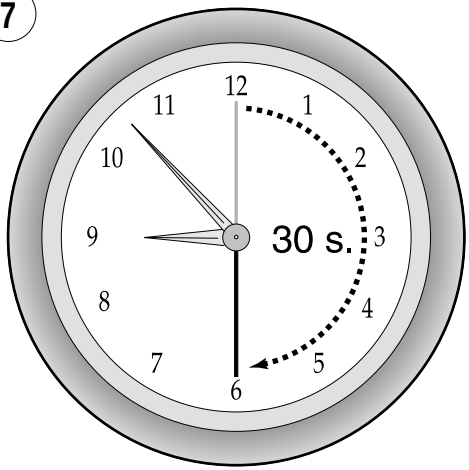
6



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

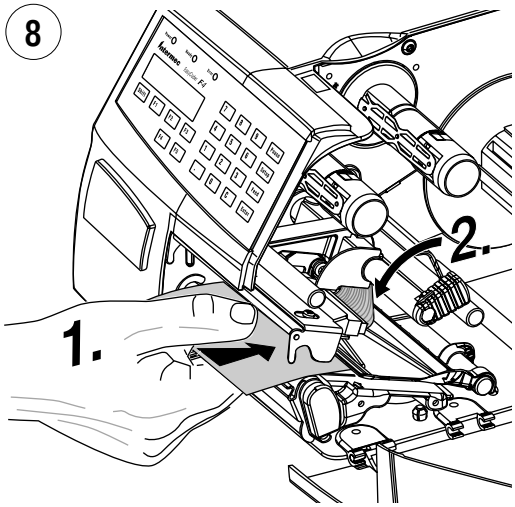
Printhead Cleaning, cont.

7



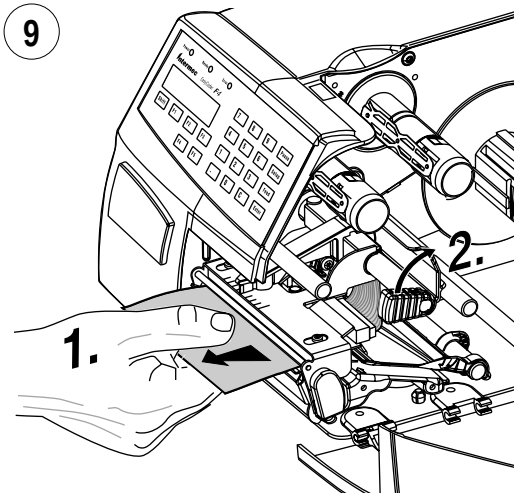
Wait for approx. 30 seconds to allow the cleaning fluid to dissolve the residue.

8



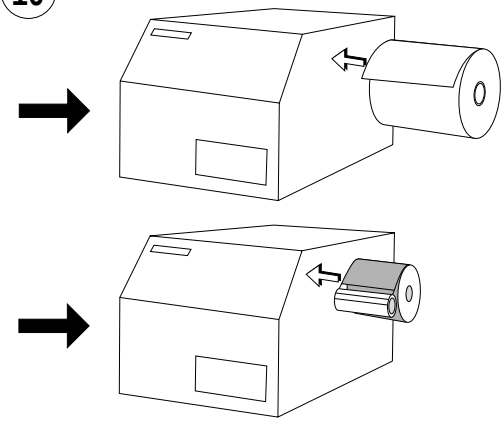
Insert most of the cleaning card under the printhead (1). Engage the printhead (2).

9



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

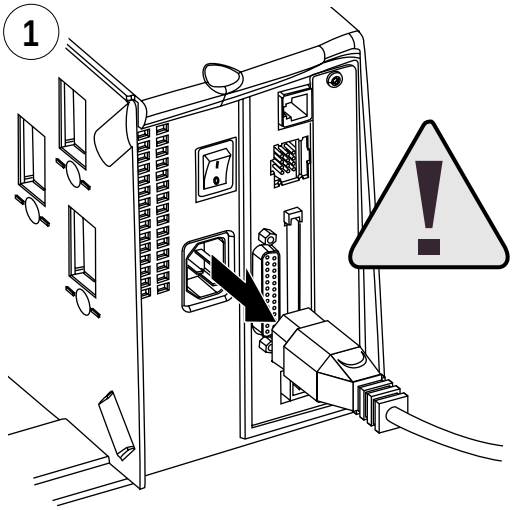
10



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

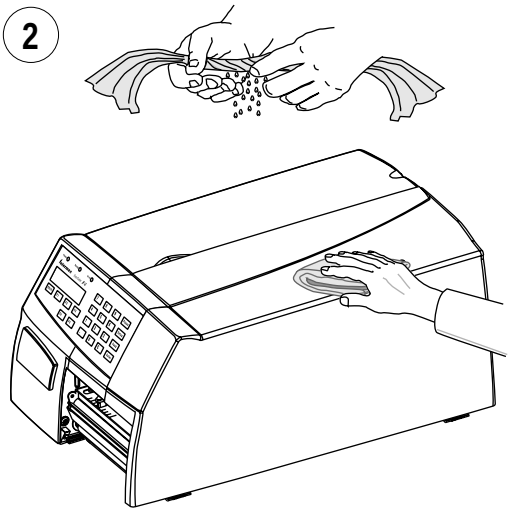
External Cleaning

1



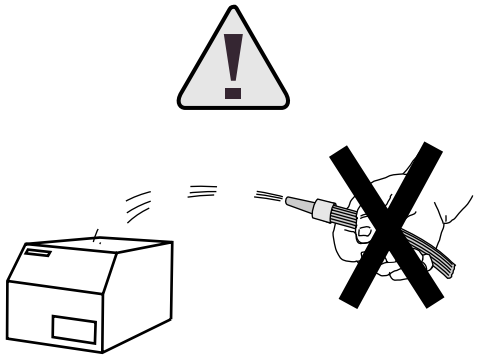
Always remove the power cord before cleaning!

2



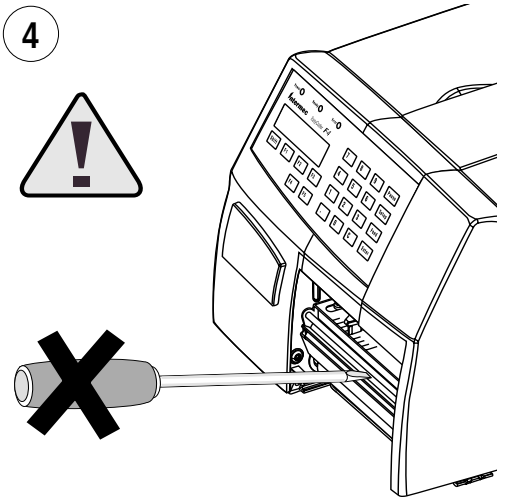
Wipe external surfaces with a soft cloth slightly moistened with water or a mild detergent.

3



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

4



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

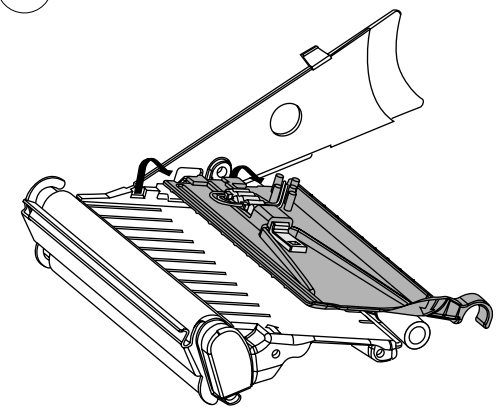
Cleaning the Media Guides

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

If the printer starts to feed out 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 chemicals. Be careful not to scratch the guides.

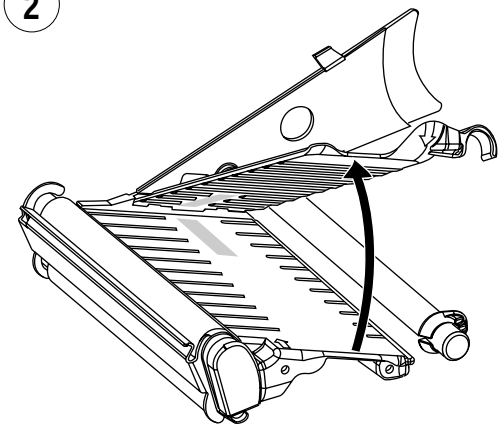
Warning!
Isopropyl alcohol [$(CH_3)_2CHOH$; CAS 67-63-0] is a highly flammable, moderately toxic, and mildly irritating substance.

1



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

2



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

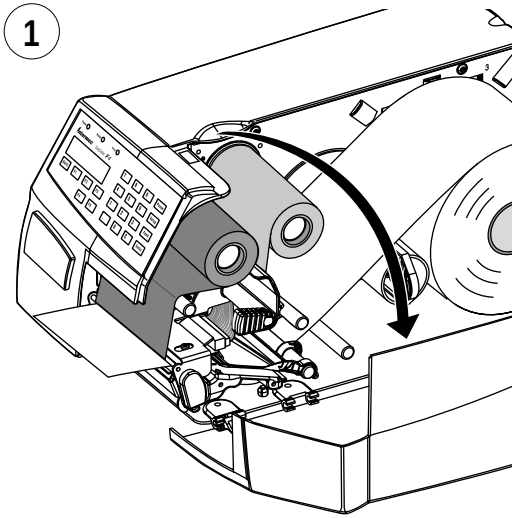
Printhead Replacement

The printhead is subject to wear both from the thermal transfer ribbon or the direct thermal media 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 thermal transfer ribbon in use, the amount of energy to the printhead, the print speed, the ambient temperature, and several other factors.

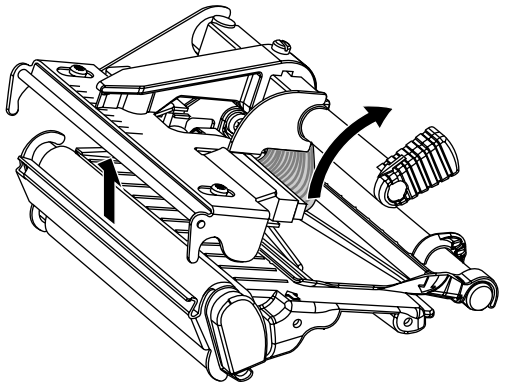
Caution!
While replacing the printhead, the power should be off.

1



Open the side door.

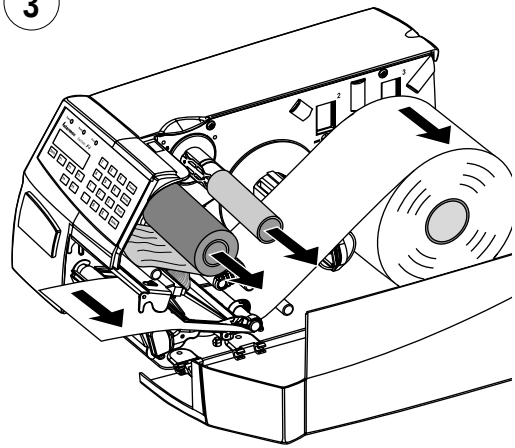
2



Turn the printhead lift lever clockwise to raise the printhead.

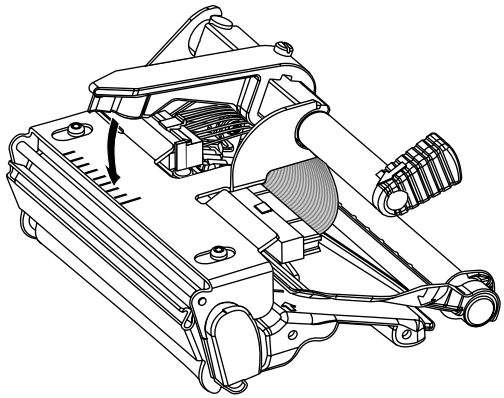
Printhead Replacement, cont.

3



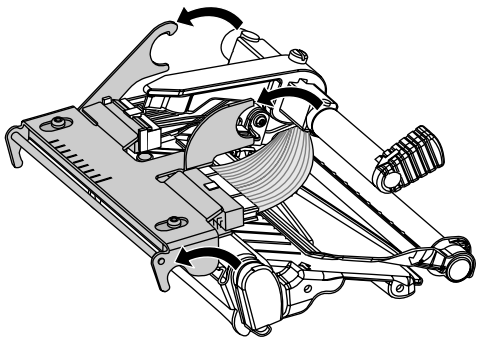
Remove any media and transfer ribbon.

4



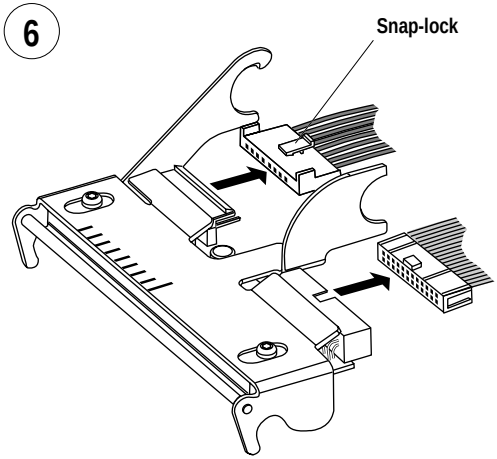
Pull the printhead bracket away from the magnet in the pressure arm.

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.

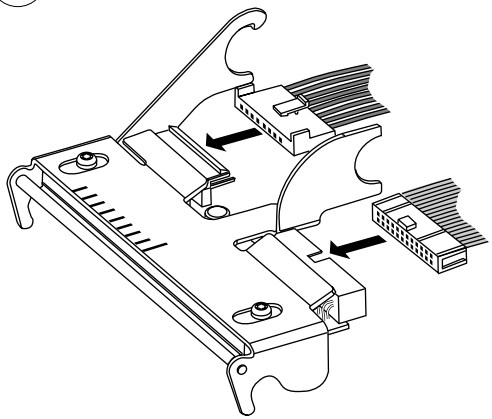
6



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

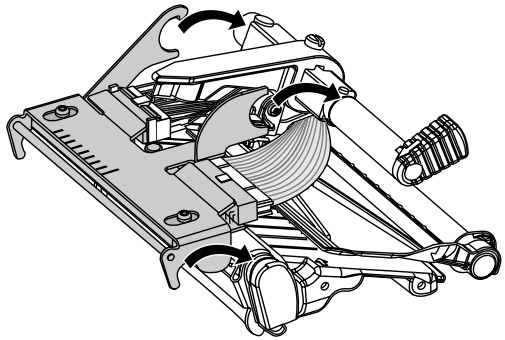
Printhead Replacement, cont.

7



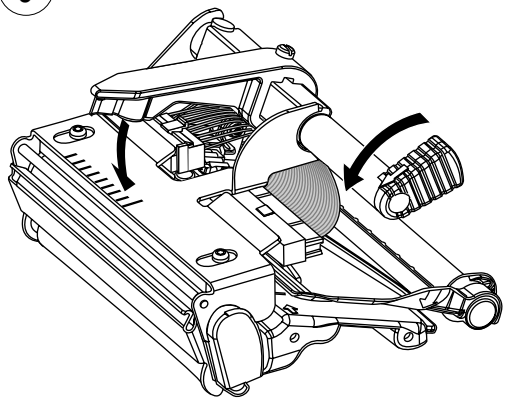
Connect the two cables to the replacement printhead.

8



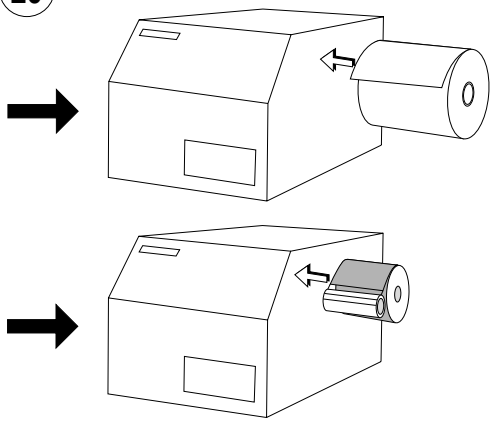
Put back the printhead in reverse order and check that the printhead cables run freely.

9



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

10



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

Adjustments

Narrow Media Adjustment

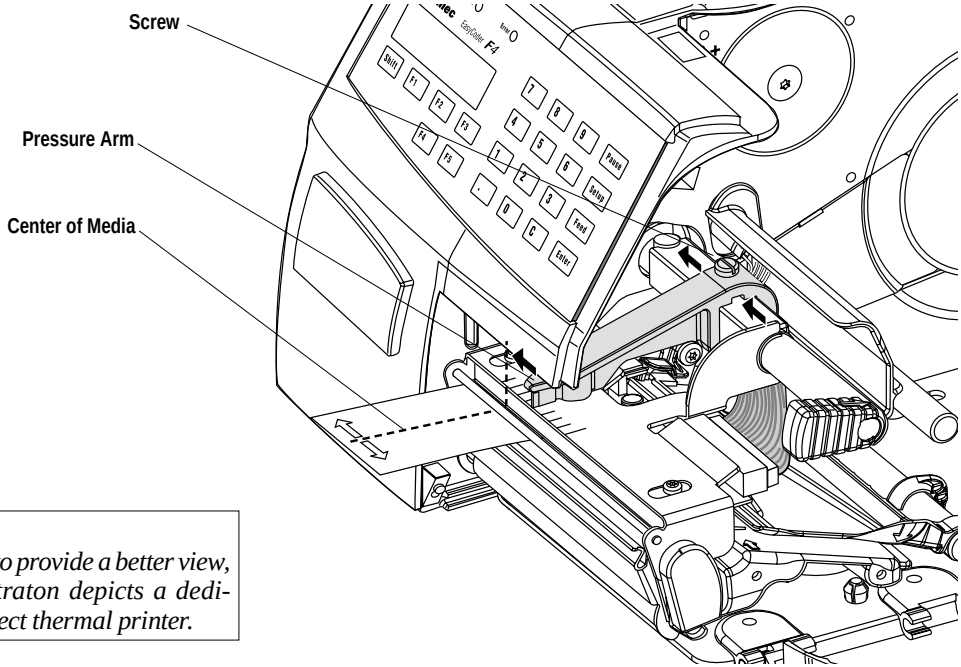
Note!
See Chapter 7, "Setting Up the Printer/Print Speed."

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.



Note!
In order to provide a better view, the illustraton depicts a dedicated direct thermal printer.

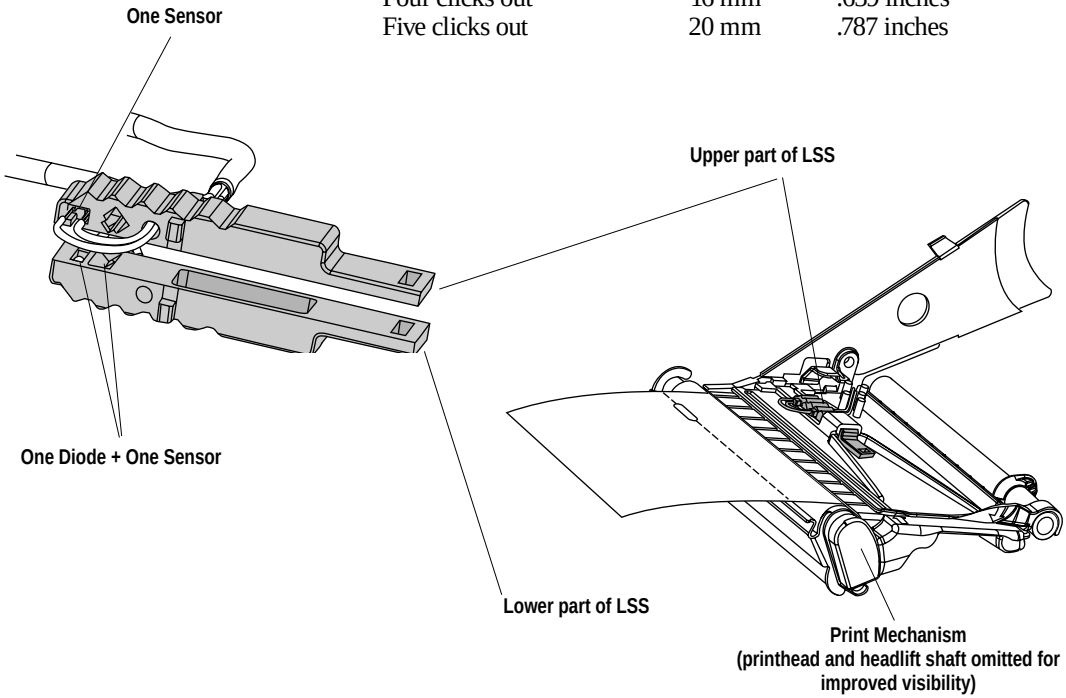
Label Stop Sensor Position

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 7, "Setting Up the Printer.") An obvious prerequisite is that the LSS must be aligned with the gaps, slots, or black marks. If using irregularly-shaped labels, align the LSS with the front tips of the labels.

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

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

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



Printhead Pressure

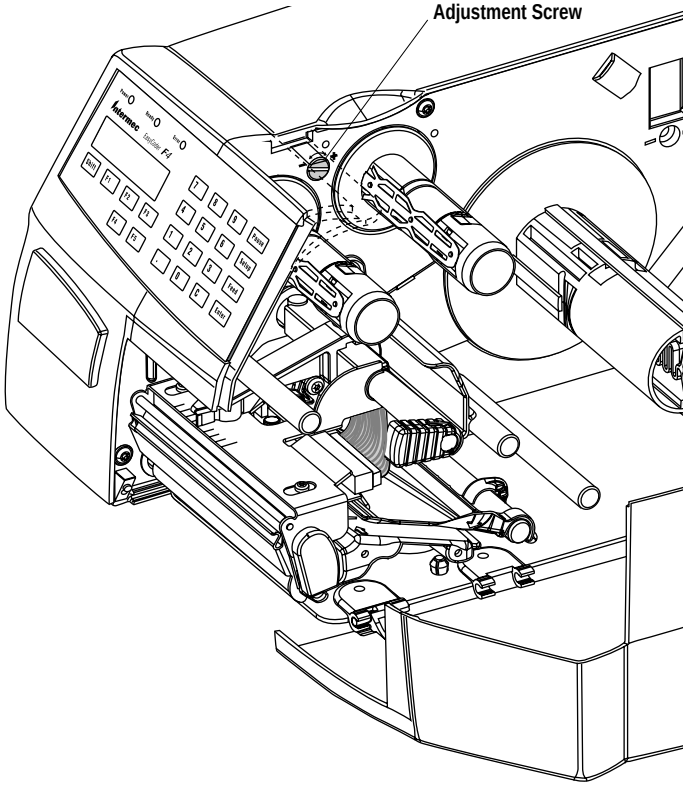
The pressure of the thermal printhead against the ribbon or media is factory-adjusted. However, the use of thicker or thinner media than normal could require the printhead pressure to be readjusted.

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 7, "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.

Caution!

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



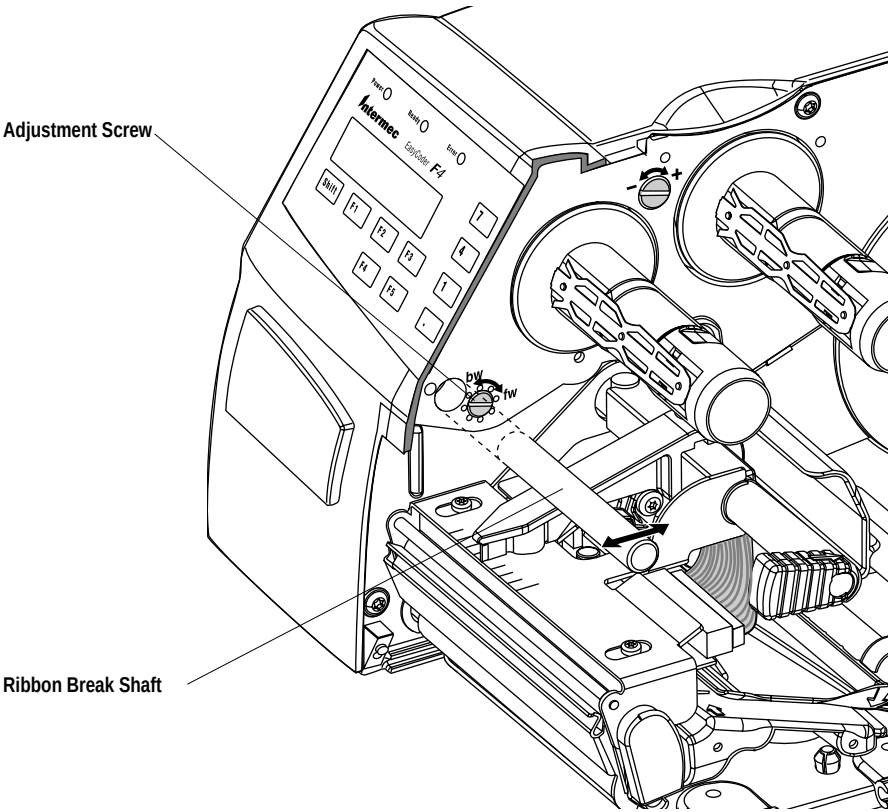
Ribbon Break Shaft

If ribbon wrinkling is occurring, 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.

Important!

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



Technical Data

Printing		
Print Technique	Thermal Transfer and/or Direct Thermal	
Printhead Resolution	8 dots/mm (203.2 dpi)	
Print Speed (variable)	100 to 200 mm/sec. (≈ 4 to 8 inches/sec.)	
Print Width (max)	104 mm (4.095 inches)	= 832 dots
Print Length (max)	32767 dots = 409.5 cm(161.25 inches)[1]	
Media Width (min/max)	25 to 114.3 mm (1 to 4.5 inches)	Standard edge guide
Media Width (min/max)	40/80 to 114.3 mm (1.57/3.15 to 4.5 inches)	Quick-Load guides
Media Roll Diameter (max)	213 mm (8.38 inches)	
Media Roll Core Diameter	38 to 40 mm (1.5 inches) or 76 mm (3 inches)	
Ribbon Width (min/max)	25 to 110 mm (1 to 4.33 inches)	
Ribbon Roll Diameter (outer)	62 mm (2.44 inches)	≈ 200 m (655 ft) ribbon
Ribbon Roll Core Diameter (inner)	25.4 mm (1.00 inches)	
Print Directions	4	
Modes of Operation		
Tear-Off (Straight-through)	Yes	
Cut-Off	Optional	With paper cutter
Peel-Off (Self-strip)	Optional	With liner takeup unit
Firmware		
Operating System	Intermec Fingerprint v7.50	Incl. Direct Protocol
Smooth Fonts	TrueDoc and TrueType fonts	
Built-in scalable fonts (std)	15	Unicode fonts[2]
Built-in bar code symbologies (std)	38	
Startup Program (std)	Intermec Shell v4.6	
Physical Measures		
Dimensions (W x L x H)	244 x 397 x 178 mm (9.61 x 15.63 x 7.00 inches)	With long side door
	253 x 447 x 178 mm (9.96 x 17.60 x 7.00 inches)	With paper cutter
	244 x 471 x 225 mm (9.61 x 18.54 x 8.86 inches)	With 8-in Megatop
Weight (excluding media)	≈ 7 to 8 kg (≈ 15.5 to 17.7 pounds)	Depending on model
Ambient Operating Temperature	+5°C to +40°C (+41°F to +104°F)	
Humidity	20 to 80% non-condensing	
Electronics		
Microprocessor	32 bit RISC	
On-board Flash SIMMs	2 sockets for 2 or 4MB each	Std. 1 x 2MB
On-board DRAM SIMM	1	Std. 4MB
Real-Time Clock	Option	10+ years life

Technical Data, cont.

Power Supply		
Mains Voltage	>90 to <264 VAC, 45 to 65 Hz	
PFC Regulation	IEC 61000-3-2	
Maximum Power Consumption	Continuous 140W; Peek 300W	
Sensors		
Label Gap/Black Mark/Out of Media	Yes	5 fixed positions
Printhead Lifted	Yes	
Ribbon End/Ribbon Low	Yes	
Controls		
Control Lamps	3	
Display	2 x 16 character LCD with background light	
Keyboard	22 keys membrane-switch type	
Print button	1	
Beeper	Yes	
Data Interfaces		
Serial	1 x RS-232 + 1 x USB	
Bar Code Wand	1	For setup
Electronic Keys	2	Future option
Connection for Optional Interface Boards	1	
Memory Card Adapter	1	Flash or SRAM cards
Accessories and Options		
Paper Cutter and Tray	Option	For cut-off operation
Integral Self-strip Unit with Liner Takeup	Option	For peel-off operation
Rotating Media Supply Hub	Option	Replaces supply post
3-inch Adapter for Media Supply Hub	Option	
Short Side Door	Option[3]	
Long Side Door	Option[3]	
Long Side Door with 8-inch Megatop	Option[3]	
Label Taken Sensor	Option	
Real Time Clock	Option	10+ years life
RS-232 Cable	Option	
EasySet Bar Code Wand	Option	For quick setup
Parallel Interface Board	Option	IEEE 1284
Double Serial Interface Board	Option	
Industrial Interface Board	Option	
EasyLAN 100i Interface Board	Option	Ethernet
External Alphanumeric Keyboard	Option	

Technical Data, cont.

Accessories and Options, cont.		
Flash Memory Cards	Option	≤ 64Mbit (8MB)
Electronic Keys	Option	
[1]/. The max. print length is also restricted by the amount of free DRAM memory.		
[2]/. Latin, Greek, and Cyrillic fonts according to Unicode standard are included.		
[3]/. Type of door fitted at delivery depends on model.		

Media Specifications

Direct Thermal Media

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

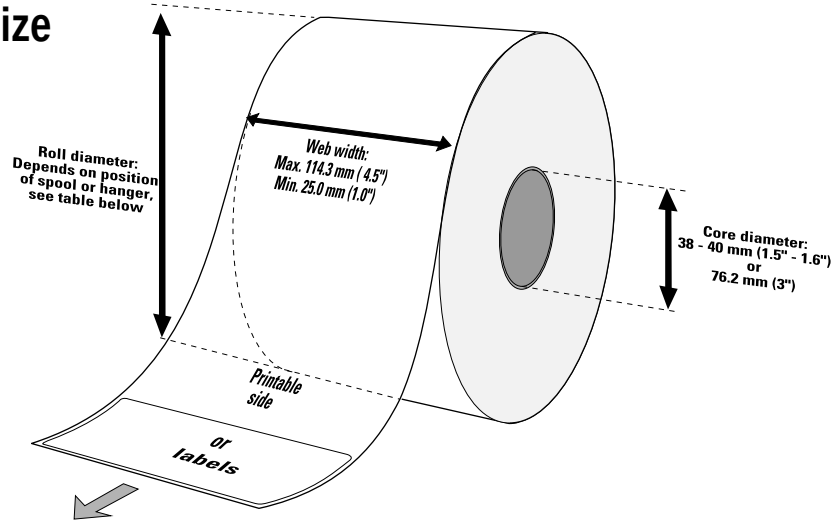
- ***Premium Quality***: Top-coated media with high demands on printout quality and resistance against moisture, plasticisers, and vegetable oils. Examples:
  - Thermal Top Board
  - Thermal Top
  - Thermal Top High Speed
  - Duratherm II,
  - Duratherm II Tag
  - Duratherm Ltg.
  - Duratherm IR
- ***Economy Quality***: Non top-coated media with less resistance to moisture, plasticisers, and vegetable oils. In all other respects, it is equal to *Premium Quality*. Examples:
  - Thermal Eco
  - Thermal Eco Board

Thermal Transfer Media

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

- ***Uncoated papers*** for economical high-volume printing to be used with GP/Basewax/Standard ribbons. Examples:
  - TTR Uncoated
- ***Coated papers*** with various coat-weight, smoothness, and gloss to be used with HP/Premium and GP/Basewax/Standard ribbons. Examples:
  - TTR Matte Coated
  - TTR Premium
  - TTR Premium Board
  - TTR High Gloss White Premium
  - Duratran VG
  - Duratran II
  - Duratran II Tag
- ***Polyethylene plastics*** with better resistance to water and many common chemicals than uncoated and coated papers. They can be use outdoors and offer good tear resistance. Most often used with HP/Premium ribbons. Examples:
  - TTR Polyethylene
  - TTR Gloss Polyethylene
  - Kimdura Tag
  - Kimdura Tag
  - Syntran
- ***Polyesters*** give high resistance to chemicals, heat, and mechanical abrasion with HR/Super Premium ribbons. Examples:
  - TTR High Polyester Gloss
  - Polyester

Media Roll Size



Core

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

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

Roll

Max. diameter:		
- Position 1	152 mm	(6.00 inches)
- Position 2	213 mm	(8.38 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):	40/80 mm	(1.57/3.15 inches)
Max. media thickness:	175 µm	(0.007 inches)

The maximum recommended media thickness is 175µm. Thicker media may be used, but print quality will be reduced. The stiffness is also important and must be balanced against thickness to maintain print quality.

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

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

Media

Non-Adhesive Strip

⇐ a ⇒ Media Width:

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

Media Type Setup:

- Fix length strip
- Var length strip

Media, cont.

Self-Adhesive Strip

⇐ **a** ⇒ **Media Width** (including liner):

Maximum:	114.3 mm	(4.50 inches)
Minimum (standard):	25.0 mm	(1.00 inches)
Minimum (narrow Quick-Load):	40.0 mm	(1.57 inches)
Minimum (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):

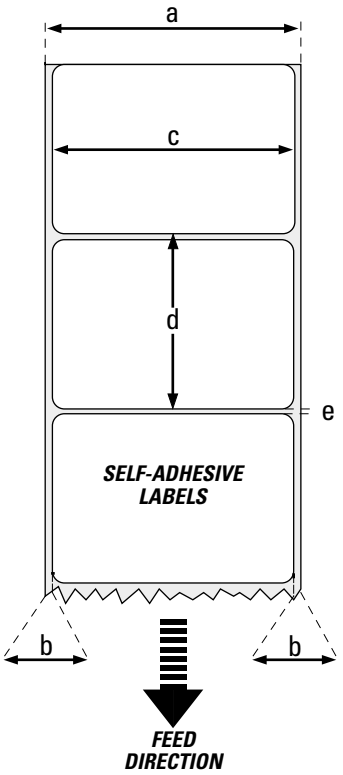
Maximum:	112.7 mm	(4.43 inches)
Minimum:	23.8 mm	(0.94 inches)

Media Type Setup:

- Fix length strip
- Var length strip

Media, cont.

Self-Adhesive Labels



⇐ **a** ⇒ **Media Width** (including liner):

Maximum:	114.3 mm	(4.50 inches)
Minimum (standard):	25.0 mm	(1.00 inches)
Minimum (narrow Quick-Load):	40.0 mm	(1.57 inches)
Minimum (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 labels and should protrude equally on both side. Recommended min. transparency: 40% (DIN 53147).

⇐ **c** ⇒ **Label Width** (excluding liner):

Maximum:	112.7 mm	(4.43 inches)
Minimum:	23.8 mm	(0.94 inches)

⇐ **d** ⇒ **Label Length:**

Maximum:	depends on DRAM 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 at the following distances from the inner edge of the media.

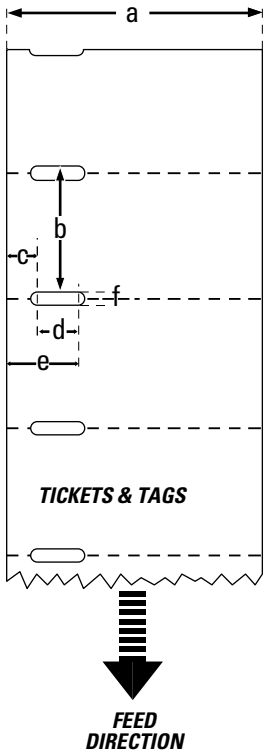
3 mm	(0.118 inches)
8 mm	(0.315 inches)
12 mm	(0.472 inches)
16 mm	(0.639 inches)
20 mm	(0.787 inches)

Media Type Setup:

• Label (w gaps)

Media, cont.

Tickets with Gap



⇐ a ⇒ Media Width:

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

⇐ b ⇒ Copy Length:

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

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

⇐ c ⇒ LSS Detection Position:
Five fixed positions (distance from inner edge of the media):

3 mm	(0.118 inches)
8 mm	(0.315 inches)
12 mm	(0.472 inches)
16 mm	(0.639 inches)
20 mm	(0.787 inches)

⇐ d ⇒ Detection Slit Length:
The length of the detection slit (excluding corner radii) must be minimum 2.5 mm (0.10 inches) on either side of the LSS detection position (e).

⇐ e ⇒ Detection Slit Height:

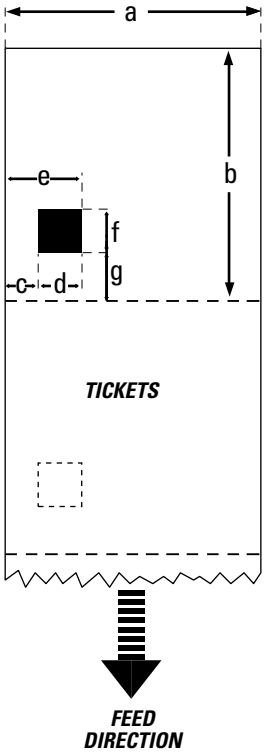
Maximum:	21.3 mm	(0.83 inches)
Recommended:	1.6 mm	(0.06 inches)
Minimum:	1.2 mm	(0.05 inches)

Media Type Setup:
• Ticket (w gaps)

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

Media, cont.

Tickets with Black Mark



⇐ a ⇒ Media Width:

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

⇐ b ⇒ Copy Length:

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

⇐ c ⇒ LSS Detection Position:
Five fixed positions (distance from inner edge of the media):

3 mm	(0.118 inches)
8 mm	(0.315 inches)
12 mm	(0.472 inches)
16 mm	(0.639 inches)
20 mm	(0.787 inches)

⇐ d ⇒ Black Mark Width:
The detectable width of the black mark should be at least 5.0 mm (0.2 inches) on either side of the 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 use a negative Stop Adjust value to control the media feed, so the tickets can be properly torn or cut off.

Media Type Setup:
• Ticket (w mark)

Important! Preprint that may interfere with the detection of the black mark should be avoided on the back of the media. However, the LBLCOND statement allows the sensor to be temporarily disabled during a specified amount of media feed in order to avoid unintentional detection, see Intermec Fingerprint manuals. 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.

Transfer Ribbons

Important!
Intermec thermal transfer ribbons are engineered specifically for the EasyCoder printheads.

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

- ***General Purpose (GP)/Standard & Basewax*** 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)/Premium*** 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)/Super Premium*** 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/Super Premium 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.

Interfaces

RS-232 Interface

The EasyCoder F4 has, as standard, two serial communication interfaces: RS-232 on "uart1:" and USB (see next page).

Protocol

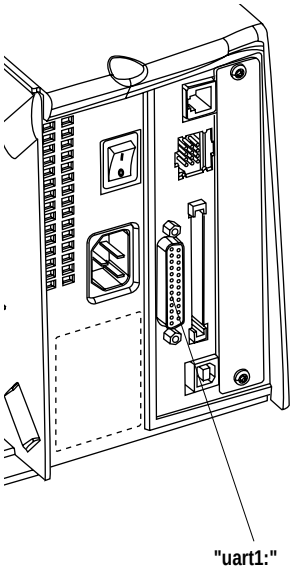
Default setup:

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 serial interface settings, see Chapter 7, “Setting Up the Printer.”

Interface Cable

Computer end: DB-9pin or DB-25pin female connector (PC)
Printer end: DB-25pin male connector

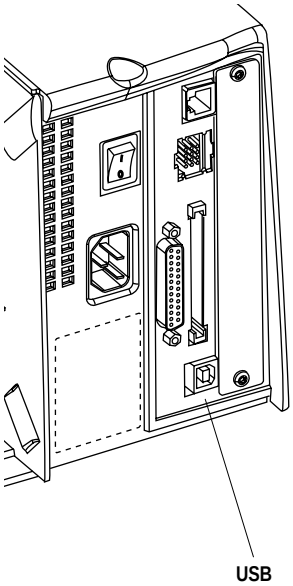


Host		EasyCoder F4			Host	
Signal	**DB-9**	**DB-25**	**Signal**	**DB-25**	**DB-25**	**Signal**
	1	1		1	1	shield
RXD	2	2	TXD	2	3	RXD
TXD	3	3	RXD	3	2	TXD
CTS	8	4	RTS	4	5	CTS
RTS	7	5	CTS	5	4	RTS
		6	DSR	6	20	DTR
GND	5	7	Signal GND	7	7	GND
		16	+ 5V[1]	16		
DSR	6	20	DTR	20	6	DSR
		22	RI	22		

[1]/. The external +5V is limited to 200 mA and is automatically switched off at overload. It is intended to drive for example an external alphanumeric keyboard connected to the RS-232 port.

USB Interface

*USB = **U**niversal **S**erial **B**us*

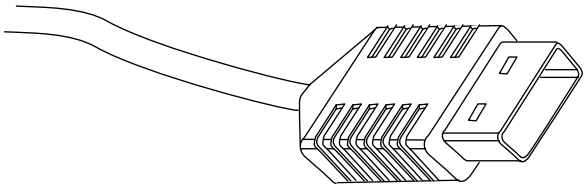


The EasyCoder F4 has, as standard, two serial communication interfaces: RS-232 on "uart1:" (see previous page) and USB. To use the USB interface for printing from a PC, you need a special Intermec USB printer driver installed in your PC.

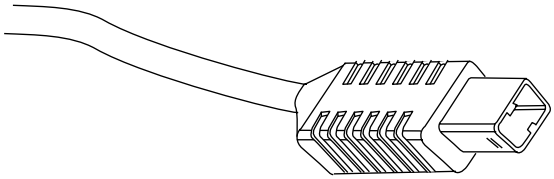
The EasyCoder F4 is a so called “self-powered device.” We recommend that you only connect one EasyCoder F4 to each USB port on the host, either directly or via a hub. Other devices, like a keyboard and a mouse, can be connected to the same hub. If you need to connect more than one Intermec USB printer to a host, you should use different USB ports.

Using a USB Class A/B cable, connect the Class A plug to your PC or hub and the Class B plug to your EasyCoder F4 printer.

The USB interface is essentially a one-way communication interface and is thus not recommended for programming. There is no communication setup for the USB port.



USB Class A connector.
Connect to PC or hub.



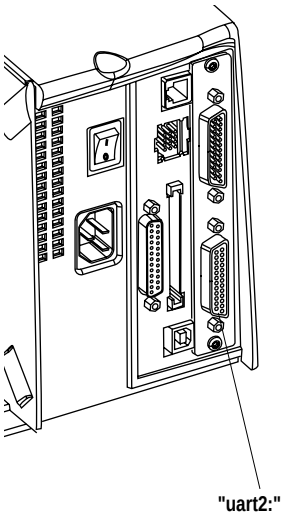
USB Class B connector.
Connect to USB receptacle on the printer’s rear plate.

Note:
The USB interface requires the Intermec Fingerprint programming language v7.50 or later.

Double Serial Interface Board

The EasyCoder F4 can optionally be fitted with a double serial interface board, which provides the printer with two more serial ports: "uart2:" and "uart3:". These ports can be configured for various types of serial communication according to the customer's request. Use the Intermec Fingerprint instruction SETSTDIO to select standard IN and OUT ports (by default "uart1:" is both standard IN and OUT port)[1].

"uart2:"	**"uart3:"**
RS-232	RS-232
RS-422 Non-isolated	RS-422 Non-isolated
RS-422 Isolated	20 mA Current Loop
RS-485	



"uart2:" Serial Port

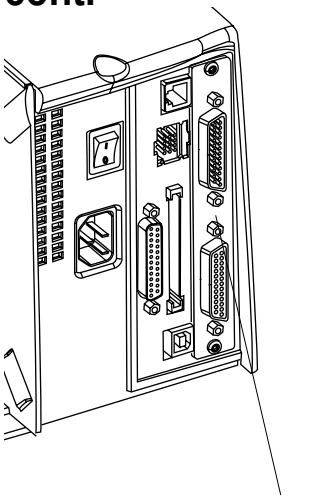
The communication port "uart2:" uses a DB-25pin female connector.

Pin	Signal Name	Description
1		Not connected
2	TxD	RS-232 Transmitter
3	RxD	RS-232 Receiver
4	RTS	RS-232 Request To Send
5	CTS	RS-232 Clear To Send
6	DSR	RS-232 Data Set Ready
7	GND	Ground
8–14		Not connected
15	+RS422I	+RS-422 Receive
16	+5V	5 Volt for external use (max. 200 mA)[1]
17	-RS422I	-RS-422 Receive
18		Not connected
19	+RS422O/+RS485	+RS-422 Transmit/+RS-485
20	DTR	RS-232 Data Terminal Ready
21	-RS422O/-RS485	-RS-422 Transmit/-RS-485
22	RI	RS-232 Ring Indicator
23	Shield	Optional shield for RS-422 and RS-485
24–25		Not connected

[1]/. The external 5V is automatically switched off at overload.

[1]/. Intermec Shell either automatically sets the correct standard IN and OUT port when an application is selected or prompts you to select one, see Chapter 9.

Double Serial Interface Board, cont.



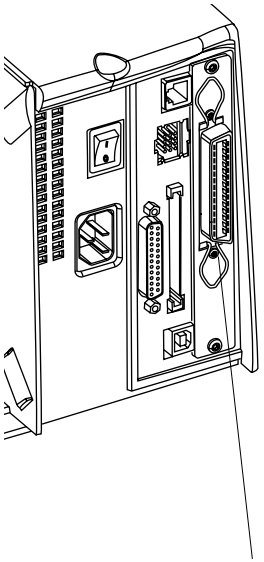
"uart3:" Serial Port

The communication port "uart3:" uses a DB-25pin male connector.

Pin	Signal Name	Description
1		Not connected
2	TxD	RS-232 Transmitter
3	RxD	RS-232 Receiver
4	RTS	RS-232 Request To Send
5	CTS	RS-232 Clear To Send
6	DSR	RS-232 Data Set Ready
7	GND	Ground
8		Not connected
9	+20M1	+20 mA current loop
10	-20M1	-20 mA current loop
11	+TXD	+TXD 20 mA current loop
12	-TXD	-TXD 20 mA current loop
13	+20M2	+20 mA current loop
		(printer active receiver)
14	-20M2	-20 mA current loop
		(printer active receiver)
15	+RS422I	+RS-422 Receive
16	+5V	5 Volt for external use (max. 200 mA)[1]
17	-RS422I	-RS-422 Receive
18	+RxD	+TXD 20 mA current loop
19	+RS422O	+RS-422 Transmit
20	DTR	RS 232 Data Terminal Ready
21	-RS422O	-RS-422 Transmit
22	RI	RS-232 Ring Indicator
23	Shield	Optional shield for RS-422
24		Not connected
25	-RxD	-TXD 20 mA current loop

[1]/. The external 5V is automatically switched off at overload.

IEEE 1284 Parallel Interface Board



The EasyCoder F4 can optionally be fitted with an IEEE 1284-I compatible parallel interface board[1]. The parallel port is addressed in Intermec Fingerprint as device "centronics:". Select "centronics:" as the standard IN port using the instruction SETSTDIO (by default, "uart1:" in standard IN port)[2].

Interface Cable Connectors

Computer end: Depends on type of host computer.
Printer end: 36-pin IEEE 1284B Centronics socket

Pin	Signal Name
1	DStrobe
2–9	Data 0–7
10	Ack
11	Busy
12	PE
13	Select
14	AF
15	Not connected
16	Ground
17	Screen
18	+5V Ext
19–30	GND
31	Init
32	Error
33-35	Not connected
36	Selectin

[1]/. Nibble, byte, ECP, and EPP from printer to host are presently not supported.

[2]/. Intermec Shell either automatically sets the correct standard IN and OUT port when an application is selected or prompts you to select one, see Chapter 9.

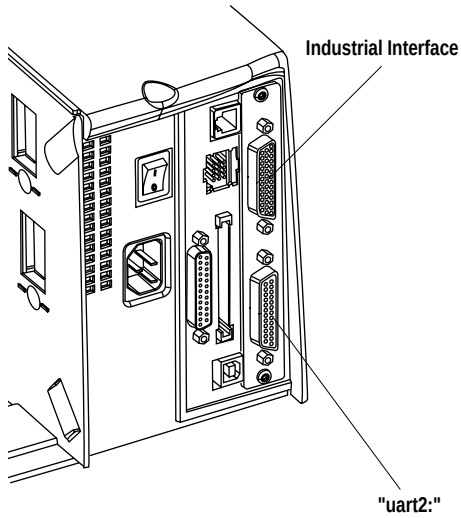
Industrial Interface Board

The EasyCoder F4 can optionally be fitted with an Industrial Interface Board, which provides the printer with one extra serial communication port ("uart2:"). This port can be configured for one of these options:
RS-232
RS-422 Non-isolated
RS-422 Isolated
RS-485

This port is identical to "uart2:" on the double serial interface board.

The Industrial Interface Board also has a DB-44pin female connector with:
8 digital IN ports with optocouplers
8 digital OUT ports with optocouplers
4 OUT ports with relays

Refer to the installation instructions for the Industrial Interface Board for further information.



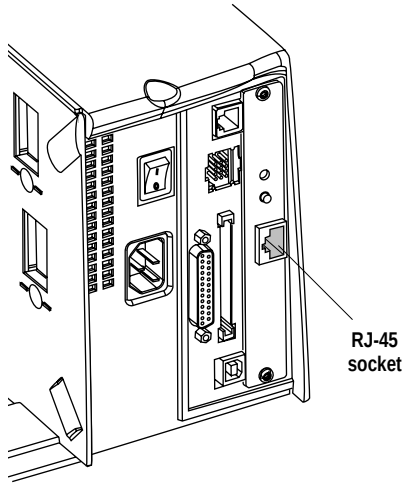
EasyLAN 100i Interface Board

The Intermec EasyLAN 100i Ethernet interface board provides the printer with a 10BaseT Ethernet or 100BaseTX Fast Ethernet network connection. You can communicate with the printer via a LAN (Local Area Network) or provide the printer with its own home page, so you can reach the printer using a Web browser.

EasyLAN 100i supports most major computer systems and environments. You can assign passwords to restrict both login and printer access. The internal EasyLAN 100i Web pages allow you to continuously monitor printer status and to upgrade the flash memory of the printer when new firmware becomes available.

EasyLAN 100i supports SNMP for remote monitoring.

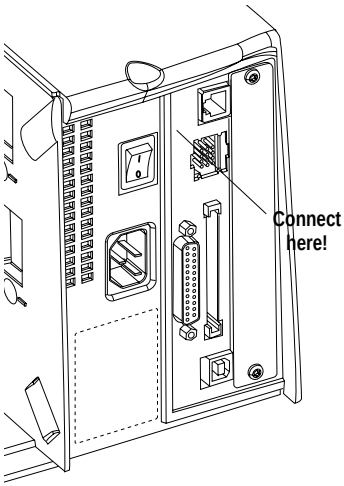
When an EasyLAN 100i interface board is installed in the printer, some extra menus will be added to the Setup Mode, see Chapter 8, “Setup Mode.” The Ethernet port is addressed as device "net1:" (communication channel 5).



EasySet Bar Code Wand Setup

Connection and Operation

1. Connect the optional EasySet bar code wand to the receptacle on the printer's rear plate.



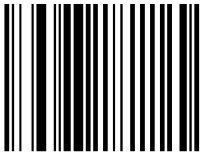
2. Read the appropriate bar code to set up the printer. Hold the wand like a pencil and move it swiftly across the bar code.

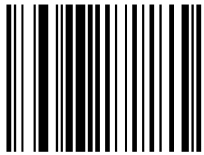
3. When the bar code has been accepted, the printer emits a short beep and the "Ready" control lamp on the printer's front blinks briefly.

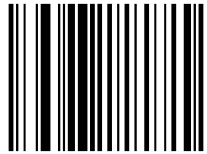
4. This manual only contains a selection of setup options. For information on how to produce your own setup bar codes, please refer to the *Intermec Fingerprint v7.xx, Reference Manual*.

Serial Communication on "uart1:"

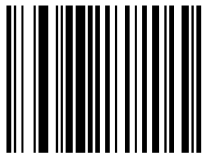
Baud Rate

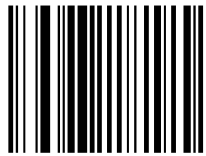

4800


9600


19200

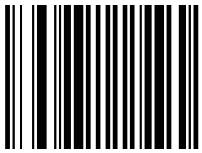

38400


57600

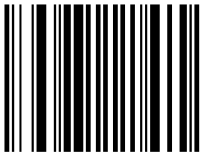

115200

Char. Length


7

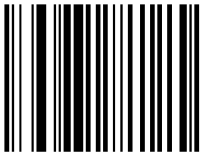

8

Parity


None


Even


Odd


Mark


Space

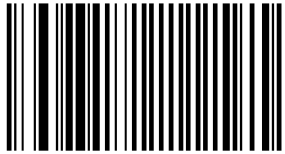
Serial Communication on "uart1:", cont.

No. of Stop Bits

1

2

Reset comm. to default



9600-8-none-1

RTS/CTS

Enable

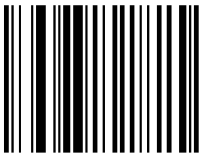
Disable

ENQ/ACK

Enable

Disable

XON/XOFF, Data to Host



Enable

Disable

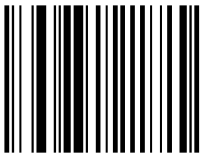
Serial Communication on "uart1:", cont.

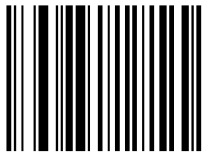
XON/XOFF, Data from Host


Enable


Disable

New Line

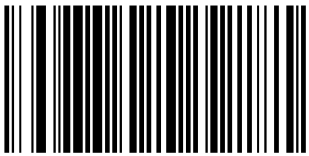

CR/LF


LF

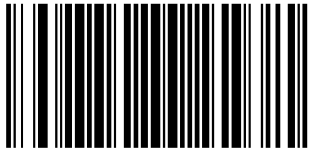

CR

Start- and Stopadjust

Tear-Off


-100/0

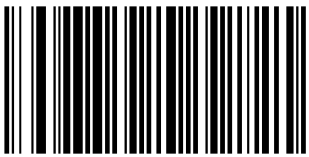
Cut-Off


-240/+160

Peel-Off


-56/-44

Default


0/0

Contrast

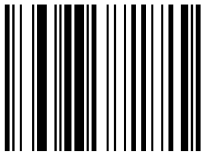

-10%


-8%


-6%


-4%

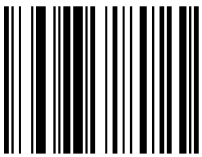

-2%

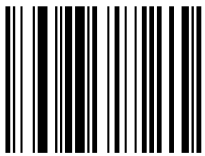

0%


+2%

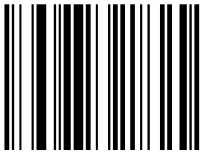

+4%

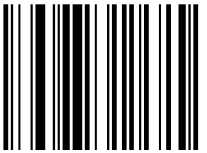

+6%

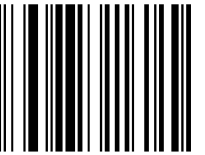

+8%

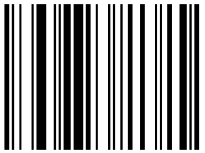

+10%

Test Labels


#1

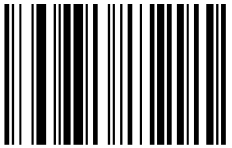

#2

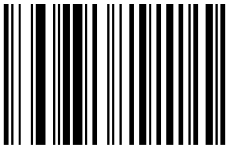

#3

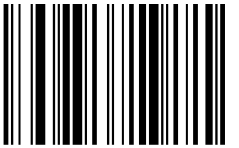

#4

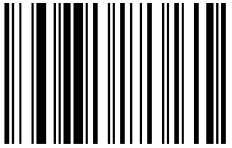

#5

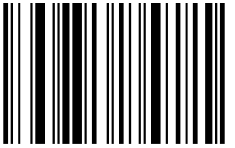
Media Width


43 mm (1.69 in)

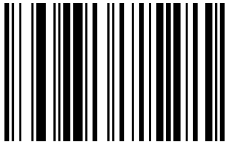

53 mm (2.09 in)

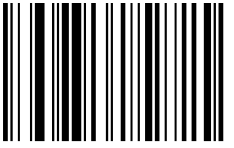

70 mm (2.76 in)


84 mm (3.31 in)


85 mm (3.35 in)

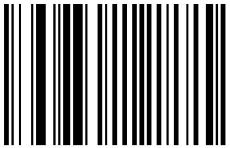

87 mm (3.43 in)

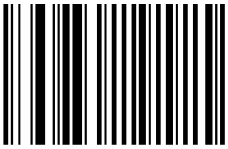

90 mm (3.54 in)

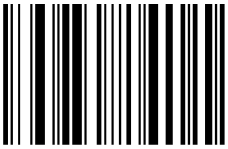

102 mm (4.02 in)

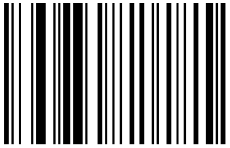

104 mm (4.10 in)

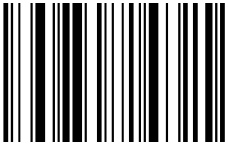
Media Length

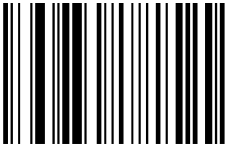

25 mm (0.98 in)

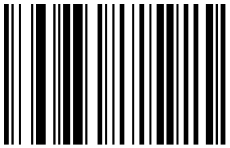

28 mm (1.10 in)

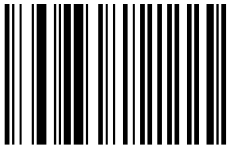

49 mm (1.93 in)

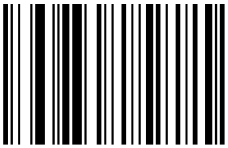

55 mm (2.17 in)

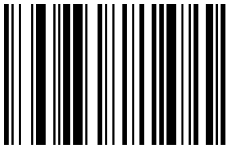

74 mm (2.91 in)

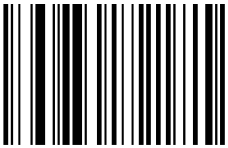

88 mm (3.47 in)

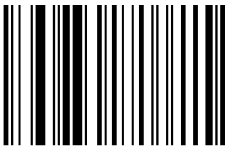

90 mm (3.54 in)


100 mm (3.94 in)


102 mm (4.02 in)

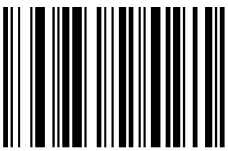

104 mm (4.10 in)


125 mm (4.92 in)


130 mm (5.12 in)


150 mm (5.91 in)

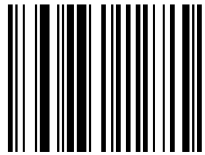

158 mm (6.22 in)


210 mm (8.27 in)

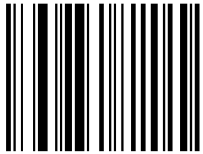
Media Type


Label (w gaps)

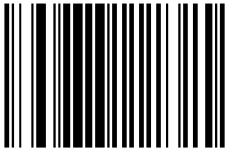

Ticket (w mark)

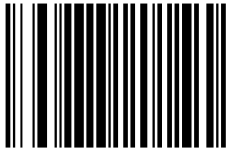

Ticket (w gaps)

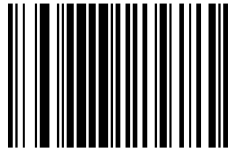

Fix Length Strip

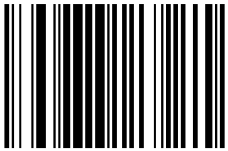

Var Length Strip

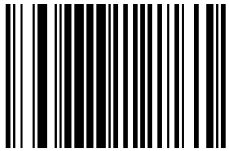
Print Speed


100 mm (3.93 in) per second


125 mm (4.92 in) per second

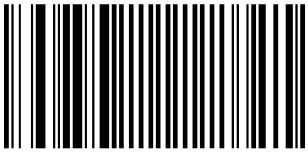

150 mm (5.91 in) per second


175 mm (6.89 in) per second

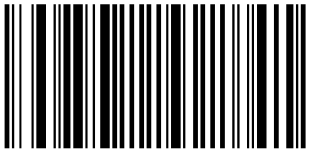

200 mm (7.87 in) per second

Paper Type

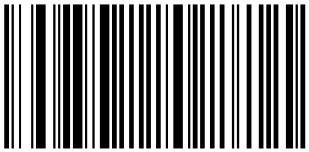
Direct Thermal Printing (Europe)



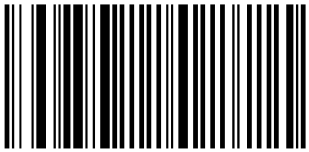
Thermal Top Board



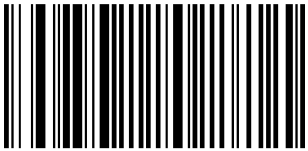
Thermal Top



Thermal Eco

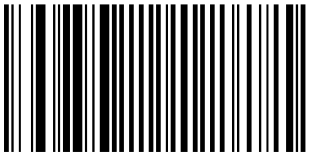


Thermal Eco Board

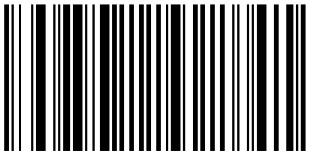


Thermal Top High Speed

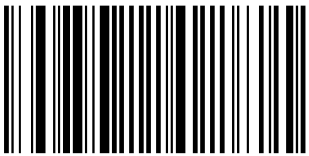
Direct Thermal Printing (USA)



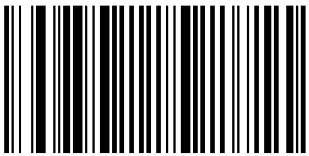
Duratherm II Tag



Duratherm II



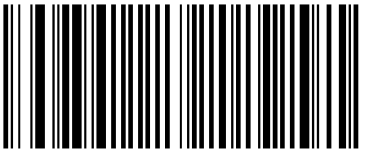
Duratherm Ltg

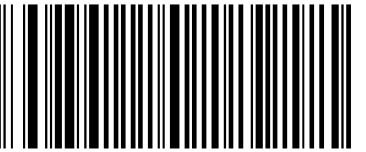


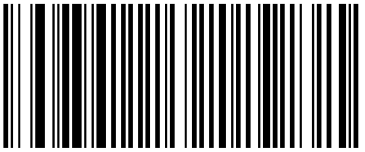
Duratherm IR

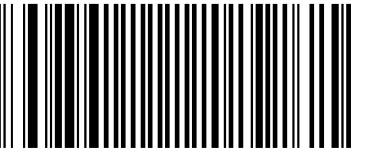
Paper Type, cont.

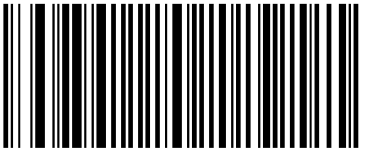
Thermal Transfer Printing (Europe)

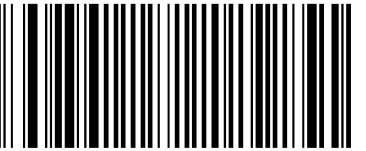

GP02/TTR Uncoated

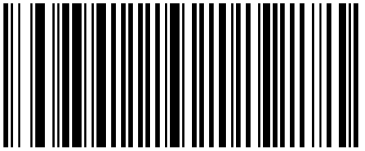

GP02/TTR Matte Coated

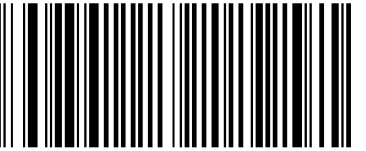

GP02/TTR Premium

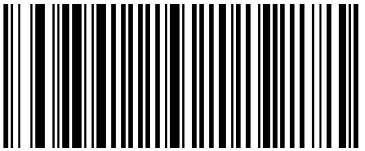

HP66/TTR Matte Coated

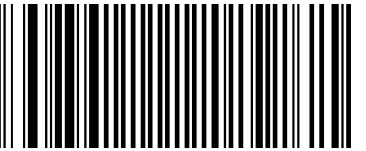

HP66/TTR Premium


HP66/TTR Premium Board


HP66/TTR High Gloss White Premium

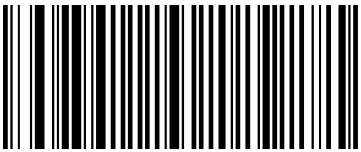

HP66/TTR Polyethylene

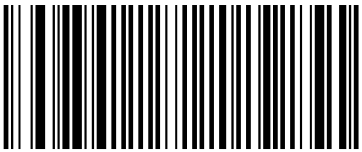

HP66/TTR Gloss Polyethylene

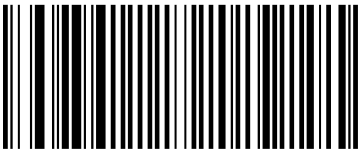

HP07/TTR Matte Coated

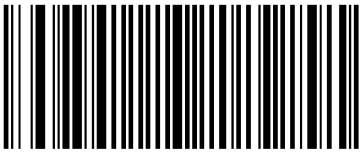
Paper Type, cont.

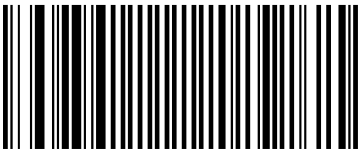
Thermal Transfer Printing (Europe), cont.

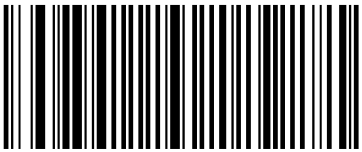

HP07/TTR Premium

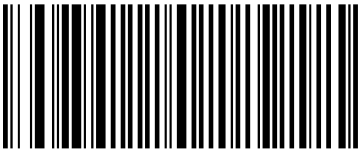

HP07/TTR Premium Board

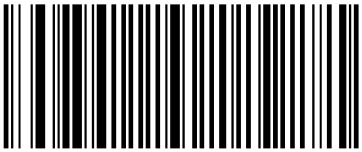

HP07/TTR High Gloss White Premium

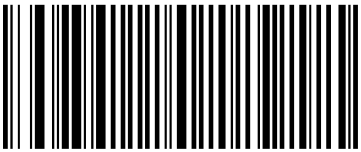

HP07/TTR Polyethylene

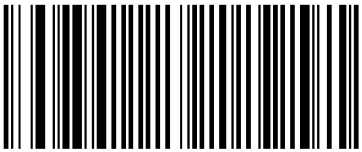

HP07/TTR Gloss Polyethylene


HP05/TTR Matte Coated


HP05/TTR PREMIUM

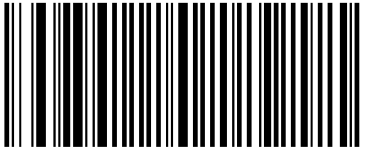

HP05/TTR Premium Board


HP05/TTR High Gloss White Premium

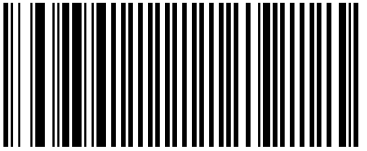

HP05/TTR Polyethylene

Paper Type, cont.

Thermal Transfer Printing (Europe), cont.



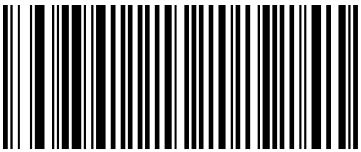
HP05/TTR Gloss Polyethylene

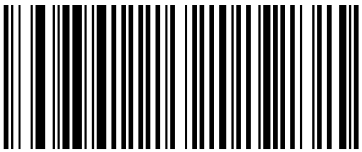


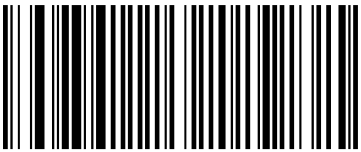
HR03/TTR High Gloss Polyester

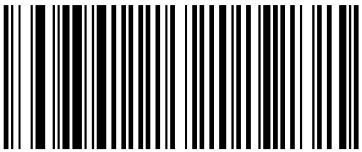
Paper Type, cont.

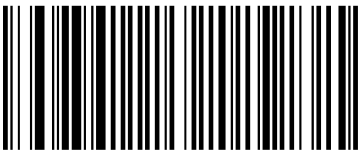
Thermal Transfer Printing (U.S.A.)

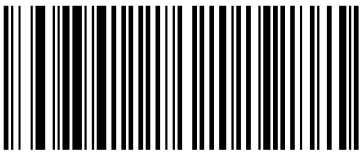

Basewax/Duratran II

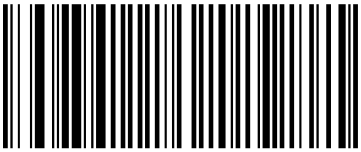

Basewax/Duratran II Tag

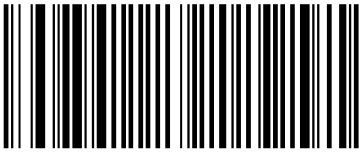

Basewax/Duratran VG

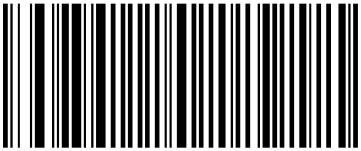

Basewax/Kimdura


Basewax/Kimdura Tag


Basewax/Syntran


Standard/Duratran II

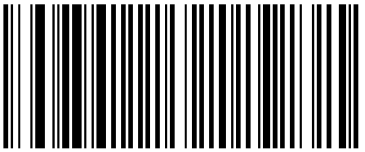

Standard/Duratran II Tag

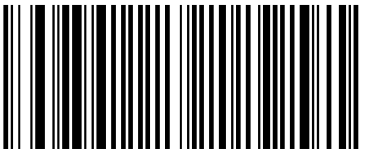

Standard/Kimdura

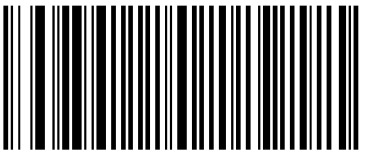

Standard/Kimdura Tag

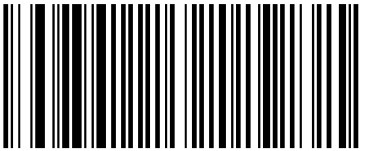
Paper Type, cont.

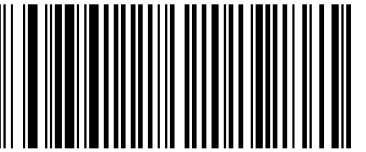
Thermal Transfer Printing (U.S.A.), cont.

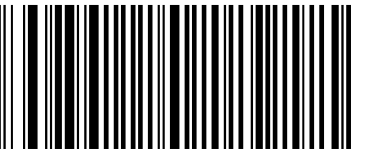

Standard/Syntran

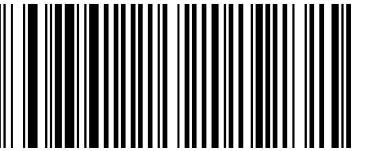

Premium/Duratran II Tag

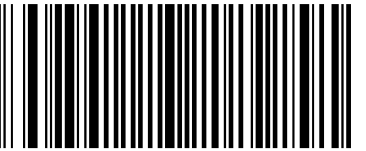

Premium/Kimdura Tag


Premium/Syntran


Premium/Duratran II


Premium/Kimdura


Premium/Matte Polyester


Super Premium/Polyester