

# Getting Started Guide

P/N 066394-002

# EasyCoder™ 4420 and 4440 Printers

 **intermec**

A **UNOVA** Company

Intermec Technologies Corporation  
6001 36th Avenue West  
P.O. Box 4280  
Everett, WA 98203-9280

U.S. technical and service support: 1.800.755.5505  
U.S. media supplies ordering information: 1.800.227.9947

Canadian technical and service support: 1.800.688.7043  
Canadian media supplies ordering information: 1.800.268.6936

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Related Manuals That You Can Order	Intermec Part Number
<i>4420 and 4440 Bar code Label Printer User's Manual</i>	066392
<i>IPL Programming Reference Manual</i>	066396
<i>Data Communications Reference Manual</i>	044737

Electrical ratings:

~100V 2A 50-60 Hz  
~120V 2A 50-60 Hz  
~200V 1A 50-60 Hz  
~230V 1A 50-60 Hz

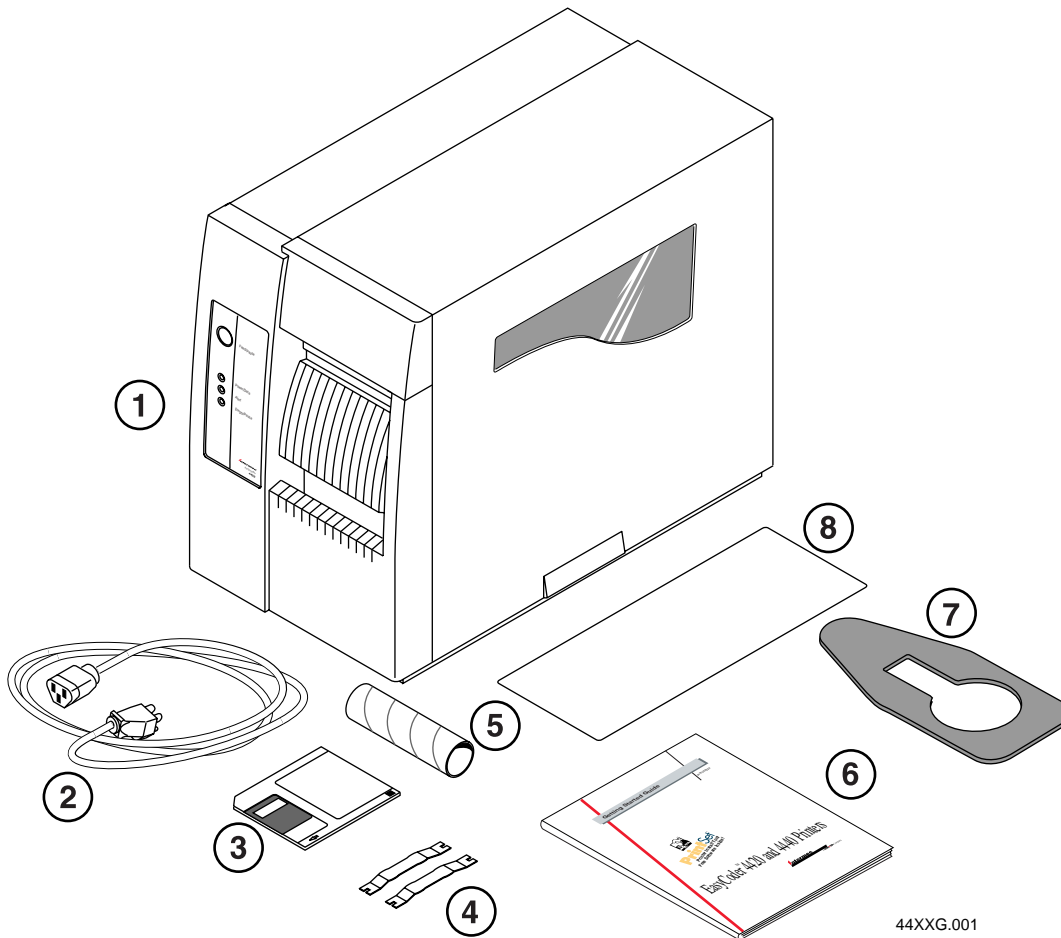
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# Unpacking the Printer

Remove the accessories, packing material, and the printer from the shipping container. Save the shipping container and packing materials in case you need to move or ship your printer.



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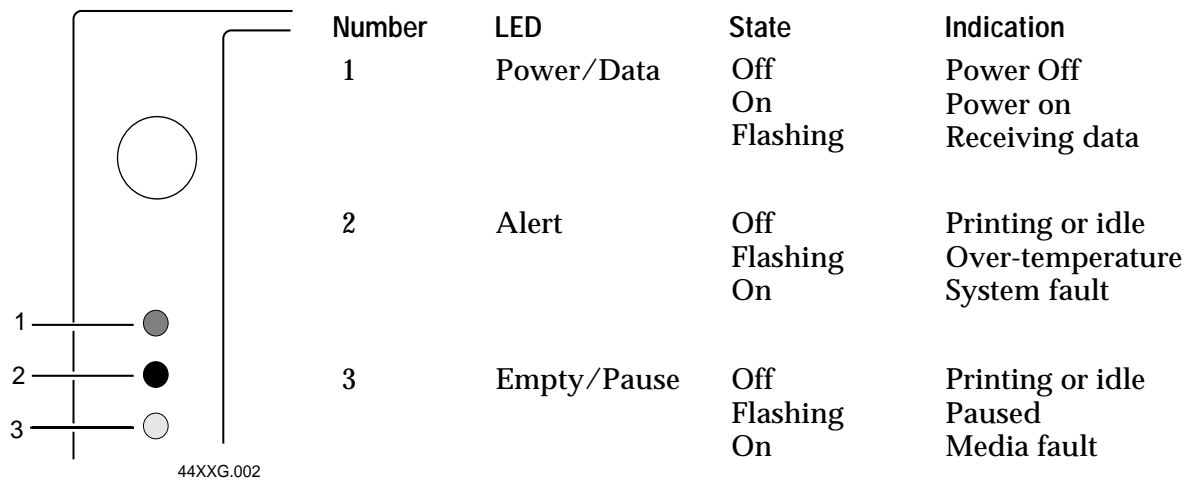
Verify the contents of the shipping container against the list below:

- 1 4420 or 4440 printer
- 2 AC power cord
- 3 PrintSet installation software disk
- 4 Core-locking brackets for plastic ribbon cores
- 5 Ribbon core
- 6 *4420 and 4440 Bar Code Label Printer Getting Started Guide*
- 7 Media support
- 8 Media envelope

**Note:** Make sure you remove all packing material from the printer before you proceed.

# Understanding the Printer Front Panel

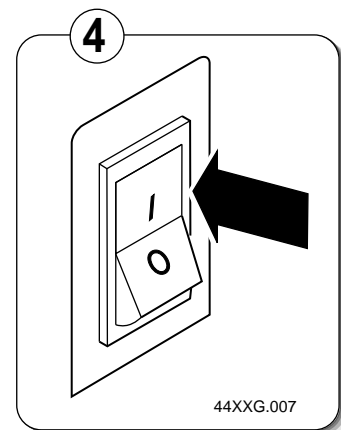
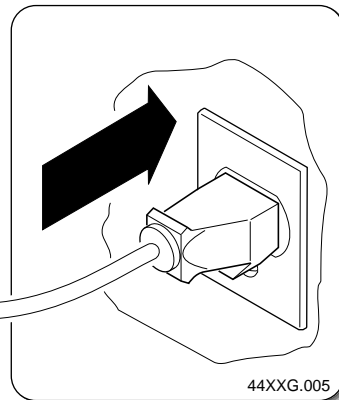
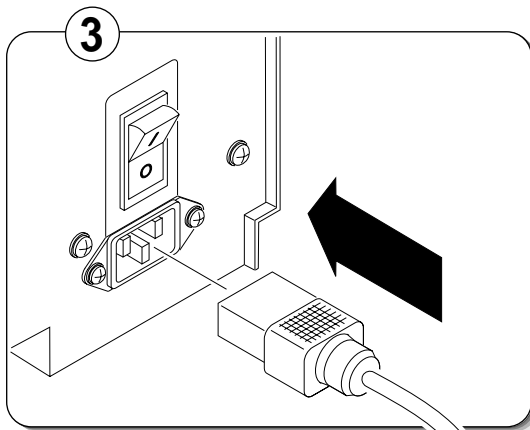
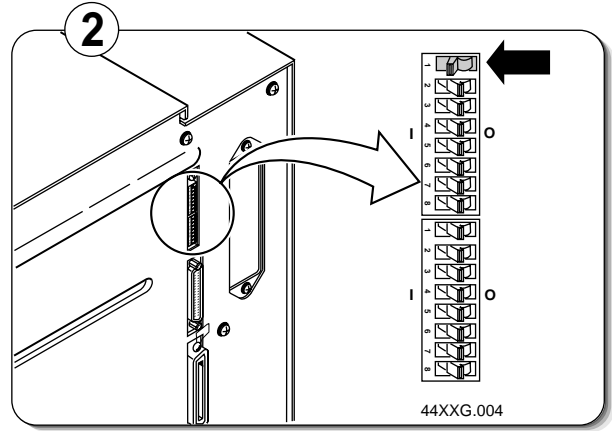
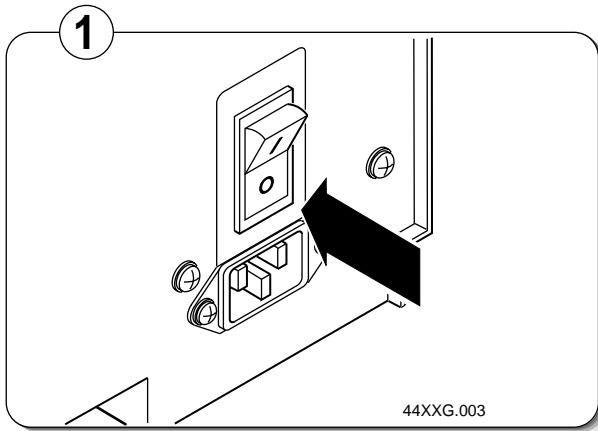
On the front panel of your printer, you will find one Feed/Pause button and three light emitting diodes (LEDs). Use the front panel LEDs to monitor the status of the printer:



The Feed/Pause button performs the following functions depending on the status of the printer:

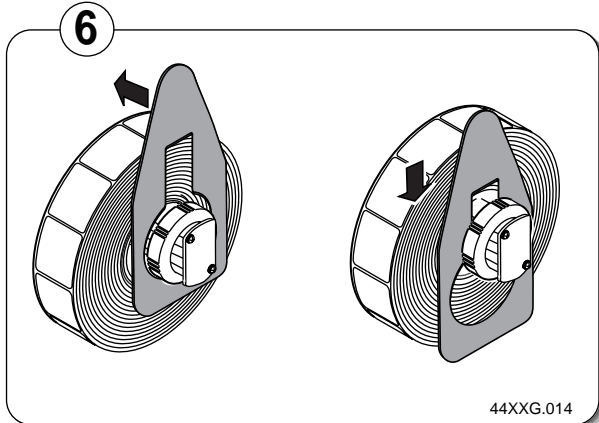
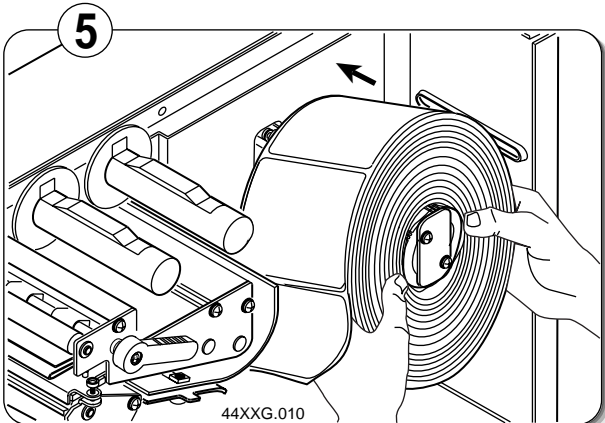
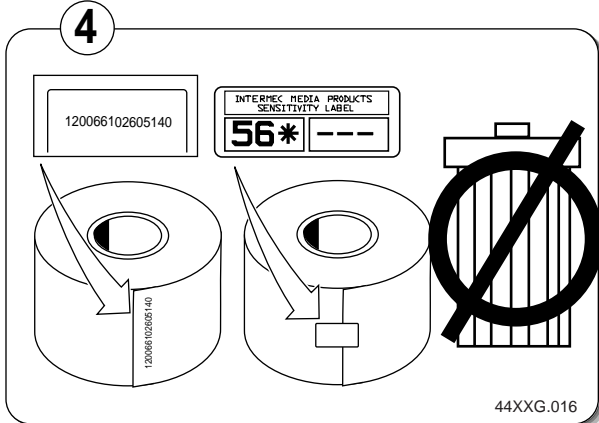
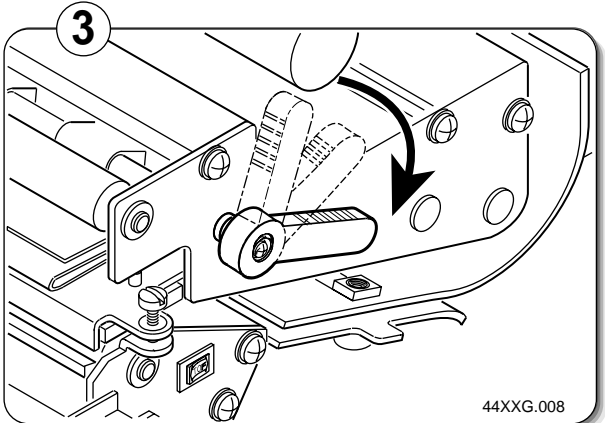
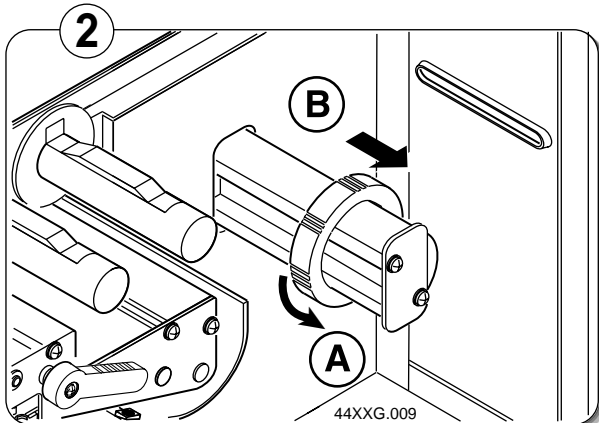
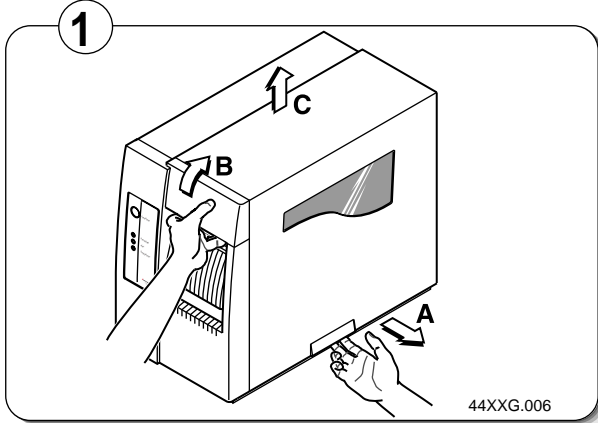
Printer Mode	You Want To	What To Do
Idle	Feed out one label or a small amount of media.	Press and release the Feed/Pause button.
	Continuously feed media.	Press and hold the Feed/Pause button. When you release the button, the media stops feeding.
	Take the printer offline.	Press the Feed/Pause button twice. Press the button again to bring the printer online.
Printing	Pause the printer.	Press and release the Feed/Pause button. Press and release the button again to resume printing.
	Cancel the current print job.	Press and hold the Feed/Pause button until the printer stops printing.
Power up	Print the hardware configuration test label.	Press and hold the Feed/Pause button during power up. See “Testing Printer Operation” later in this guide for more information

# Connecting the Printer to a Power Supply

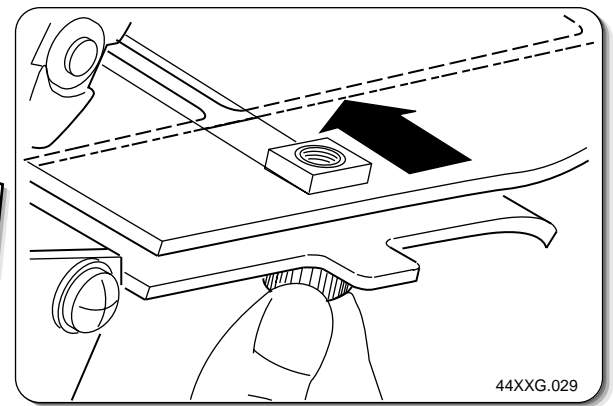
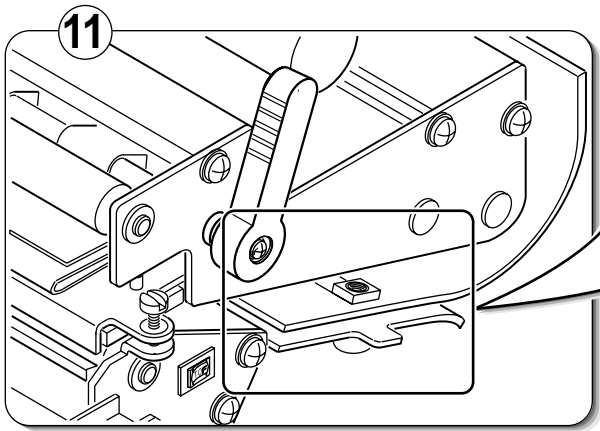
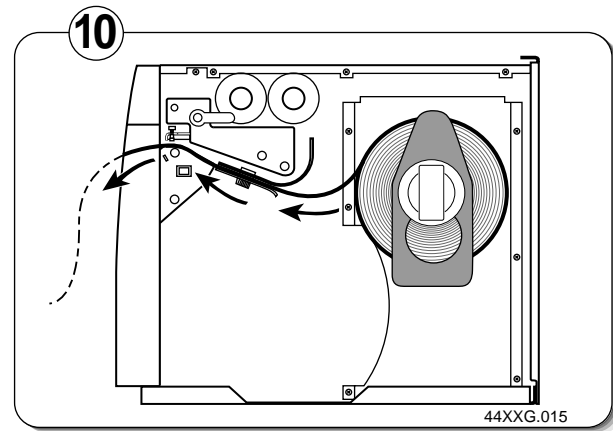
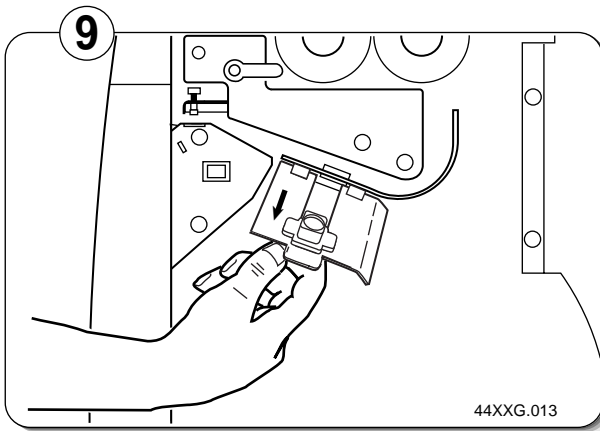
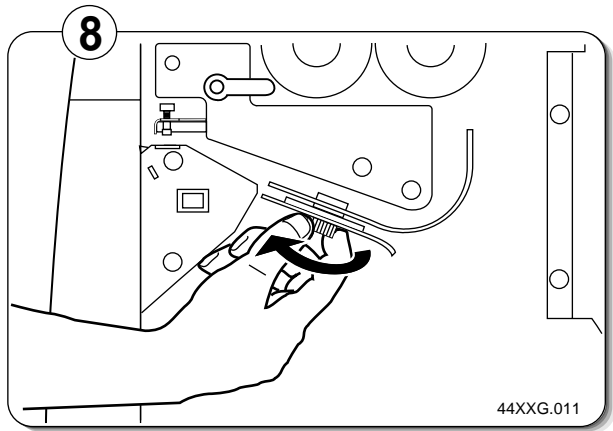
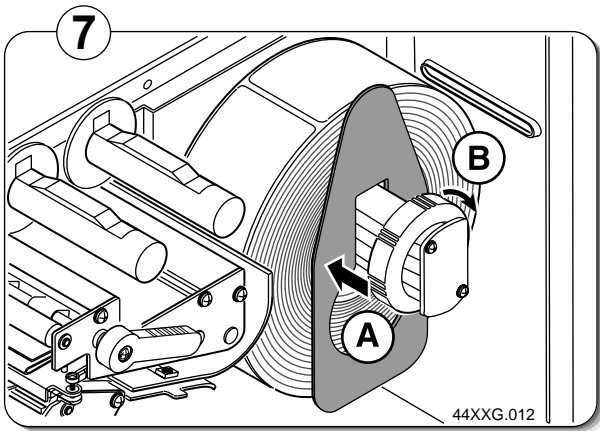


When you power on the printer, the green LED on the front panel lights, the yellow and orange LEDs flash, and the platen roller advances. The yellow LED then stays on until you load media.

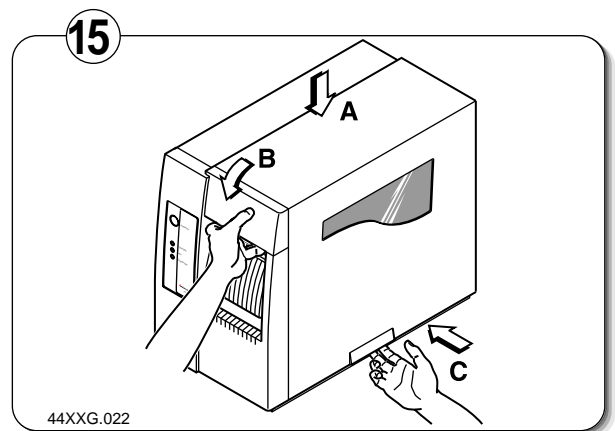
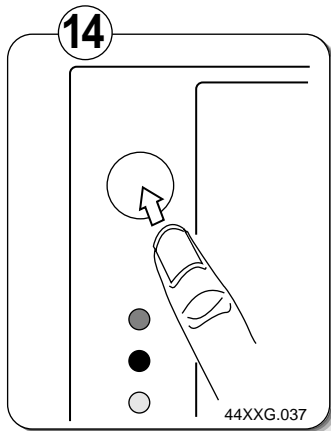
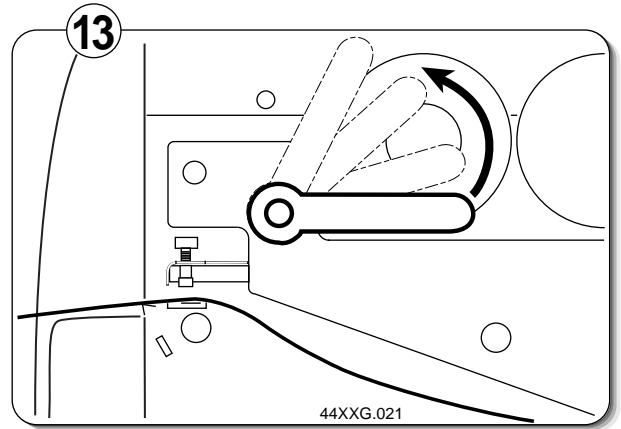
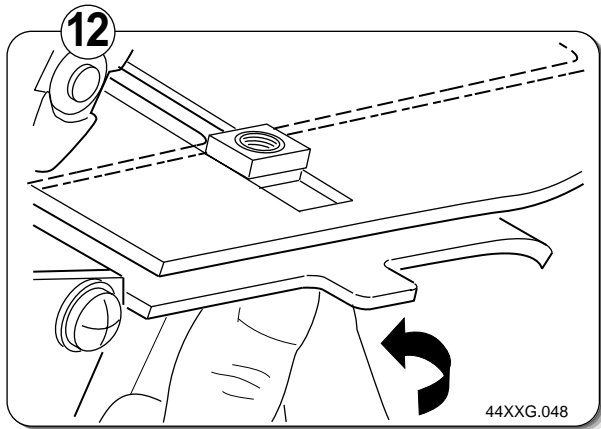
# Loading a Roll of Media



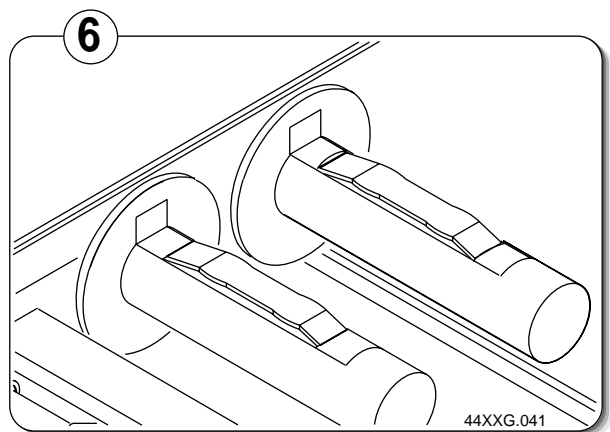
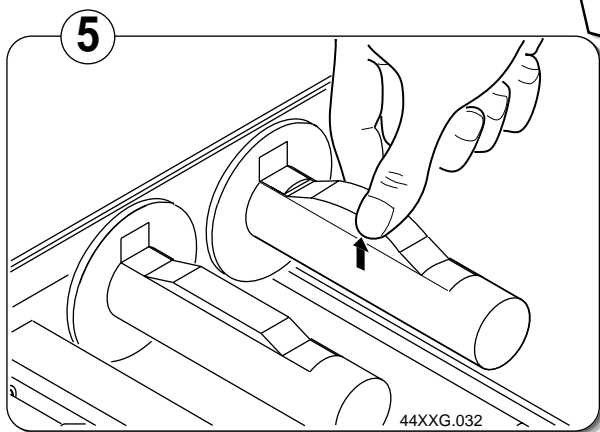
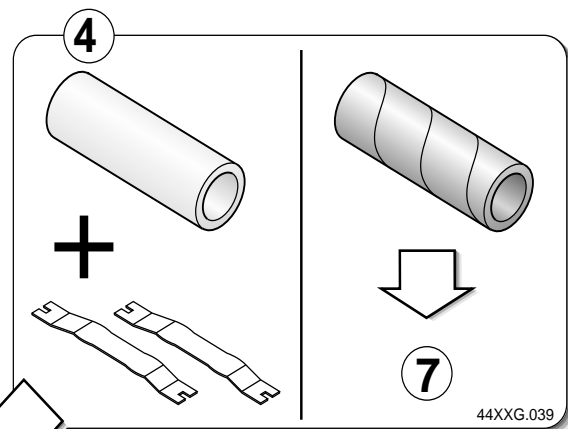
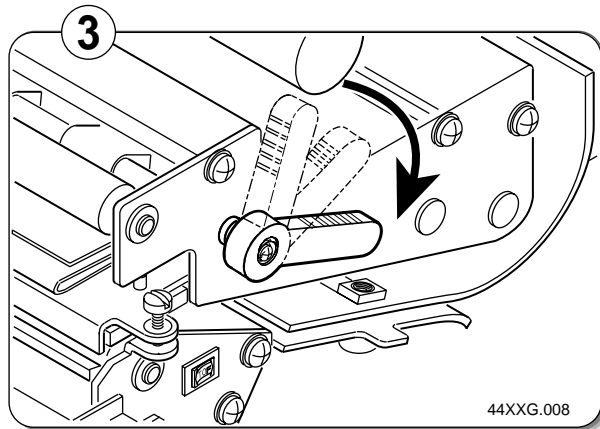
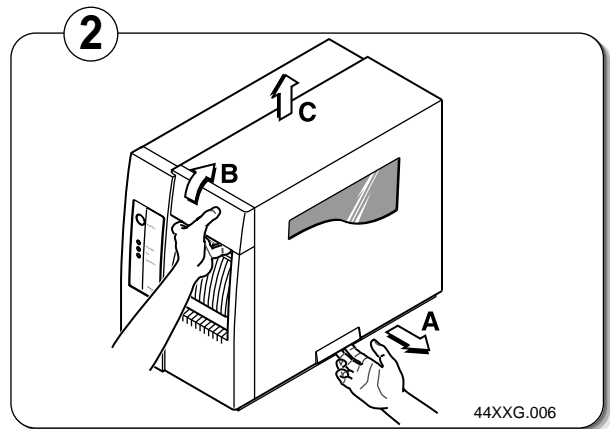
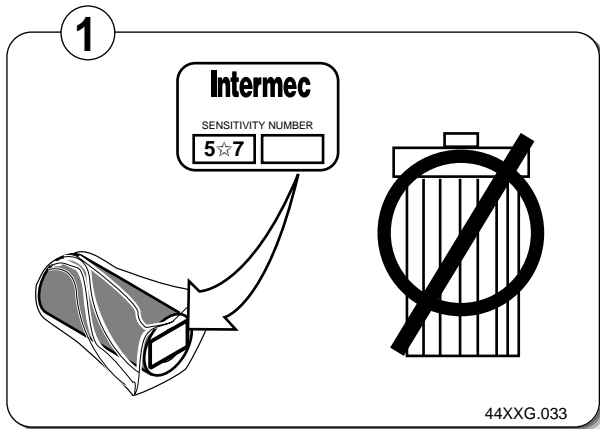




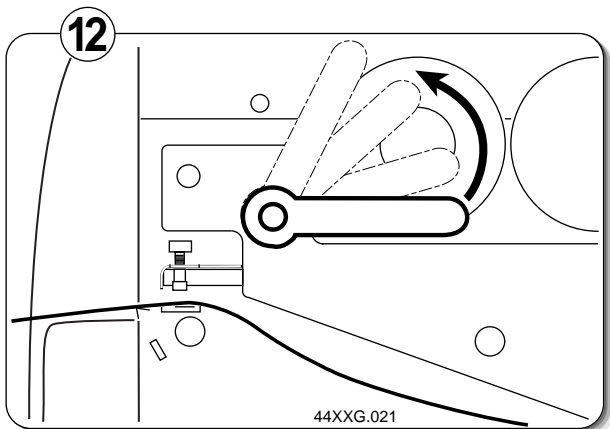
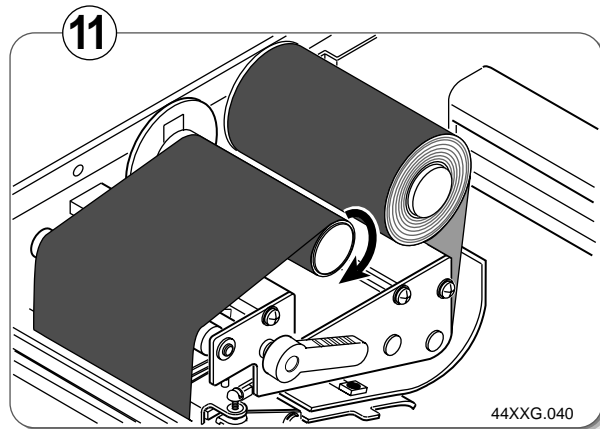
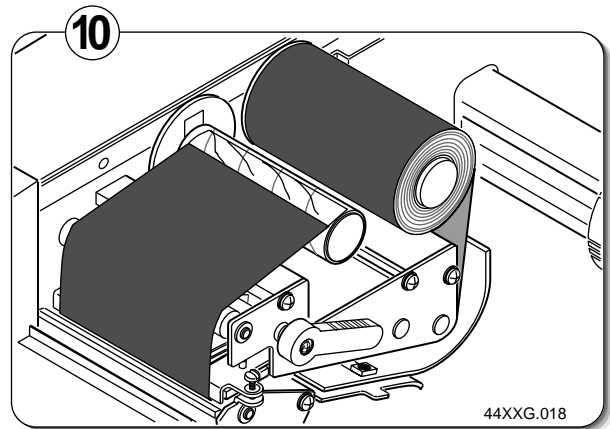
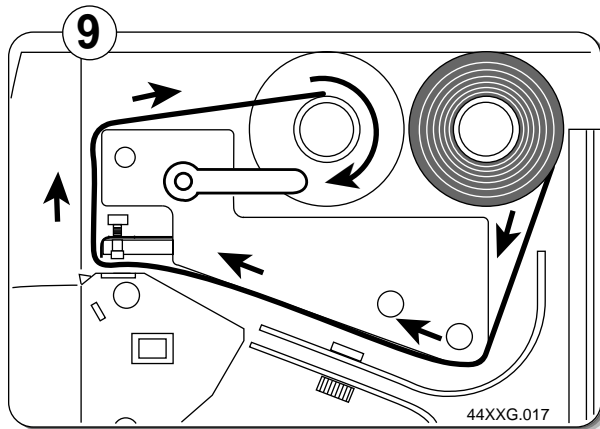
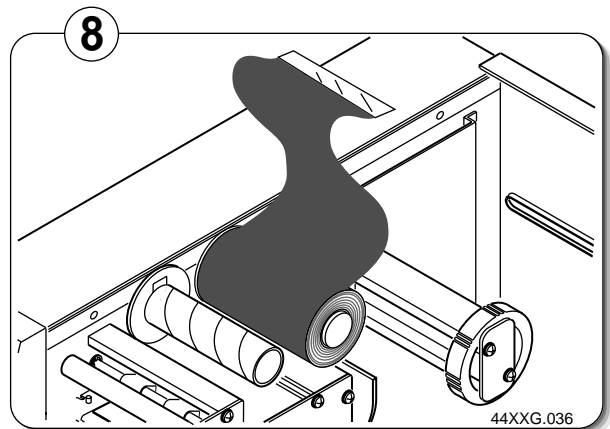
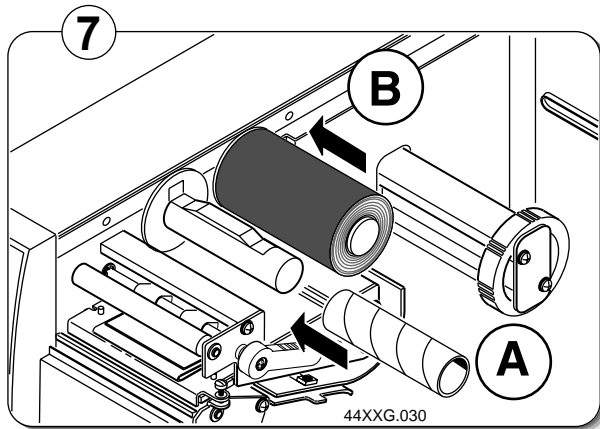
**Loading a Roll of Media (continued)**

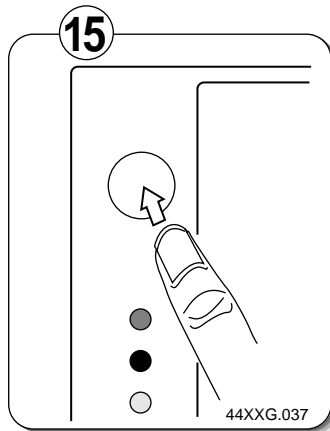
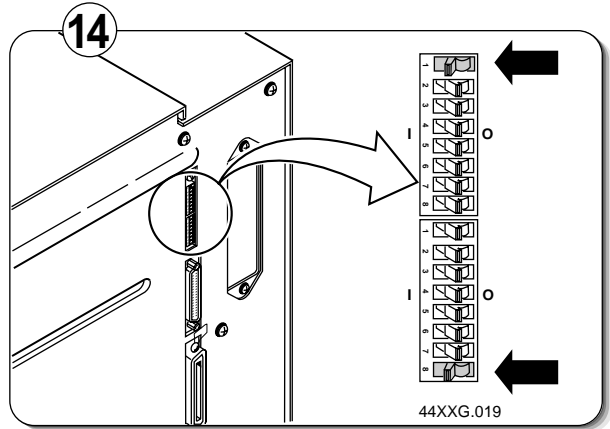
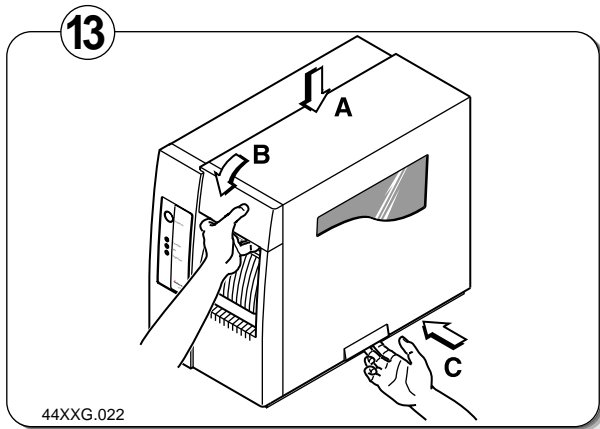


# Loading Thermal Transfer Ribbon



Loading Thermal Transfer Ribbon (continued)





**Note:** The next time that you replace the thermal transfer ribbon roll, use the empty thermal transfer ribbon core as the new rewinder core.



# Connecting the Printer to Your System

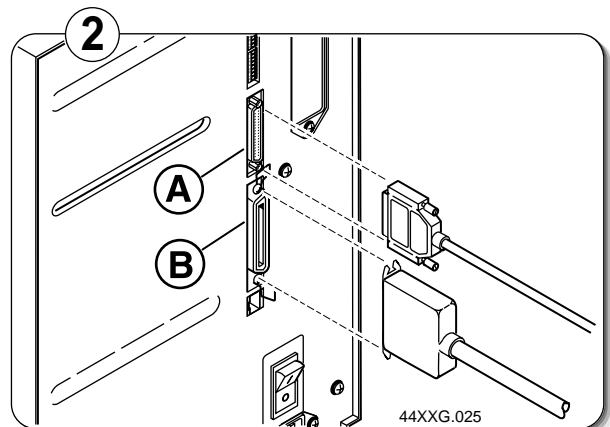
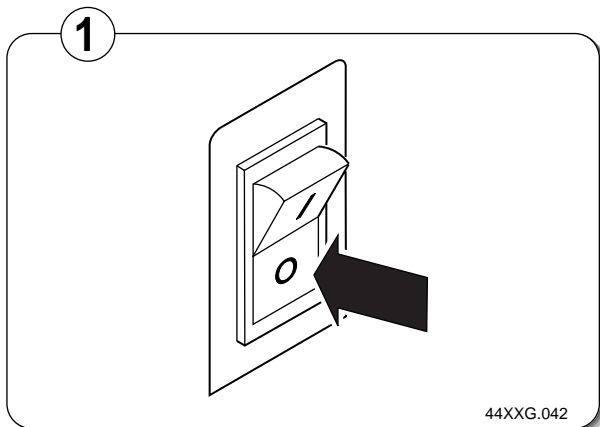
You can connect your printer to a PC, a local area network, an AS/400 (or other midrange system), or a mainframe. Use this section to connect the printer to your system.

## Connecting the Printer to a PC

You can connect your printer to either a serial port or a parallel port on your PC. You must provide the correct cables to connect the printer.

To connect the printer to your PC serial port, you need a shielded EIA RS-232, RS-422, or RS-485 electrical interface with a 25-pin D-style connector. To connect the printer to your parallel port, you need an IEEE 1284 compatible parallel cable. You can purchase the parallel cable from Intermec (Part No. 590124) or purchase a compatible cable from your local computer store.

Contact your Intermec representative for ordering assistance if you do not have the appropriate cables.



- A Serial port
- B Parallel port

**Note:** If you are connecting the printer to a serial port on your PC, you may need to change the serial port configuration of your PC to match the printer. For help, see “Configuring the Serial Port for Communications” later in this guide for the default printer configuration settings.

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## ***Connecting the Printer to a Network, AS/400, or Mainframe***

You can connect your 4420 or 4440 printer to Novell NetWare networks, token ring networks, or other TCP/IP networks. You can also connect your printer to an AS/400 (or other midrange system) or an IBM mainframe.

- To connect the printer to a network, you must have a network interface adapter (for example, Ethernet). The network interface adapter connects to the parallel port of the printer.
- To connect the printer to an AS/400 or a mainframe, you need to have an interface adapter card installed in the optional I/O board port of your printer.

<b>For Connecting To</b>	<b>You Need</b>	<b>Intermec Part Number</b>
Network	Network interface adapter	Contact Intermec or purchase separately
AS/400	Twinax adapter card Twinaxial cable	056835 Purchase cable equivalent to IBM part number 7362267 or 7362062
Mainframe	Coax adapter card Coaxial cable	056836 Purchase cable equivalent to IBM part number 2577672 or 1833108



# Configuring the Serial Port for Communications

If you are using the serial port, you need to configure the serial port of the 4420 or 4440 printer to match the serial port settings of your PC or network controlling device. If the default settings of the printer do not match, use the DIP switch settings table on the next page to configure the serial port.

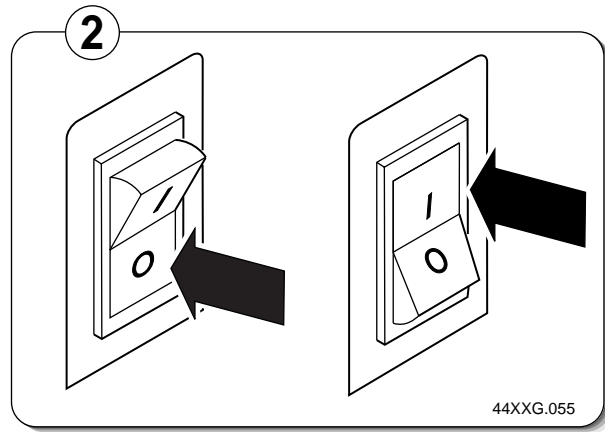
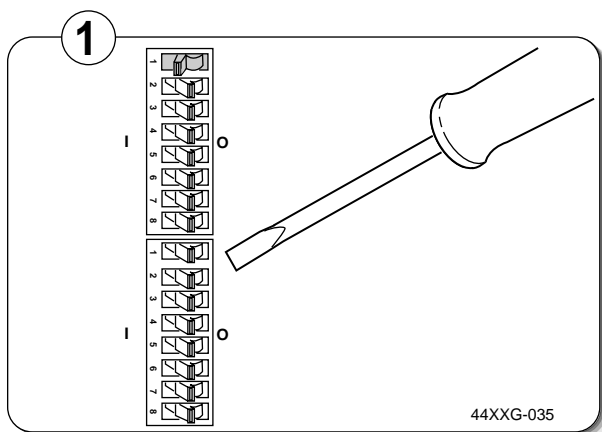
These are the serial port parameters and their descriptions:

Parameter	Description
Baud rate	The rate, in bits per second, at which the host exchanges data with the printer.
Parity	Adds one bit (1 or 0) to the character to make the sum of bits always odd or even.
Data bits	The number of bits that represent the ASCII characters.
Batch Takeup	Enables or disables self-strip/batch takeup motor.
Multi-Drop address	Unique address for each device connected with Multi-Drop protocol.
Protocol	The transmission standards for communication between the printer and each connecting device.
Media type	Enables the printer to work with either direct thermal or thermal transfer media.

**Note:** You need to configure the printer serial port for 8 data bits if you want to print code pages or 8-bit ASCII character sets. Also, use XON/XOFF protocol for Ready/Busy buffer control.

Determine which parameters you need to change and which DIP switches you need to set. Use the DIP switch table on the following page.

**Note:** Make sure all Multi-Drop switches are set to off if you are not using a Multi-Drop network.



# DIP Switch Settings

Top Bank Switch Number

0 = OFF  
1 = ON

<b>Baud Rate Selection</b>							
19,200	0	0	0				
9,600*	1	0	0				
4,800	0	1	0				
2,400	1	1	0				
1,200	0	0	1				
38,400	1	0	1				
57,600	0	1	1				
115,200	1	1	1				
<b>Parity Selection</b>							
Even*				0	0		
Odd				1	0		
None				0	1		
<b>Number of Data Bits</b>							
7 Bit*						0	
8 Bit						1	
<b>Reserved</b>							0
<b>Batch Takeup</b>							
Disabled*							0
Enabled							1

Default settings are noted with an \*

Bottom Bank Switch Number

0 = OFF  
1 = ON

<b>Multi-drop Address Selection</b>							
*A	0	0	0	0	0		
B	1	0	0	0	0		
C	0	1	0	0	0		
D	1	1	0	0	0		
E	0	0	1	0	0		
F	1	0	1	0	0		
G	0	1	1	0	0		
H	1	1	1	0	0		
I	0	0	0	1	0		
J	1	0	0	1	0		
K	0	1	0	1	0		
L	1	1	0	1	0		
M	0	0	1	1	0		
N	1	0	1	1	0		
O	0	1	1	1	0		
P	1	1	1	1	0		
Q	0	0	0	0	1		
R	1	0	0	0	1		
S	0	1	0	0	1		
T	1	1	0	0	1		
U	0	0	1	0	1		
V	1	0	1	0	1		
W	0	1	1	0	1		
X	1	1	1	0	1		
Y	0	0	0	1	1		
Z	1	0	0	1	1		
0	0	1	0	1	1		
1	1	1	0	1	1		
2	0	0	1	1	1		
3	1	0	1	1	1		
4	0	1	1	1	1		
5	1	1	1	1	1		
<b>Protocol</b>							
XON/XOFF*							0
Intermec							1
<b>XON/XOFF</b>							
No status*							0
Status							1
<b>Media Type</b>							
Direct Thermal*							0
Thermal Transfer							1

Default settings are noted with an \*

44XXG.027

# *Communicating With the Printer*

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You are now ready to print labels by downloading data from the host to your 4420 or 4440 printer. *Downloading* is the universal term used to describe the transfer of information from the host to any connected peripheral device, such as your printer. When you transfer data from your printer to the host, you are performing a process called *uploading*.

You can use several methods to download information in your data collection system. The following sections describe different ways to communicate with the printer.

---

## *Using the PrintSet Software*

Use the PrintSet application software supplied with your printer to easily configure your printer from your PC. You can also use PrintSet to:

- download graphics and fonts (including TrueType).
- print test labels.
- download configuration files.

Refer to the PrintSet online help for information on using PrintSet.

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## *Using the Intermec Printer Language (IPL) Command Set*

You can create labels by downloading formats (designs) and data with IPL commands. You can use IPL commands to perform any function or activate any feature of the printer except for those features or functions that you set with the DIP switches. For help using IPL commands, see the *IPL Programming Reference Manual*. You can find the *IPL Programming Reference Manual* on the Internet at [www.intermec.com/manuals/manuals.htm](http://www.intermec.com/manuals/manuals.htm).

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## *Using Third-Party Software*

You can also use third-party software to set many of the printer parameters. You can configure additional parameters by using the IPL command set or the printer's DIP switches.

Use your third-party software to create label formats and convert graphics into a user-defined character (UDC) format that your printer can interpret. Refer to your third-party documentation that came with your software and the *IPL Programming Reference Manual* for more information.

# Printing a Test Label to Test Communications

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If you would like to test your communications by downloading a label, follow the example below. Use the PrintSet application software to send a test label to the printer.

To print a test label

1. Start PrintSet on your PC.
2. Click the Test Print button.



3. Select the Test Label option button.
4. Select either the Text or the Bar Code option button.
  - If you select to print text, you can choose a font in the Select Printer Font list box.
  - If you select to print a bar code, you can choose a symbology in the Select Symbologies list box.
5. Click on the Print button. Your 4420 or 4440 printer prints out your selected test label.

For example, if you choose to print a bar code with the Code 39 symbology, your printer will print out a label similar to this one:



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# Troubleshooting the Printer

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If your labels are not printing properly, check the following table to locate the symptom and correct the problem.

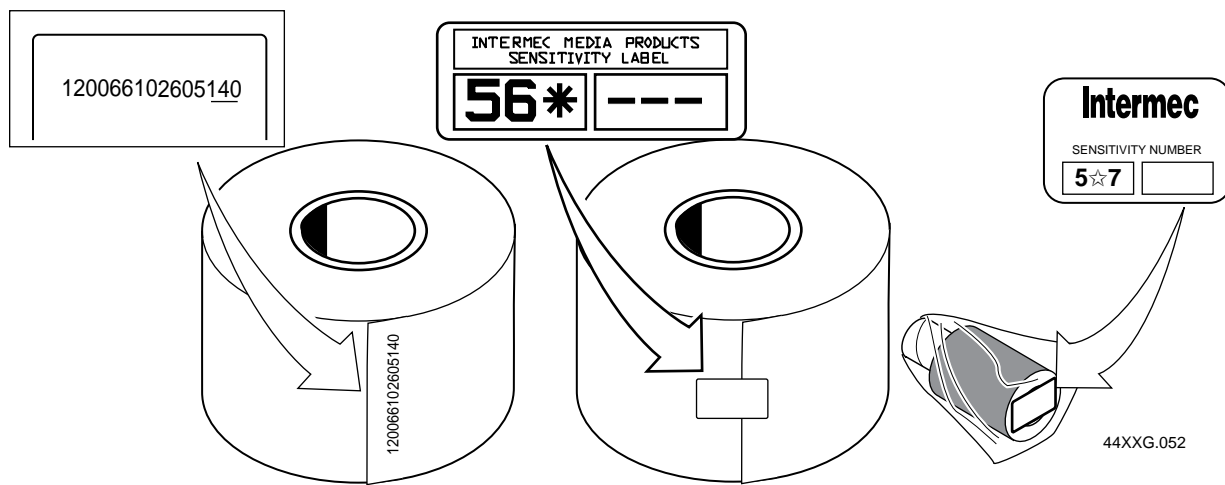
Symptom	Possible Causes	Solution
Blotches on labels.	Printhead is dirty.	Clean the printhead. For help, see “Cleaning the Printhead” later in this guide.
	Poor quality label or ribbon stock.	Replace stock with Intermec label and/or ribbon stock.
	Incorrect media sensitivity setting.	Change sensitivity setting to match the type of media you are using. For help, see “Setting the Media Sensitivity Number” later in this guide.
Printing is too light or dark.	Sensitivity command is incorrectly set.	Change sensitivity setting to match the type of media you are using. For help, see “Setting the Media Sensitivity Number” later in this guide.
	Incorrect darkness adjust control setting.	Adjust the control to achieve the best print quality. For help, see “Adjusting the Print Darkness” later in this guide.
Printing is not on the label.	Printer is misfeeding.	Make sure the media is installed properly along the entire media path. For help, see “Loading a Roll of Media” earlier in this guide.
Print quality is poor.	Incorrect media sensitivity.	Change the sensitivity setting to match the type of media you are using. For help, see “Setting the Media Sensitivity Number” later in this guide.
	Printhead is dirty.	Clean the printhead. For help, see “Cleaning the Printhead” later in this guide.
	Uneven print contrast (density).	Adjust the bias adjust screw. For help, see “Correcting Uneven Print Quality” later in this guide.
	You are using incorrect label or ribbon stock to print labels.	Use only Intermec label and ribbon stock to ensure superior print quality and product performance. See “Setting the Media Sensitivity Number” later in this guide to set the correct media sensitivity numbers.
	Ribbon wrinkling.	Check to make sure that you installed the ribbon correctly. For help, see “Loading Thermal Transfer Ribbon” earlier in this guide.  Adjust the bias adjust screw. For help, see “Correcting Uneven Print Quality” later in this guide.
Direct thermal/thermal transfer switch set in the wrong position.	Set the DIP switch for the type of media you are using. For help, see “Configuring the Serial Port for Communications” earlier in this guide.	

# Setting the Media Sensitivity Number

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

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

- The side of the media roll. Use the last three digits (140 in the example) of the 15-digit number stamped on the roll for the media sensitivity number.
- A small label attached to the roll of media.
- A small label attached to the plastic bag of your ribbon roll.



**Note:** Some ribbon rolls have the media sensitivity number printed on the inside core.

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

This table lists the default media sensitivity numbers:

Media Type	Default
Direct thermal media (2 to 5 ips)	470
Direct thermal media (6 to 8 ips)	740
Thermal transfer media (2 to 8 ips)	567

Use the information on the packaging that you saved, when loading media and ribbon, to determine the correct media sensitivity number for your printer. The sensitivity number on each roll of thermal transfer media or ribbon has an asterisk (\*) in place of one of the digits. To optimize the media sensitivity number for thermal transfer media, you combine the digits as in the following example.

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

To set the media sensitivity number for direct thermal media, use the three-digit media sensitivity number located on the roll of media or listed in the Direct Thermal Media Sensitivity Settings table later in this guide.

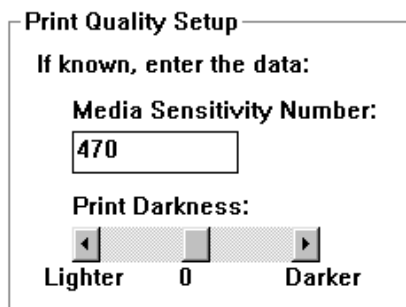
Use the PrintSet software, the Intermec Printer Language (IPL) command set, or your third-party software to change the media sensitivity number. If you do not know the sensitivity numbers for your media or ribbon, use the PrintSet Print Quality Assistant to help you choose the correct media sensitivity number. For help, see the PrintSet online help.

#### To set the media sensitivity number with PrintSet

1. Start PrintSet on your PC.
2. Click the Paper Type button:



3. In the Print Quality Setup dialog box, enter the three-digit number in the Media Sensitivity Number field.



4. Click OK.
5. Download your change to the printer by pressing the button to send command updates to the attached printer.



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### 4420 and 4440 Printer Direct Thermal Media Sensitivity Settings

Approximate Sensitivity Ratings	Sensitivity Setting	Direct Thermal Media
<b>700 Series High Sensitivity</b>	740	Duratherm Lightning Plus 1
	720	Duratherm Lightning Plus 2
<b>400 Series Medium Sensitivity</b>	480	Duratherm IR Lightning Tag
	470	Duratherm Lightning-1
	460	European IR
	450	Duratherm IR Lightning-1
	440	European Thermal
	420	Duratherm Lightning-2
<b>100 Series Low Sensitivity</b>	180	Duratherm II-1
	170	European Tag
	160	Duratherm II Tag
	140	European Top
	130	Duratherm II-2

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### 4420 and 4440 Printer Thermal Transfer Media and Ribbon Sensitivity Settings

Approximate Sensitivity Ratings	Sensitivity Setting	Thermal Transfer Media (Media/Ribbon Stock)
<b>800 Series High Sensitivity (Paper)</b>	864	European Uncoated/Standard
	854	Duratran TTR Paper Labels/Standard
	834	Duratran TTR Paper Tags/Standard
<b>600 Series Medium Sensitivity (Plastic)</b>	687	Duratran Matte Poly./Premium
	683	Duratran TTR Poly. -II/Premium-7
	677	Duratran Syntran/Premium-7
	647	Duratran Tyvek/Premium-7
	643	European Tyvek/Premium
	633	European Polyethelene/Premium
	627	Duratran Kimdura/Premium-7
	623	European Kimdura/Premium
<b>500 Series Medium Sensitivity (Paper)</b>	567	Duratran II-1/Premium-7
	565	European Premium Paper/Premium
	563	Duratran VG/Standard
	533	European Tag/Premium
	527	Duratran II Tag-7 mil/Premium-7
	513	European Coated/Premium
<b>300 Series Low Sensitivity (Plastic)</b>	369	Super Premium Poly./Super Premium-3
	366	Super Premium Poly./Super Premium-7
<b>200 Series Low Sensitivity (Kapton)</b>	238	Gloss Polyimide (Kapton)/Gloss Super Premium
	236	Gloss Polyimide (Kapton)/Super Premium-7
	226	Matte Polyimide (Kapton)/Super Premium-7
	222	Matte Polyimide (Kapton)/Matte Super Premium



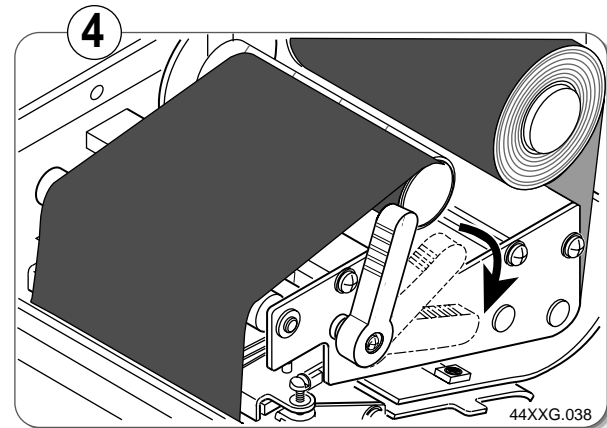
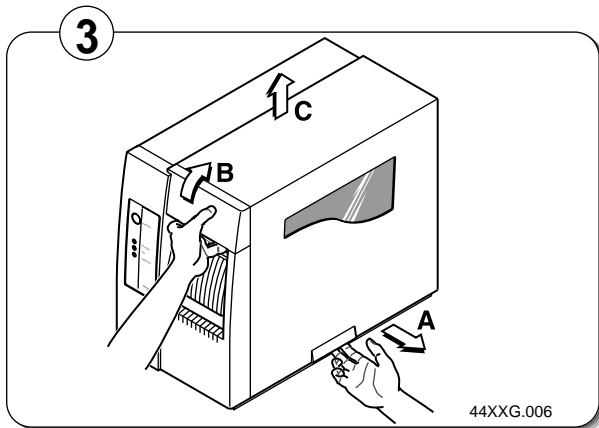
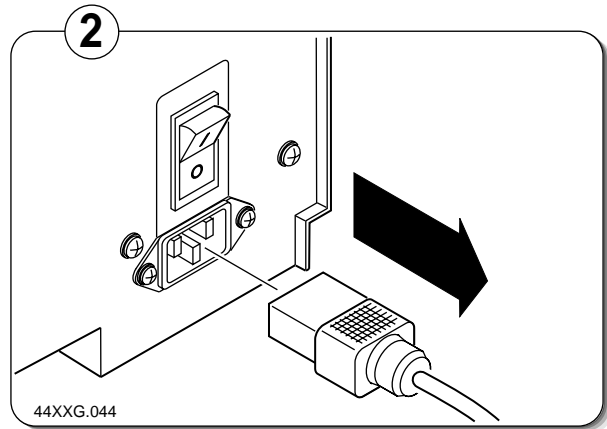
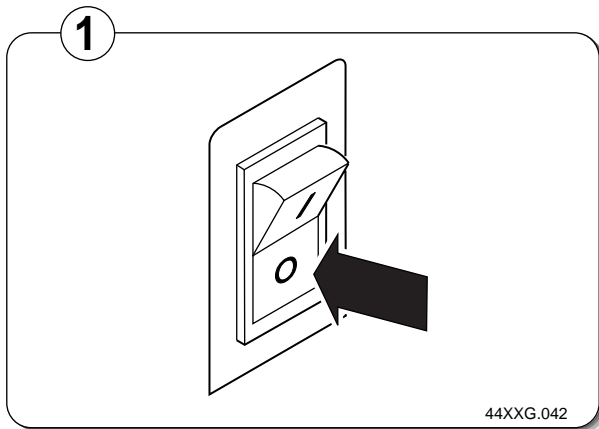
# Cleaning the Printhead

In order for the printhead to provide good print quality, it must maintain close contact with the media. Therefore, cleaning media debris from the printhead is very important. You should clean the printhead after every roll, or 6,000 inches (152 m), of media have been printed. If you are printing in thermal transfer mode, you may want to clean the printhead after every ribbon roll or 18,000 inches (457 m) of ribbon. Clean more often if necessary.

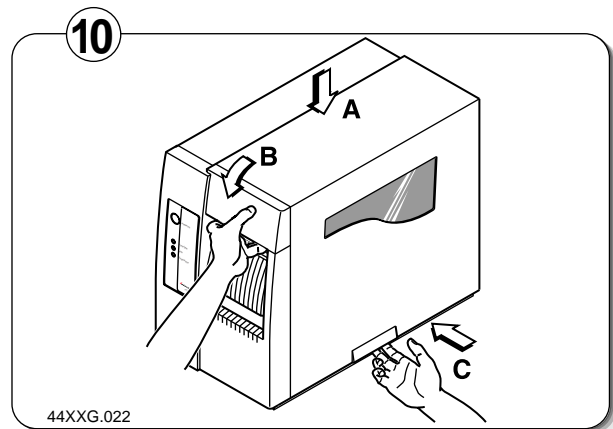
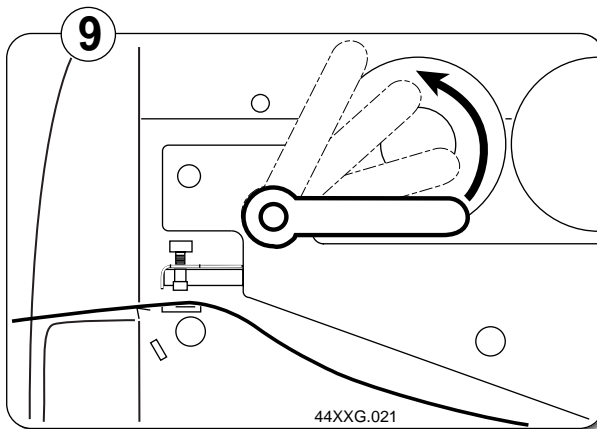
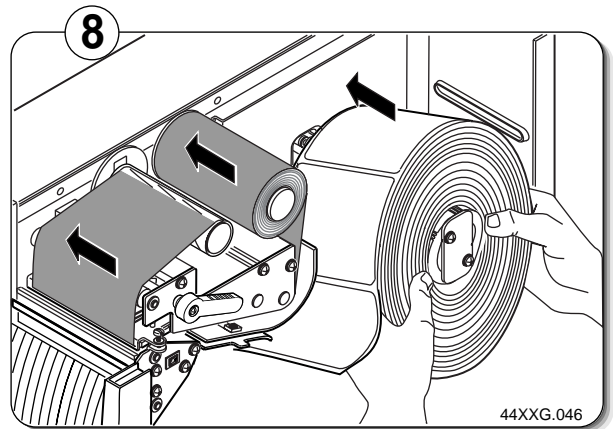
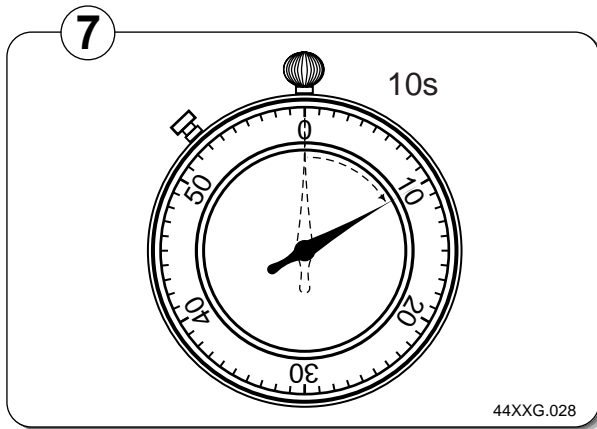
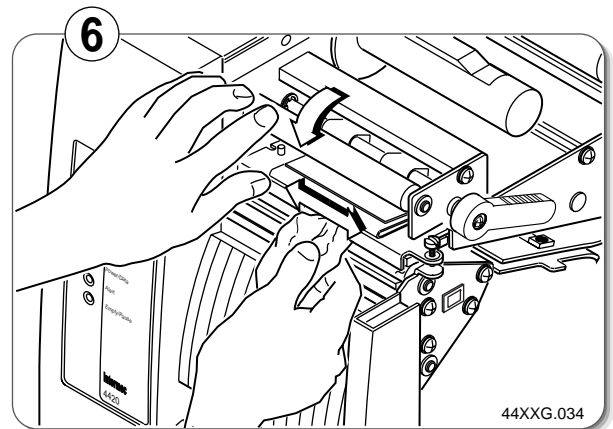
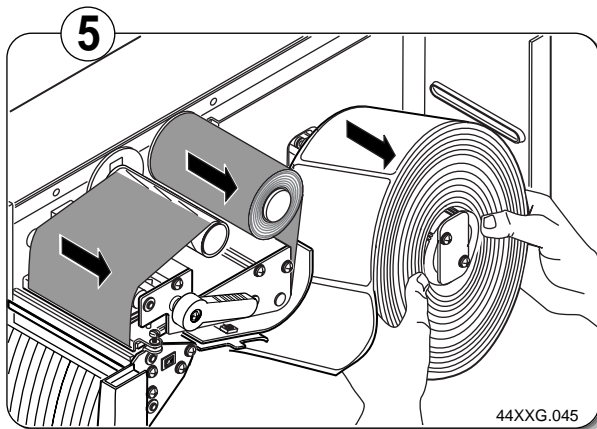


### Caution

**Do not use sharp objects such as knives or screwdrivers to scrape the printhead clean. Cleaning with sharp objects will damage the printhead. Clean with only a cotton swab, a clean, lint-free cloth, or a tissue damp with isopropyl alcohol.**



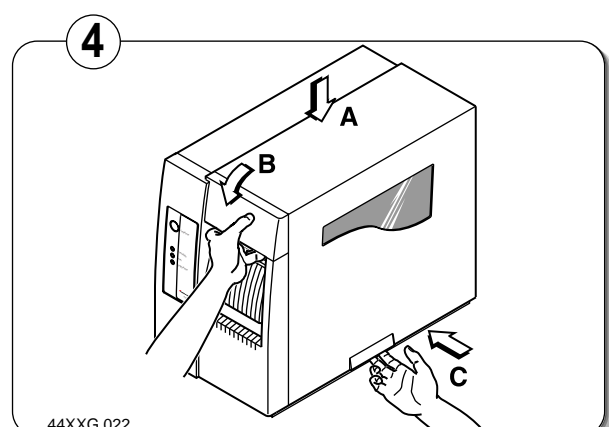
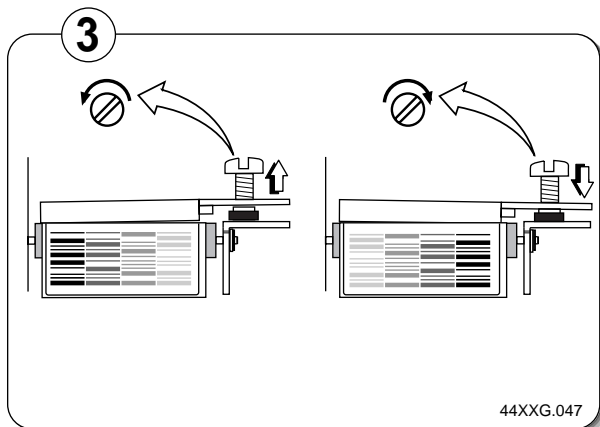
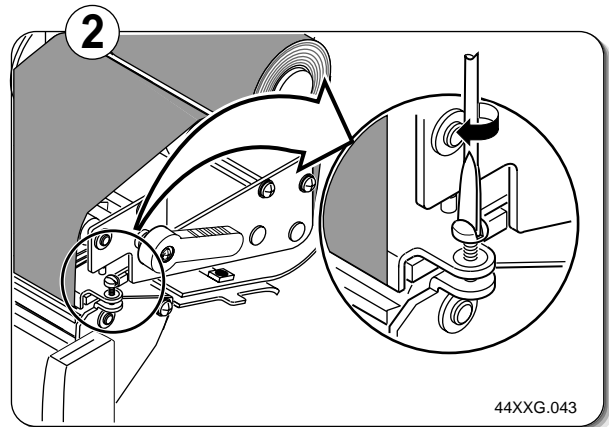
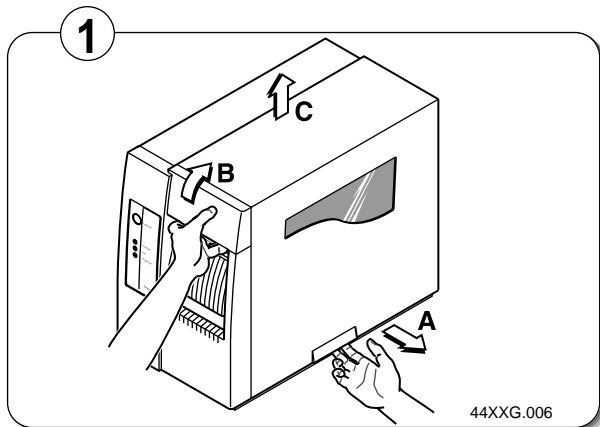
*Cleaning the Printhead (continued)*



# Correcting Uneven Print Quality

You may experience problems in print quality (ribbon wrinkling or light print on one side of your label) if the printhead is not making even contact with the label stock. You need a straight-slot screwdriver to turn the bias adjust screw.

**Note:** To maintain good print quality, adjust the bias adjust screw each time you use media of a different width.



## *Fine-Tuning the Top of Form Position*

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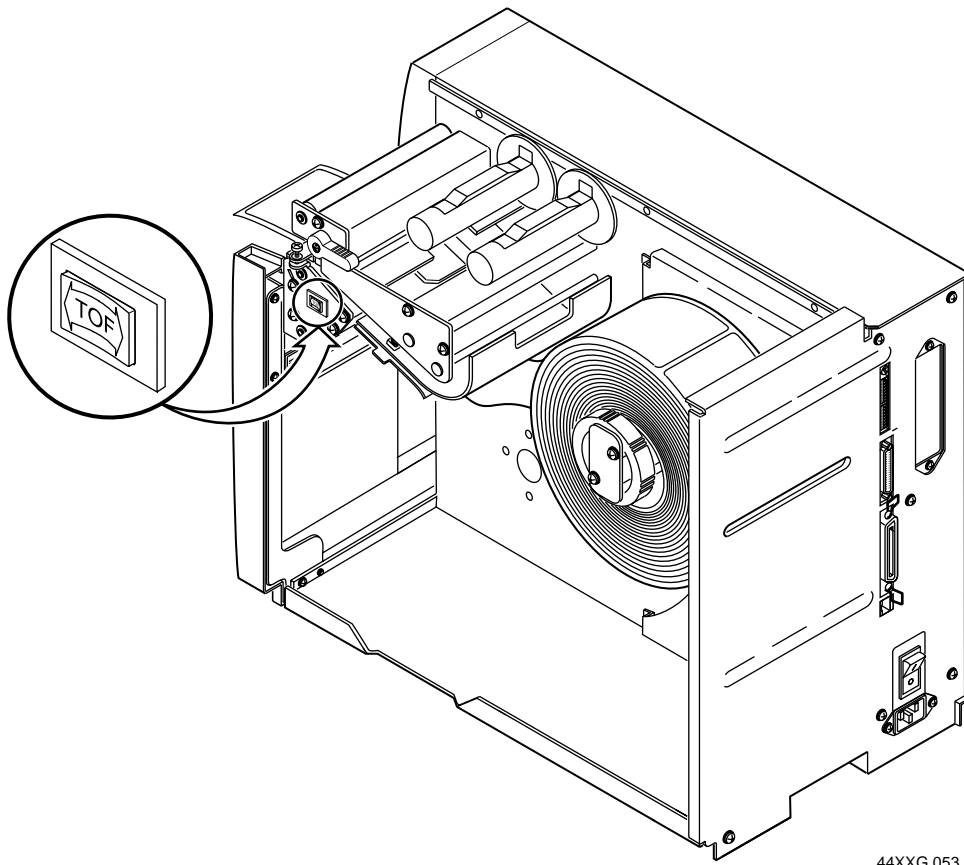
If your label format prints too close to the front or back edge of the label, you can fine-tune the position with the top of form (TOF) switch. The TOF switch controls the position of the format forward or backward along the length of the label.

Only use the TOF switch to fine-tune your label format position. Do not use the TOF switch to design your label format. This is important because the printer returns to the default TOF setting when you:

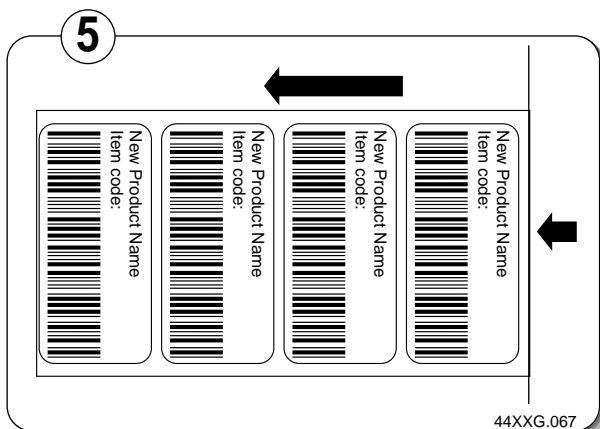
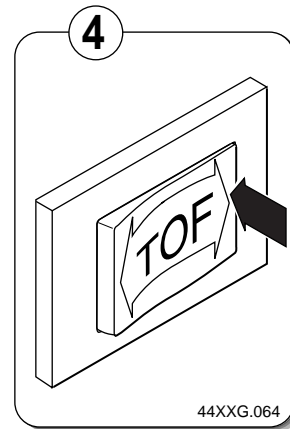
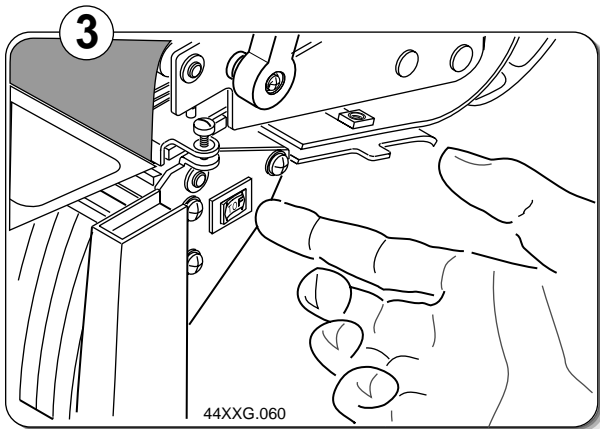
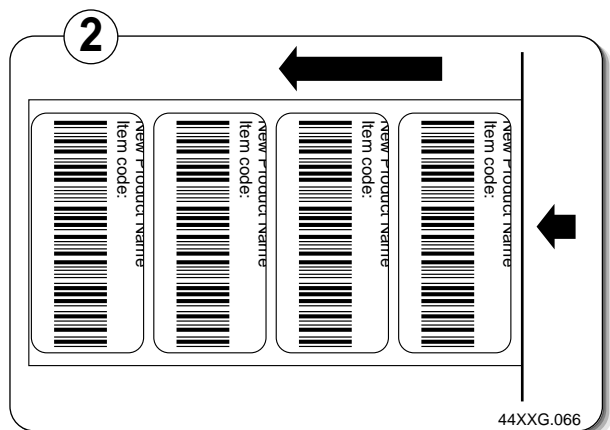
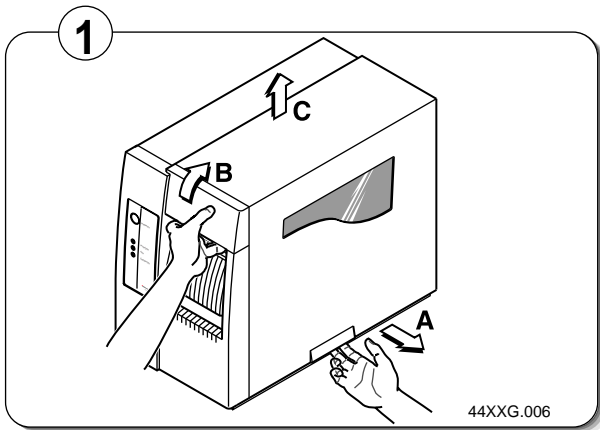
- cycle printer power.
- lift the printhead.

Use the TOF switch to fine-tune the format position after you design the label. Use PrintSet or the IPL top of form command to control the initial TOF setting. For help on using the top of form command, see the PrintSet help or the *IPL Programming Reference Manual*.

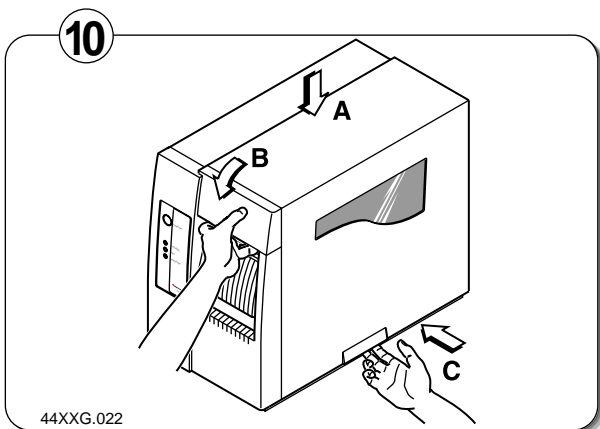
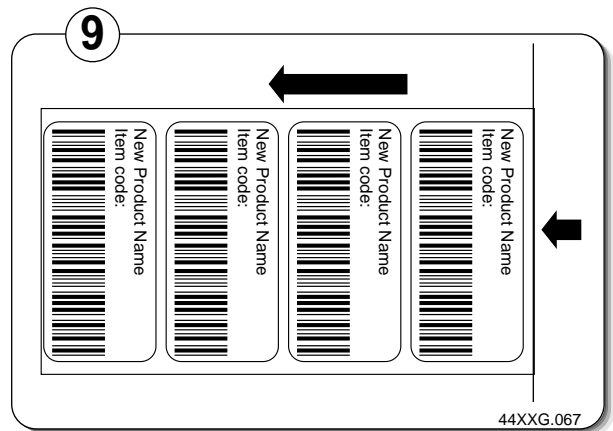
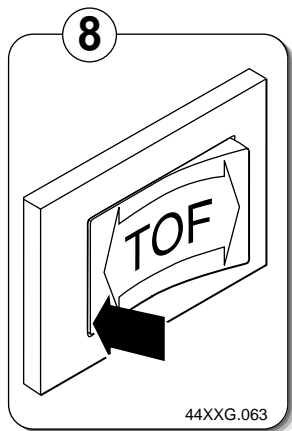
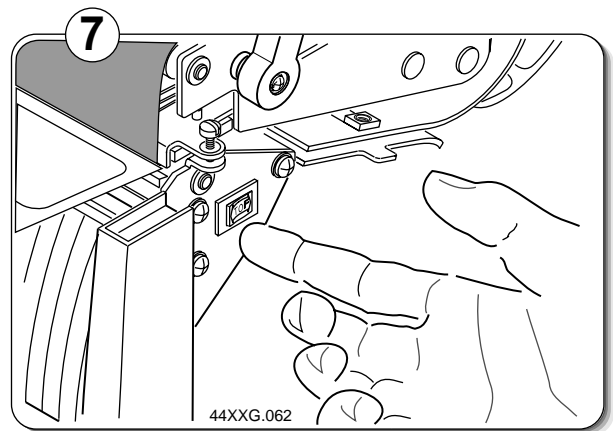
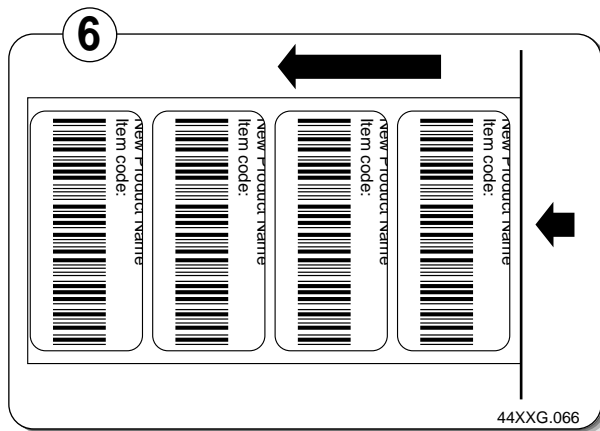
The TOF switch is a small rocker switch located on the lower outboard plate of the printer.



To move a label format backward with the TOF switch



To move a label format forward with the TOF switch



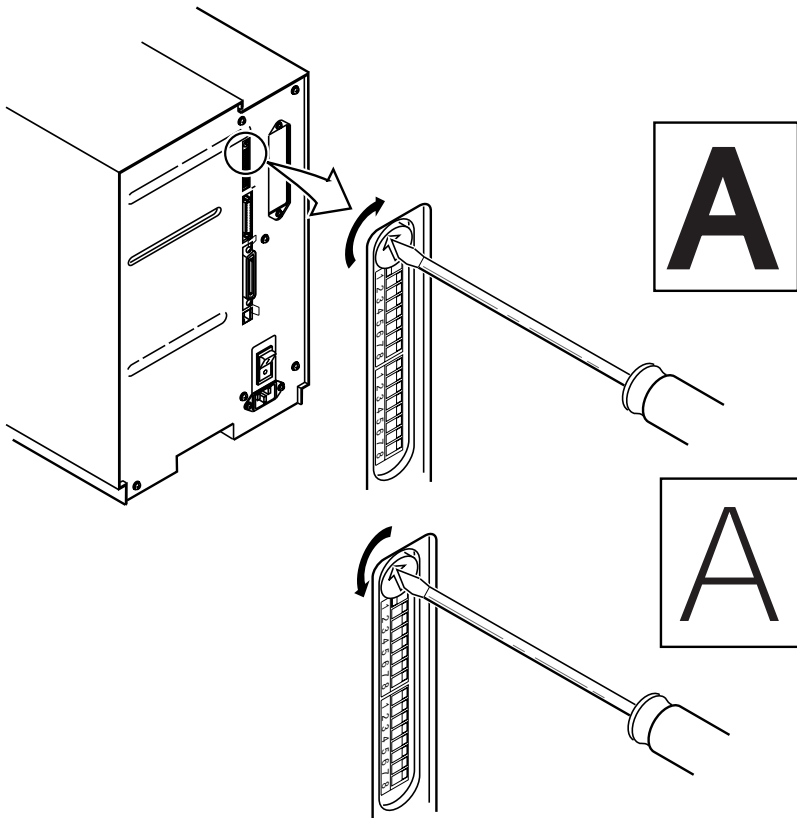
# Adjusting the Print Darkness

Use the manual darkness adjust control in combination with the Print Darkness adjustment in PrintSet to fine-tune the darkness of print on your labels. The fine adjustments compensate for variations in the media (“lot to lot”), the printhead, or the printer. Set the darkness adjust control after you enter the media sensitivity number.

For best results in adjusting the print darkness (energy to the printhead), perform these procedures in order:

1. Set the correct media sensitivity number. For help, see “Setting the Media Sensitivity Number” earlier in this guide.
2. Adjust the manual darkness adjust control on the back of the printer.
3. Adjust the Print Darkness setting in PrintSet.

To adjust the manual darkness adjust control



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The print darkness adjust in PrintSet is similar to the dark adjust available on a copier. An increase in print darkness increases the energy to the printhead and results in darker print. A decrease in print darkness decreases the energy to the printhead and results in lighter print.

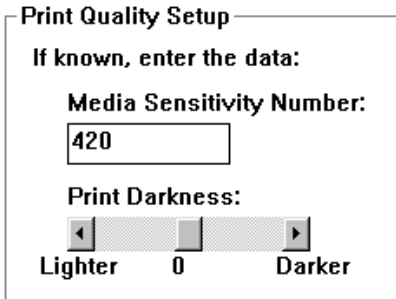
#### To adjust the print darkness setting with PrintSet

1. Start PrintSet on your PC.
2. Click the Paper Type button:



3. In the Print Quality Setup dialog box, adjust the Print Darkness slider bar until the setting that you want appears underneath it.

You can adjust the print darkness from +10 to -10 (darkest to lightest).



4. Click OK.
5. Download your change to the printer by pressing the button to send command updates to the attached printer.

