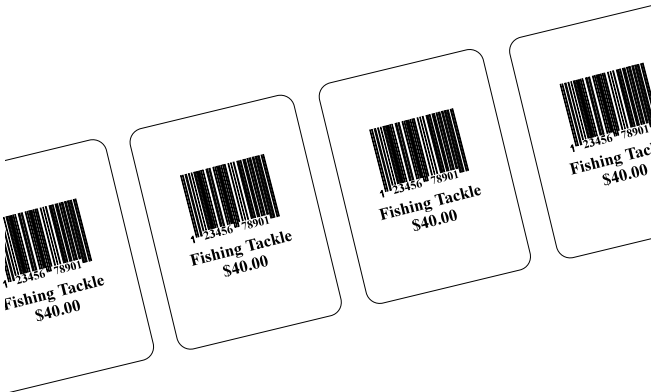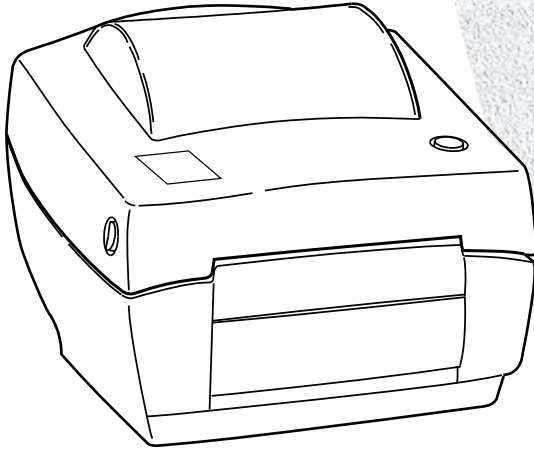# Equipment Manual

Monarch®

PAXAR

Each product and program carries a respective written warranty, the only warranty on which the customer can rely. Monarch reserves the right to make changes in the product, the programs, and their availability at any time and without notice. Although Monarch has made every effort to provide complete and accurate information in this manual, Monarch shall not be liable for any omissions or inaccuracies. Any update will be incorporated in a later edition of this manual.

WARNING

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

CANADIAN D.O.C. WARNING

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.
Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Réglement sur le brouillage radioélectrique édicte par le ministère des Communications du Canada.

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Centronics is a registered trademark of Centronics Data Computer Corporation.

Monarch Marking Systems
P.O. Box 608
Dayton, Ohio 45401

TABLE OF CONTENTS

GETTING STARTED

1

The Monarch® 9414™ is a low cost, desktop thermal direct printer. It is designed for printing labels, tags or receipts (with or without bar codes) from any MS-DOS®, Windows® or ASCII-based compatible computer.

Introduction

This chapter includes information about

◆   unpacking the printer.

◆   connecting the power supply.

◆   connecting the communication cable.

◆   reading the indicator light.

Audience

The *Equipment Manual* is for the person who prints and applies labels.

Ordering the Programmer's Manual

The 9414 uses the programming language to create labels for printing. It works with the printer's built in features to minimize programming and data transfer time.

The online version of the programmer's manual can be downloaded off of Monarch's Web Site **(www.monarch.com/service/service_front.htm)** as an Adobe Acrobat file.

Unpacking the Printer

After you unpack the printer, you should have

◆ 9414 printer
◆ Power Supply
◆ *Equipment Manual*
◆ Cleaning Pen.

If any items are missing, contact Monarch for replacement parts.

_____

Keep all packaging material in case you
need to move or return the printer.

_____

Connecting the Power Supply

CAUTION

Do not touch the electrical connectors while
setting up the printer. Electrostatic discharge
can damage or destroy the printhead or
electronic components.

_____

To connect the power supply:

1. Place the printer in a location allowing easy access
to the front of the printer.

_____

The printer should never be operated
while resting on its side or upside down.

_____

2. Place the power supply in a suitable location, preferably on the floor, near an electrical outlet.

3. Turn the printer off. Press (O) to turn off and (I) to turn on.

4. Plug the power supply cable into the socket at the rear of the printer.

Socket
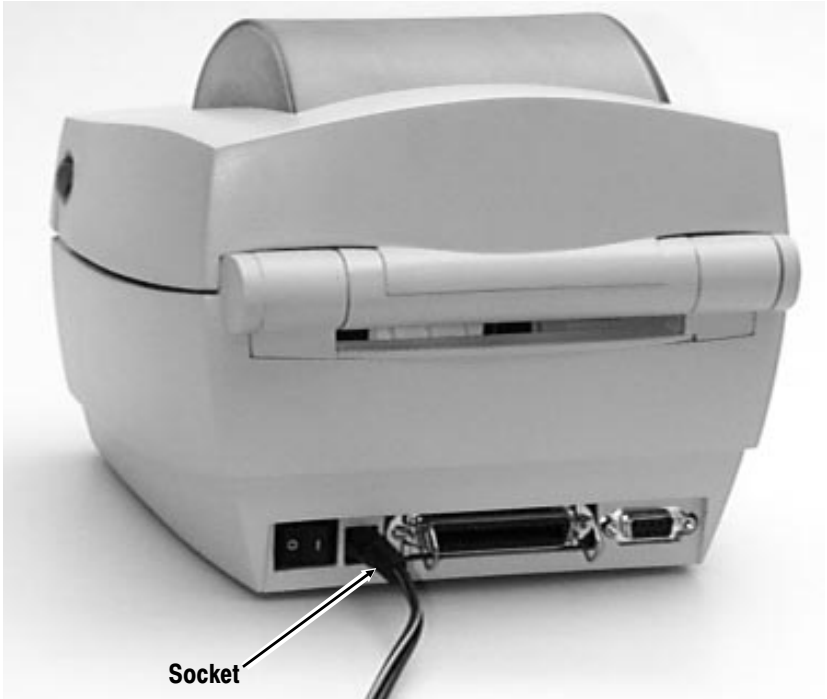
5. Plug the other end of the power supply cable into a grounded electrical outlet.

WARNING

The printer and power supply should never be operated in a location where either one can get wet. Personal injury could result.

Connecting the Communication Cable

Before the printer can accept print jobs from the host, you must

◆ connect the communication cable to the printer and the host.

◆ set the communication values on the printer to match those at the host (only required if you are using the serial port).

For parallel communication:

1. Turn the printer off before connecting the cable.

2. Connect a parallel printer cable from the computer to the Centronics® parallel port at the back of the printer.

Parallel Port
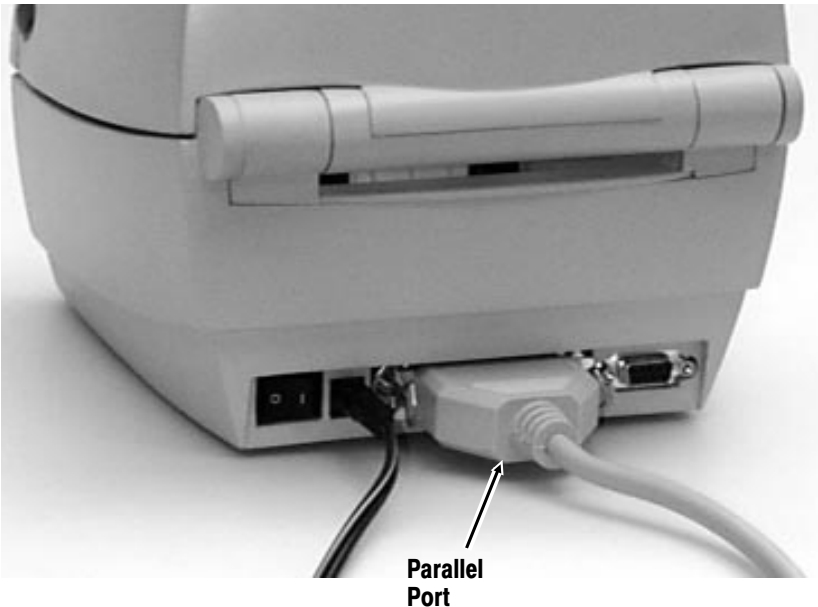
3. Secure the cable with the spring clips.

For serial communication:

1. Turn the printer off before connecting the cable.

2. Connect a serial printer cable from the host to the DB-9 RS-232C serial port at the back of the printer.

Serial Port

To set communication values, refer to the *Programmer's Manual*.

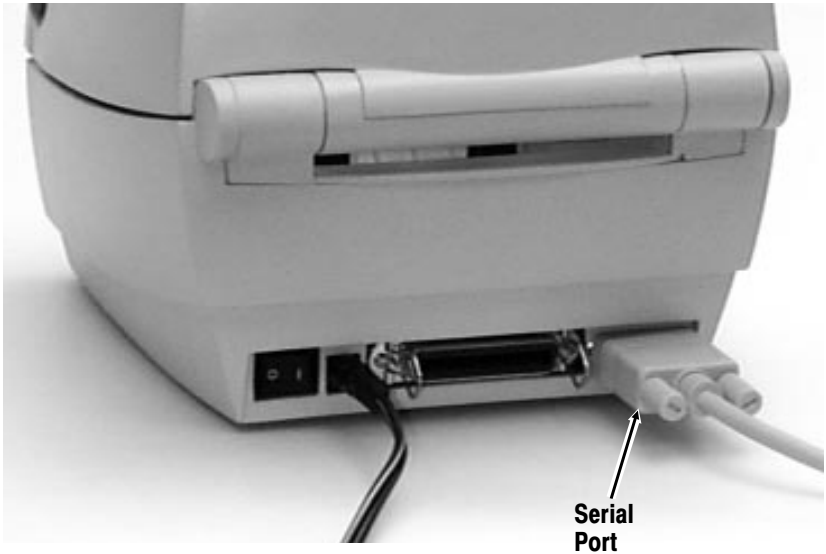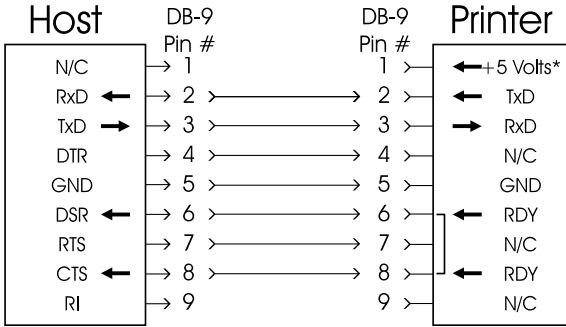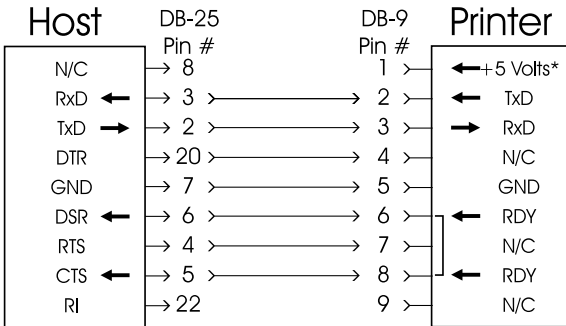# Serial Interface Cable Wiring

The figure below displays the cable wiring required to use the printer's serial interface.

Host	DB-9 Pin #		DB-9 Pin #	Printer
N/C	→ 1		1 >	← +5 Volts*
RxD ←	→ 2 >	→	2 >	← TxD
TxD →	→ 3 >	→	3 >	→ RxD
DTR	→ 4 >	→	4 >	N/C
GND	→ 5 >	→	5 >	GND
DSR ←	→ 6 >	→	6 >	← RDY
RTS	→ 7 >	→	7 >	N/C
CTS ←	→ 8 >	→	8 >	← RDY
RI	→ 9		9 >	N/C

Female DB-9 to Male DB-9
Cable P/N 300017-006 (6') or 300017-010 (10')

| Host	DB-25 Pin #		DB-9 Pin #	Printer
N/C	→ 8		1 >	← +5 Volts*
RxD ←	→ 3 >	→	2 >	← TxD
TxD →	→ 2 >	→	3 >	→ RxD
DTR	→ 20 >	→	4 >	N/C
GND	→ 7 >	→	5 >	GND
DSR ←	→ 6 >	→	6 >	← RDY
RTS	→ 4 >	→	7 >	N/C
CTS ←	→ 5 >	→	8 >	← RDY
RI	→ 22		9 >	N/C

Female DB-25 to Male DB-9
Cable P/N 300018-006 (6')

*+5 volts at 150 mA for external device (e.g. KDU or scanner)

Reading the Indicator Light

The indicator light helps you check the printer's status.

Indicator Light	Description
GREEN	Printer is on.
RED	Supply has run out or is not loaded. Load Supply. See Chapter 2, "Loading Supplies," for more information.
ORANGE	Error has occurred. See Appendix A, "Troubleshooting," for more information. To clear error, press the FEED button.
No light	Printer is off. Make sure the power supply is connected properly. See "Connecting the Power Supply" earlier in this chapter.

Feed Button

Indicator Light (around the Feed Button)
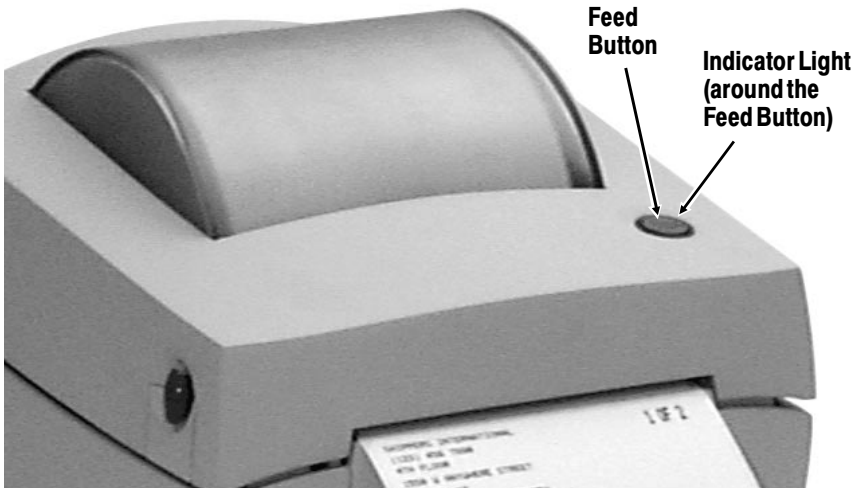
LOADING SUPPLIES

This chapter describes how to load

◆ a roll of labels or tags.

◆ a roll of labels for peel mode.

◆ fan-fold supplies.

Loading Labels or Tags

Your printer can print on thermal direct paper, labels and tags.

If you run out of labels while printing, do not turn the printer off when reloading the labels. You may lose your data. The printer resumes printing when reloadedDo

---

1. Get a new roll of supply. Remove and discard the tape.

2. Press the cover release buttons (on both sides of the printer) towards the front of the printer. Lift open the cover.

3. Adjust the supply guides to their widest position by turning the dial.
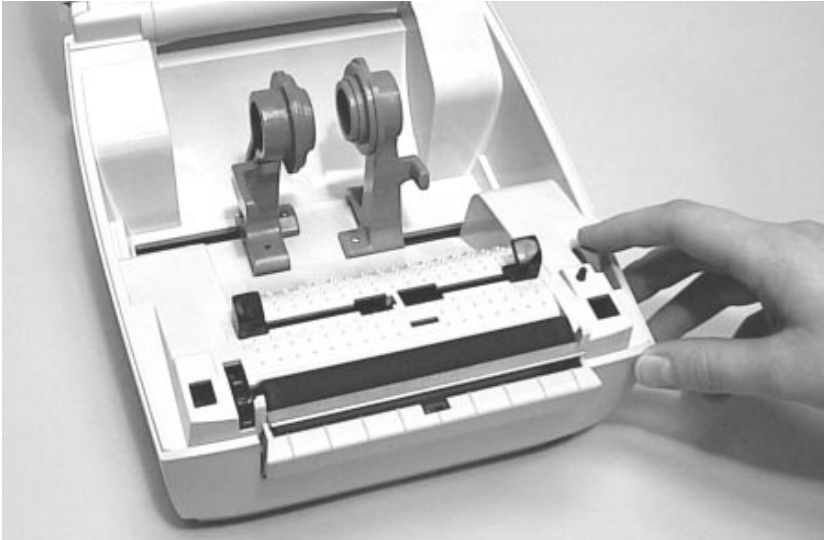
4. Open the supply holders to their widest position by pushing out the supply holder tabs.

5. Load the supply roll.

6. Press the supply under the the supply guides and adjust the supply guides so they just touch the edges of the backing paper.

7. Close the cover until the cover locks in place.

8. Press the FEED button. The indicator light should be GREEN.

Loading for Peel Mode

Peel mode separates the label from the backing paper while printing. Your printer may have this option.

1. Press the cover release buttons (on both sides of the printer) towards the front of the printer.
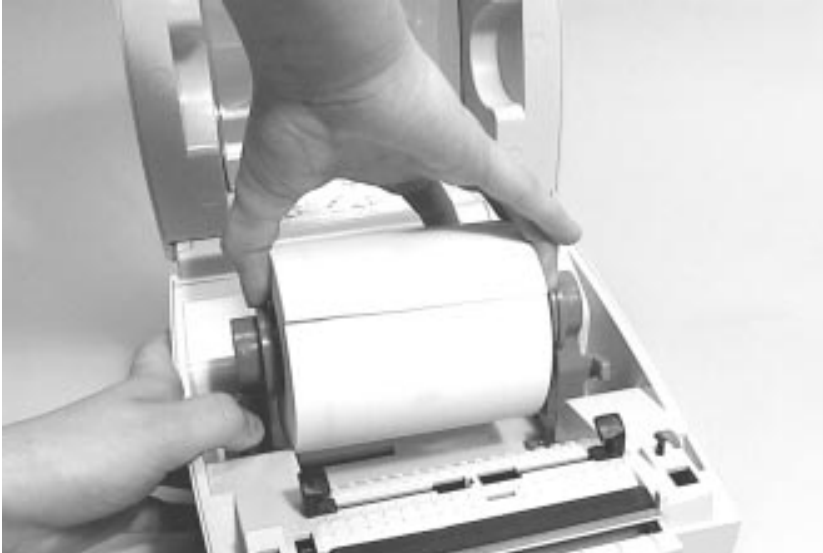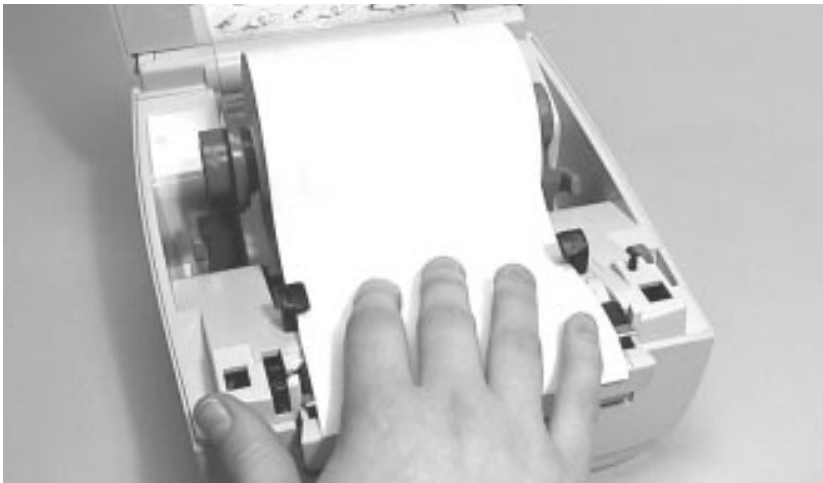

2. Lift open the cover.

3. Adjust the supply guides to their widest position by turning the dial.
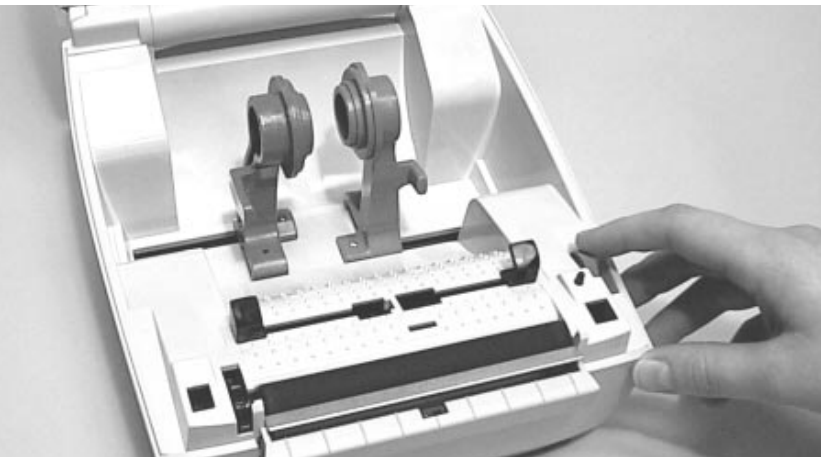
4. Open the supply holders to their widest position by pushing out the supply holder tabs.
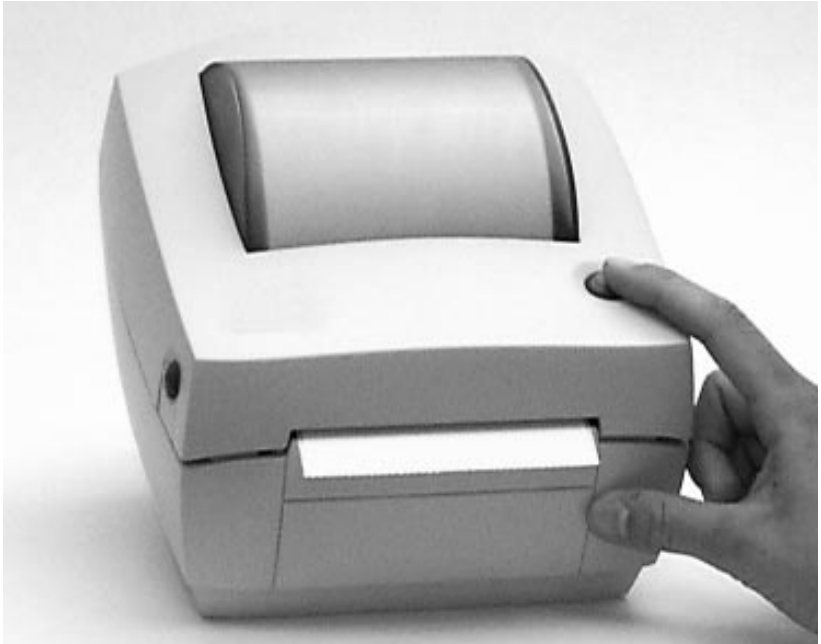
5. Hold open the supply holders while loading the supply roll. Release the supply holders until the supply core fits on the supply holders.
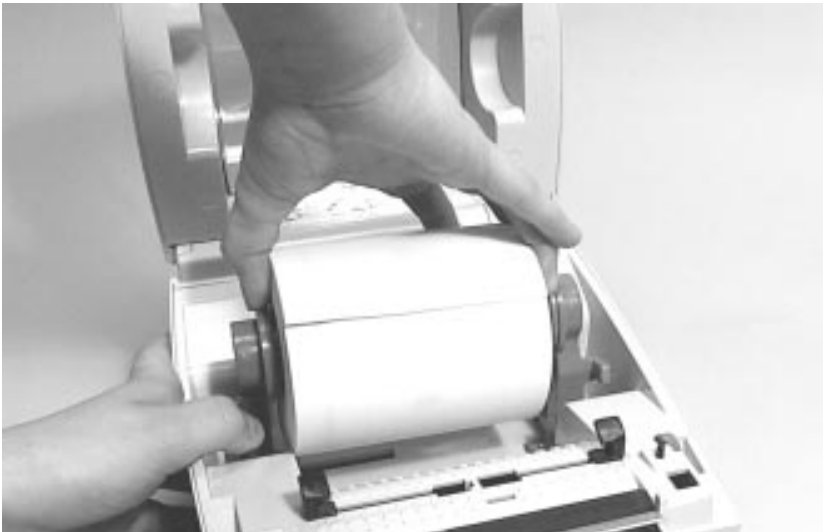
6. Open the peel bar cover by pushing down.
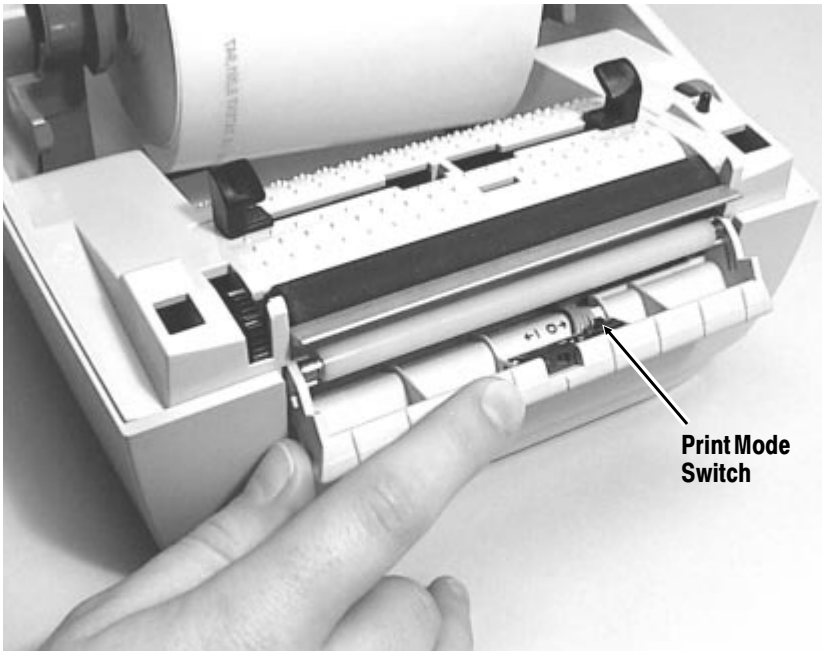
Print Mode Switch

7. Change print modes to peel by switching the print mode switch to the (1) position.

1=Peel Mode
O=Non-peel Mode

8. Remove the first two labels from the backing paper and cut the corners of the backing paper.

9. Feed the backing paper over the peel bar and under the peel roller.

Peel Bar

Peel Roller
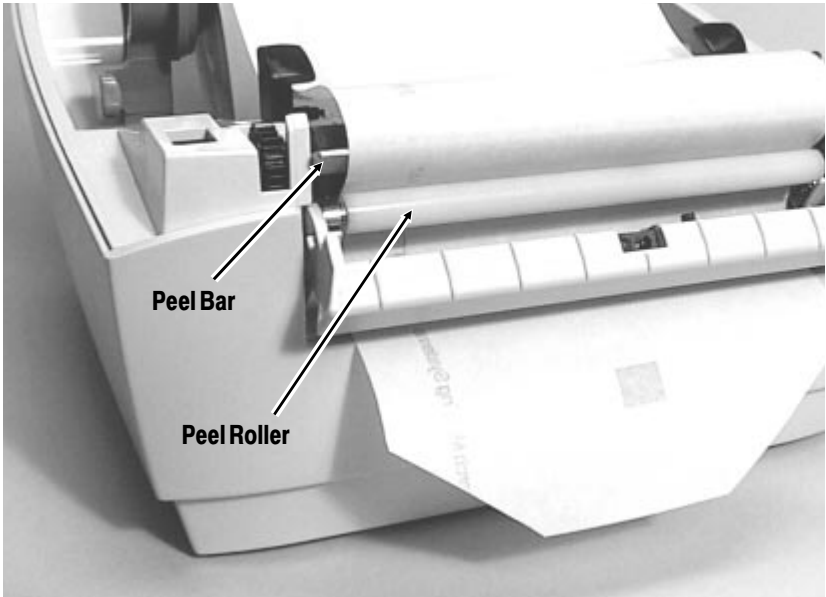
10. Press the supply under the supply guides and adjust the supply guides so they just touch the edges of the backing paper.

11. Close the peel bar cover by pushing up until it locks.

12. Close the cover until the cover locks in place.
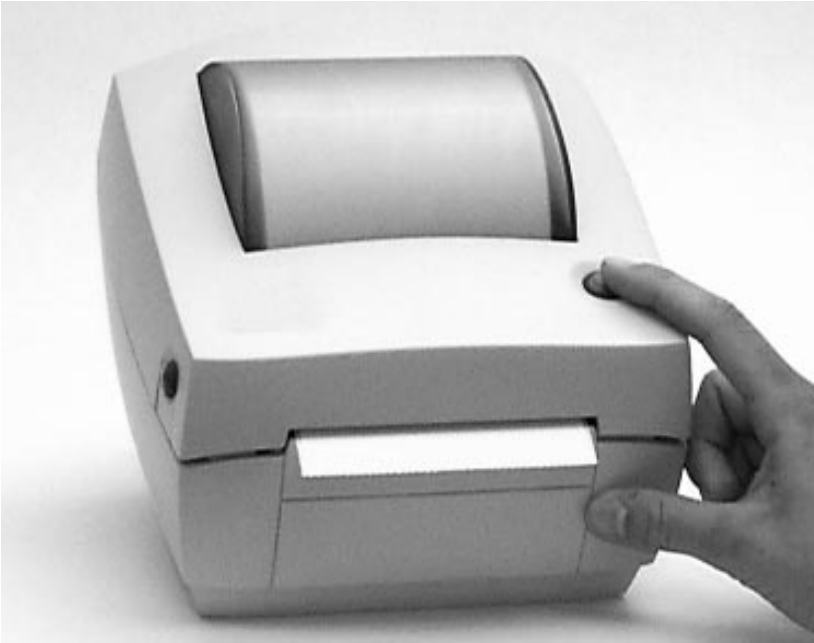
13. Press the FEED button to advance a peeled label. The indicator light should be GREEN.

Loading Fan-Fold Supplies

1. Place a stack of fan-fold supplies behind to the printer, label side up.

> You may have to move the printer to allow room for the supply.

2. Press the cover release buttons (on both sides of the printer) towards the front of the printer. Lift open the cover.

3. If necessary, remove any supply that has been previously loaded by pushing out on the supply holder tabs. The supply should lift out of the printer.

**4.** Adjust the supply guides to their widest position by turning the dial.

5. Open the supply holders to their widest position by pushing out the supply holder tabs.

6. Hold open the supply holders while tightening screw.

Screw

**7.** Feed the fan-fold supply through the fan-fold slot.

**Fan-Fold
Slot**
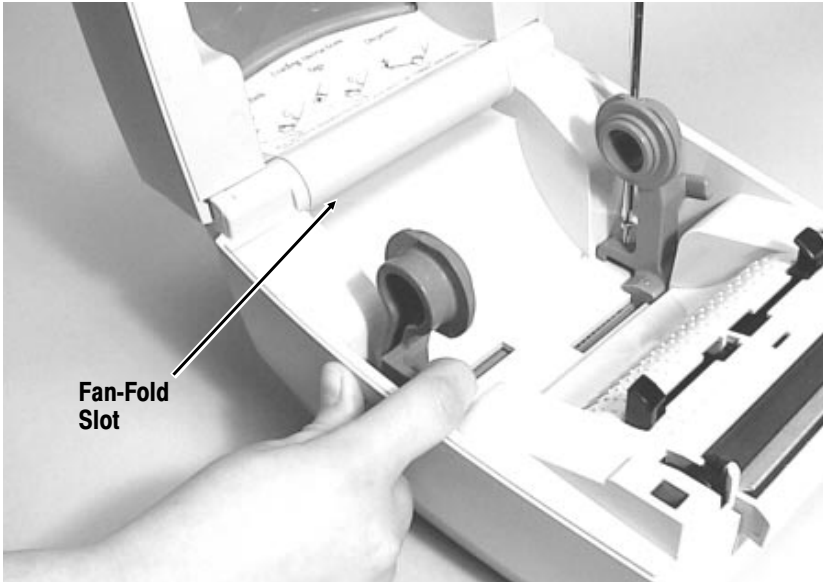
8. Press the supply under the supply guides and adjust the supply guides so they just touch the edges of the backing paper.

9. Close the cover until the cover locks in place.

10. Press the FEED button to advance the supply. The indicator light should be GREEN.

CARE & MAINTENANCE   3

This chapter tells you how to

◆ clear label jams.

◆ clean the printhead.

Clearing Label Jams

When you are printing and a jam occurs, the indicator light turns ORANGE.

To clear the jam:

1. Turn the printer off.

2. Press the cover release buttons (on both sides of the printer) towards the front of the printer. Lift open the cover.

3. If necessary, remove any supply that has been previously loaded by pushing out the supply holder tabs. The supply should lift out of the printer.

4. Remove the jammed labels.

5. Reload the supply. See Chapter 2, "Loading Supplies."

6. Close the cover until the cover locks in place.

7. Press the FEED button to clear the error. The indicator light should turn GREEN.

Cleaning the Printhead

Clean the printhead every time you load a new label roll into the printer.

1. Turn the printer off.

2. Press the cover release buttons (on both sides of the printer) towards the front of the printer. Lift open the cover.

3. Gently rub the cleaning pen across the printhead.

4. Allow the printhead to dry for 1 minute before closing cover and resume printing.

T R O U B L E S H O O T I N G   A

Problem	Action
Indicator light is off when the printer is turned on.	Check the power connections from the power supply to printer and AC outlet. See Chapter 1, "Connecting the Power Supply."
Indicator light is GREEN, but the printer will not print.	Check the interface cable connections from the computer to printer. See Chapter 1, "Connecting the Communication Cable."
	Verify that the labels are the correct type (thermal direct not thermal transfer) and supply is loaded correctly. See Chapter 2, "Loading Supplies."
	Clean the printhead. See Chapter 3, "Cleaning the Printhead."
	Make sure cover is closed.
Printing is faded or poor quality.	Verify that the labels are the correct type (thermal direct not thermal transfer) and supply is loaded correctly. See Chapter 2, "Loading Supplies."
	Clean the printhead with a cleaning pen. See Chapter 3, "Cleaning the Printhead."
	Adjust the print speed/darkness. Refer to the *Programmer's Manual*.
Label exits partially out the printer or skips a label.	A label might be caught in the printer. See Chapter 3, "Clearing Label Jams."
	Load the supply correctly. See Chapter 2, "Loading Supplies."
	Check printer's memory configuration. Refer to the *Programmer's Manual*.

Problem	Action
Printing stops and indicator light turns ORANGE.	Adjust the label gap sensor. **1.** Turn the printer off. **2.** Load labels for non-peel mode. See Chapter 2, "Loading Labels or Tags." **3.** Press and hold the FEED button while turning the printer on. **4.** Release the FEED button when the indicator light starts flashing red. Several labels advance including the status label. **5.** Press the FEED button.
	Problem with the supply. Load different supply.
	Clear a label jam.
	Software problem. Check the printer's memory configuration. Refer to the *Programmer's Manual*.
The printer does not detect the gap between each label.	Adjust the label gap sensor. **1.** Turn the printer off. **2.** Load labels for non-peel mode. See Chapter 2, "Loading Labels or Tags." **3.** Press and hold the FEED button while turning the printer on. **4.** Release the FEED button when the printer starts advancing lines. Several labels advance including two Diagnostic labels. **5.** Press the FEED button.

S P E C I F I C A T I O N S &
A C C E S S O R I E S

B

P r i n t e r   S p e c i f i c a t i o n s

Height: 6.6" (167 mm)

Width: 6.7" (170 mm)

Depth: 8.5" (216 mm)

Weight: 3 lbs. (1.4 kg) without power supply
                         6 lbs. (2.7 kg) with power supply

Shipping Weight: 11.91 lb. (5.40 kg)

Power: U.S. - 120 VAC ± 10%, 60Hz
                         International - 220 VAC ± 10%,
                         50Hz

Operating Limits: Operating Thermal Direct
                         40° to 105° F (5° to 40° C)

                         Storage -40° to 140° F
                         (-40° to 60° C)

Printhead: 4.09" (104 mm)
                         203 dpi (8.0 dots per mm)

Printing Method: Thermal Direct

Supply Types: Labels, tags or receipt paper

Supply Widths: 1" (25.4 mm) minimum
                         4.25" (108 mm) maximum

Supply Lengths: .38" (9.7 mm) minimum
                         6.0" (152 mm) maximum

Printer Accessories

Use these part numbers when ordering parts. Call
Monarch at 1-800-543-6650 to order.

| Description	Part Number
Parallel Interface Cable, 6'	300016-006
Interface Cable, 10'	300016-010
Interface Cable, 6' (DB-9 to DB-9)	300017-006
Interface Cable, 10' (DB-9 to DB-9)	300017-010
Interface Cable, 6' (DB-25 to DB-9)	300018-006

SENSING THE SUPPLIES C

This chapter describes how to set your printer to use the sensors to find the top of each label.

The sensors are:

◆ Gap Sensor - finds the top of each label by sensing the space between labels on the backing paper.

◆ Black Mark - finds the top of each label by sensing a "black line" or a black mark on the backing paper.

To change your printer from gap sensor to blackmark:

1. Measure in millimeters the distance between black marks. Write down this value for p_1.

2. Measure the thickness of the black mark. Write down this value for p_2.

3. Measure the distance between black mark and the perforation. Write down this value for p_3.

Black Mark

Perforation

p_1

p_2

p_3
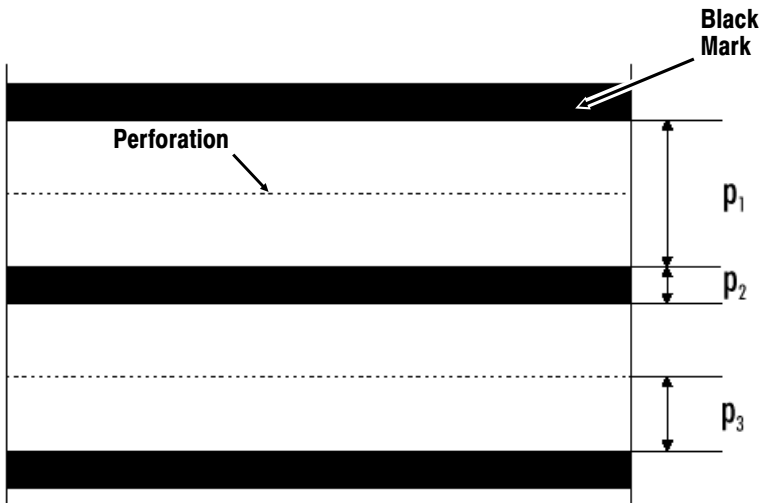
4. Convert the values to dots by multiplying the millimeters by 8.

For example:
p_1=31.0mm x 8 = 248 dots
p_2=7.00mm x 8 = 56 dots
p_3=0.5mm x 8 = 4 dots

The EPL2 language consist of commands. The **Q** Command sets the form length using the p_1, p_2 and p_3 values.
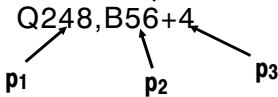
5. Open any text editor and open your format. Look for the line that starts with Q (**Q** Command).

6. Type in the dot values for p_1, p_2 and p_3.

Values can have a negative value depending on placement of the perforation.

For example:
Q248,B56+4

p_1 p_2 p_3

The "B" indicates black mark. This is needed when using the black mark sensor.

---

7. Save file. Send format to your printer.

For more information, refer to the programmer's manual. The online version of the programmer's manual can be downloaded off of Monarch's Web Site **(www.monarch.com/service/service_front.htm)** as an Adobe Acrobat file.

To change your printer from blackmark to gap sensor:

1. Measure in millimeters length of the label. Write down this value for p_1.

2. Measure the space between labels. Write down this value for p_2.
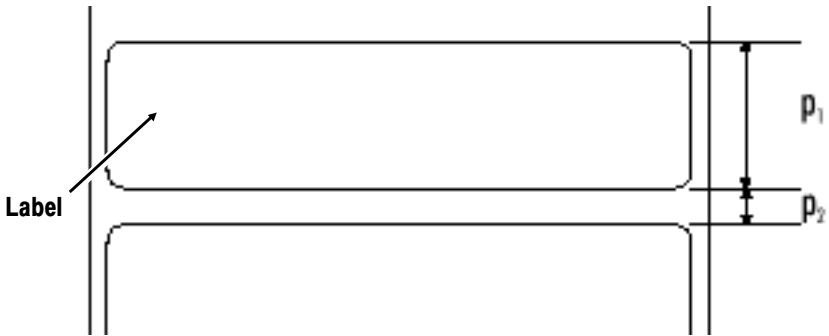
3. Convert the values to dots by multiplying the millimeters by 8.

   For example:
   p_1=20.0mm x 8 = 160 dots
   p_2=3.0mm x 8 = 24 dots

   The EPL2 language consist of commands. The **Q** Command sets the form length using the p_1, p_2 and p_3 values.

   To set the **Q** command:

4. Open any text editor and open your format. Look for the line that starts with Q (**Q** Command).

5. Type in the dot values for p_1 and p_2.

   For example:
   Q160,24

6. Save file. Send format to your printer.

If an error occurs while printing, see Chapter A, "Troubleshooting" for more information on adjusting the gap sensor.

For more information, refer to the programmer's manual. The online version of the programmer's manual can be downloaded off of Monarch's Web Site **(www.monarch.com/service/service_front.htm)** as an Adobe Acrobat file.

Monarch® Barcode Product Limited Warranty

Thank you for purchasing a Monarch® barcode product. Monarch warrants that your product will be free from defects in material and workmanship for a period of one (1) year from the date of shipment by Monarch. Please read this warranty very carefully. THIS WARRANTY IS A LIMITED WARRANTY AND IS IN LIEU OF AND EXCLUDES ALL OTHER WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THREE (3) YEAR EXTENDED WARRANTIES ARE AVAILABLE AND CAN BE QUOTED AT THE TIME OF PRINTER PURCHASE.

Warranty Period - The limited warranty starts on the day the product is shipped from Monarch and ends after a period of one (1) year or when the product's life has been exceeded, whichever occurs first.

Parts and Labor - Monarch will provide new or remanufactured parts and labor, free of charge, to correct defects in material and workmanship for the product(s) covered by the limited warranty during the warranty period. This limited warranty is a depot warranty only.

Shipping - The customer is responsible for inbound transportation charges and Monarch is responsible for return transportation charges (via ground) to correct defects in material and workmanship during the limited warranty period.

Packaging - Products returned shall be packaged in the original packaging and shipping container or comparable container. In the event the product is not packaged properly or if shipping damage is evident, Monarch will not accept the printer for service under warranty. Products received in unsuitable containers will be returned in Monarch-approved packaging at the customer's expense.

Thermal Printhead Warranty - The thermal printhead is covered by a prorated limited warranty of six (6) months or one million (1,000,000) inches of use, whichever occurs first. Physical damage to the printhead is not covered by the limited warranty.

Consumables - The product limited warranty does not include or cover consumables or sundry items such as ribbons, tags, labels, knives or thermal printheads (see above thermal printhead warranty).

Use of Supplies - Only genuine Monarch® supplies are recommended for use in Monarch products. This limited warranty does not cover service required as a result of the use of non- Monarch supplies. Host Communication - Service required to develop or correct on-line host communications, including the use of non-Monarch communications cables, is not covered by the product warranty.

Operating Instructions - Proper operation of the product requires the user to read and follow the operating instructions. The limited warranty does not cover service that is required as a result of operator error and or failure to read and follow the documentation included with the product.

Installation and Training - Installation and training of the operators is a professional service that is available on a time and material basis. Installation and training is not covered by the limited warranty.

Exclusions - This limited warranty covers defects in material and workmanship only and does not cover damage caused by accident, abuse, violence, acts of God or use of supplies other than Monarch supplies or supplies not meeting the specifications of Monarch. This limited warranty is valid only in the United States of America. This limited warranty is the only warranty on which the customer can rely. Monarch reserves the right to make changes in the products, programs and their availability at any time and without notice. This warranty is void if the product is altered or repaired by anyone except a Monarch service representative or contrary to the instructions provided by Monarch.

To Initiate a Warranty Claim - The customer must follow the steps below in order to make a warranty claim under the limited warranty: 1. Call **(800) 543-6650** in order to report your problem to our technical support center. 2. A Monarch technical support specialist will work with you to attempt to resolve the problem by telephone. 3. If telephone resolution of your problem is unsuccessful, the technical specialist will issue an incident # for you to return your product prepaid, for warranty repair, subject to the terms of the limited warranty above.

For supplies, service, or assistance call toll free:

1-800-543-6650 (In the U.S.A.)
1-800-263-4650 (In Canada)

www.monarch.com