

# MONARCH® 9416® XL®

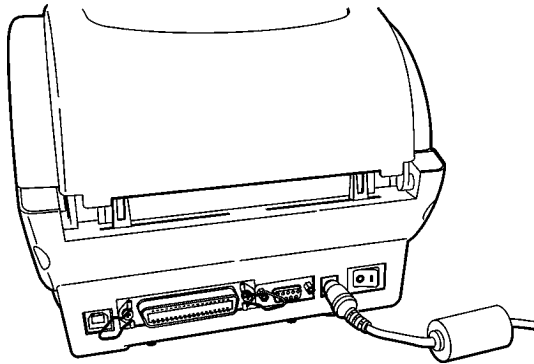
## QUICK REFERENCE

This *Quick Reference* contains ribbon loading, supply loading, and general care, maintenance, and troubleshooting procedures for the 9416® XL® Thermal Direct and 9416® XL® Thermal Transfer printers. For more detailed information, refer to the *Equipment Manual* on our Web site ([www.monarch.com](http://www.monarch.com)).

### Connecting the Power Supply

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1. Turn off the printer. Press the switch on the back of the printer to the OFF position (O).
2. Plug the three-hole end of the AC adapter cable into the three-pronged outlet in the power supply.
3. Plug the round end of the power supply cable (labeled “printer”) into the socket at the back of the printer.



4. Plug the three-pronged end of the AC adapter cable into a grounded electrical outlet.

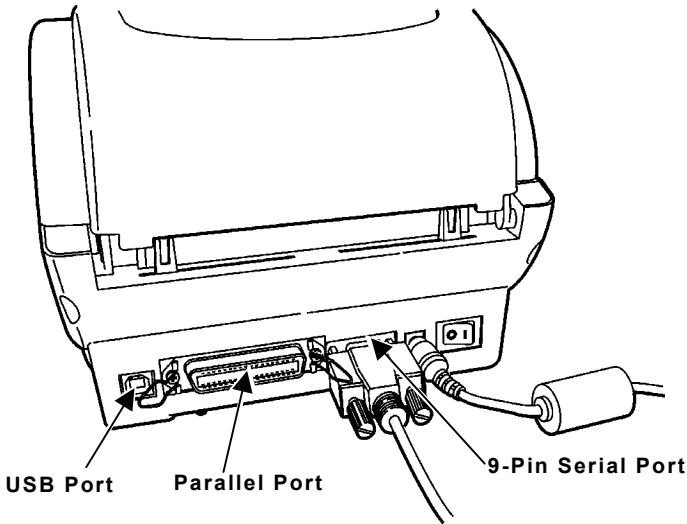
**Warning:** The printer and power supply should never be operated in a location where either one can get wet. Personal injury could result.



## Connecting the Communication Cable

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1. Turn off the printer before connecting the cable.
2. On the back of the printer, connect the communication cable to the serial port (for serial communication) or to the parallel port (for parallel communication).



3. Secure the cable with the connecting screws (serial connection) or with the spring clips (parallel connection).

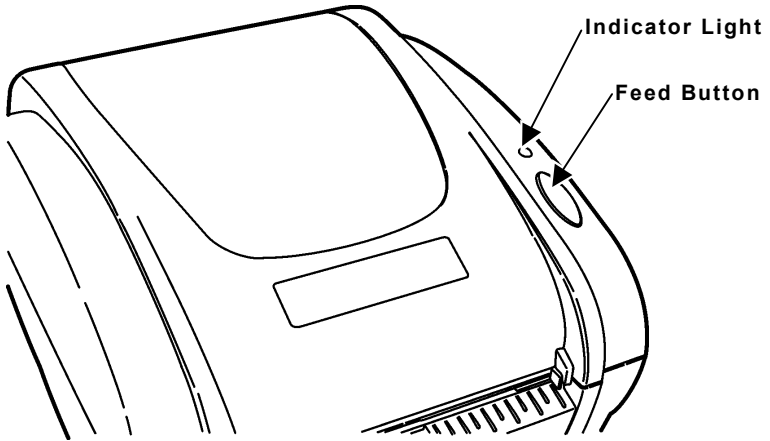
If you are communicating through the serial port, make sure the printer's communication values match those at the host.

The factory defaults are 9600 baud, no parity, 8-bit data frame, 1 stop bit, and DTR flow control (9600, N, 8, 1, DTR).

The printer also has a USB (Universal Serial Bus) version 2.0 communication port.

# Reading the Indicator Light

The indicator light monitors the printer's status.



Indicator Light	Description
GREEN	Printer is on and ready to use.
FLASHING GREEN	Printer is paused. Press the <b>FEED</b> button to resume printing.
FLASHING RED	Printer error condition. See "Troubleshooting," for error conditions and solutions.
ORANGE	The system is detecting the supply and ribbon status (if applicable).
No light	Printer is off. Make sure the power supply is connected properly.

# Loading a Ribbon

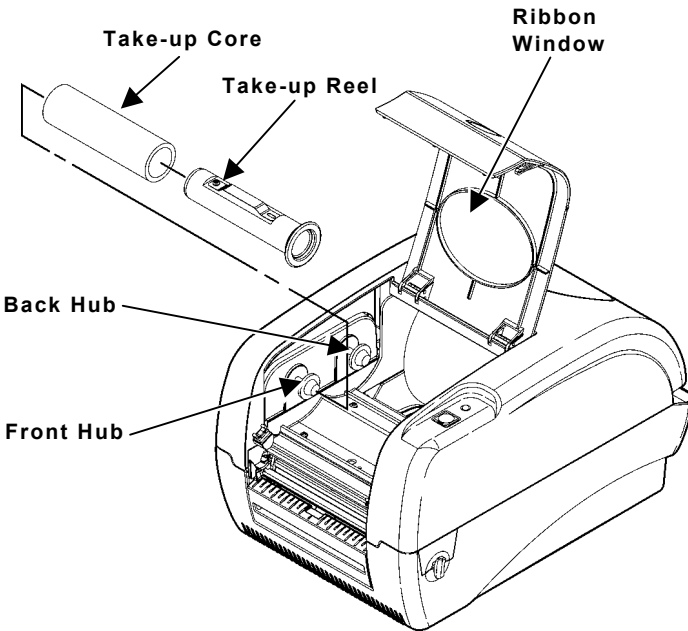
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Use a ribbon when printing on thermal transfer supplies.

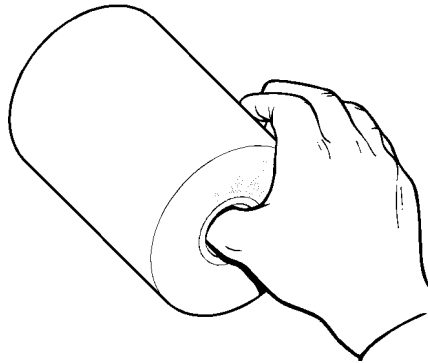
The 9416® thermal transfer printer automatically detects if a ribbon is installed when you turn on the printer and switches to thermal transfer printing mode.

**Note:** Make sure the ribbon window and the supply door are closed when you turn on the printer.

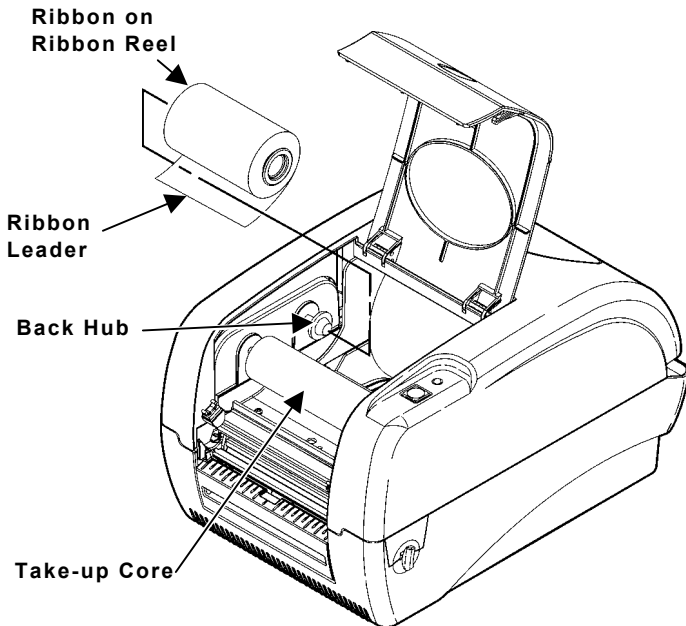
1. Push down on the ribbon window to unlock it and raise the window.
2. The ribbon take-up core should already be on the take-up reel. Attach the take-up core to the front hub, as shown.



3. Open a package of new ribbon, taking care not to wrinkle or crush the ribbon.

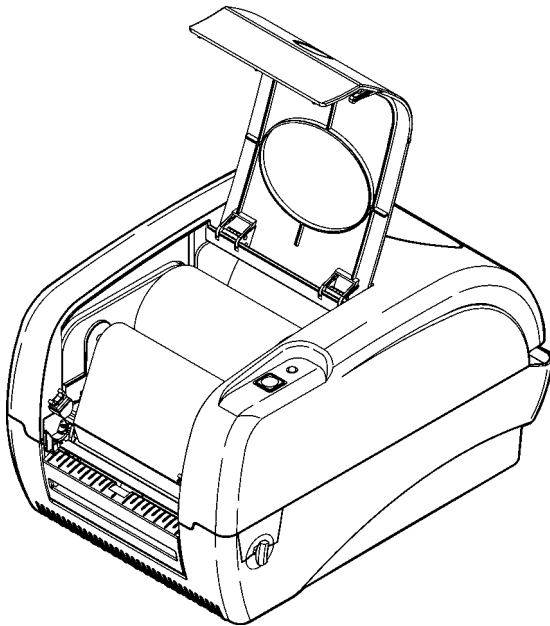


4. Slide the ribbon onto the ribbon reel as far as it will go.



5. Attach the ribbon reel to the back hub.
6. Peel and carefully unwind a few inches of ribbon from the bottom of the roll.
7. Press the release levers towards the front of the printer to release the supply door.

8. Lift open the supply door. The supply door support at the right-hand rear of the printer holds the supply door open.
9. Feed the end of the ribbon under the printhead and around the take-up core.
10. Stick the leading edge of the ribbon onto the take-up core.
11. Rotate the take-up core until the ribbon leader is firmly wrapped around the take-up core and the black portion of the ribbon is exposed.
12. Close the supply door by lifting the supply door slightly and pulling the bottom of the supply door support forward towards the front of the printer. Close the supply door slowly and make sure it latches securely.



**Note:** If you do not latch the supply door completely, poor print quality may result.

13. Press the ribbon window down firmly until it locks into place.

## Loading Supply for Non-Peel Mode

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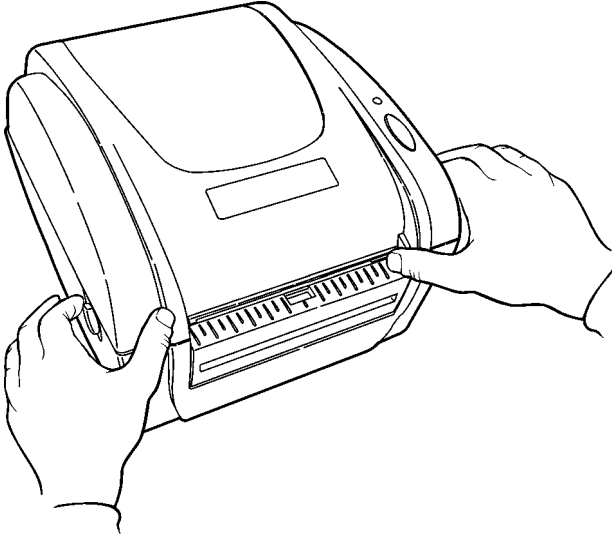
This section describes how to load supply to print in non-peel (continuous) mode. If you have a thermal direct printer (does not require a ribbon), make sure you load thermal direct supply. If you have a thermal transfer printer (requires a ribbon), make sure you load thermal transfer supply.

Make sure the black mark/die cut sensor is set correctly for your supply type. See “Adjusting the Black Mark/Die Cut Sensor,” for more information.

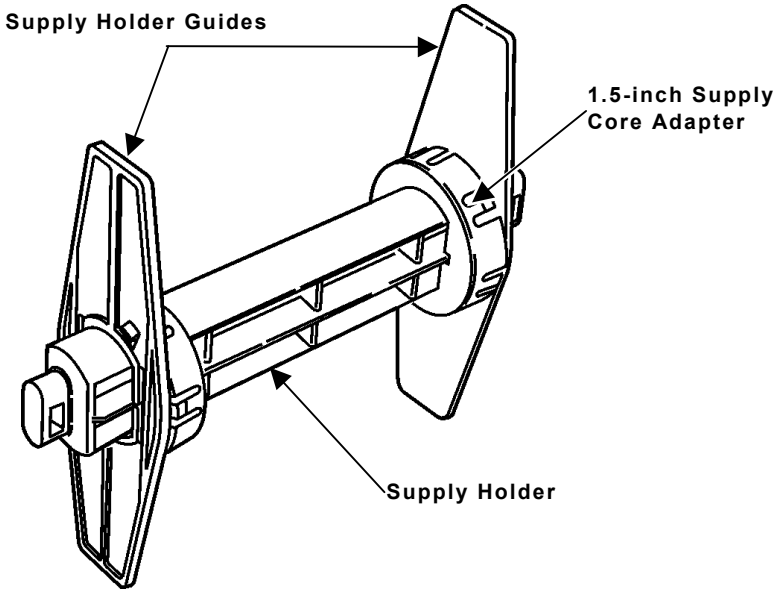
**Note:** If you run out of supply while printing, do not turn off the printer when reloading the supply. You may lose your data. The printer resumes printing when reloaded.

1. Remove and discard the tape from a new roll of supply. Unwrap and discard supply with any glue residue.
2. Press the release levers towards the front of the printer to release the cover or supply door.
3. Lift open the cover or supply door.

*For thermal transfer printers, the supply door support at the right-hand rear of the printer holds the supply door open.*



4. Remove the supply holder guide from one end of the supply holder. (The supply holder is normally attached with a line to the inside of the printer, not free-standing as shown below. Do not cut the line.)



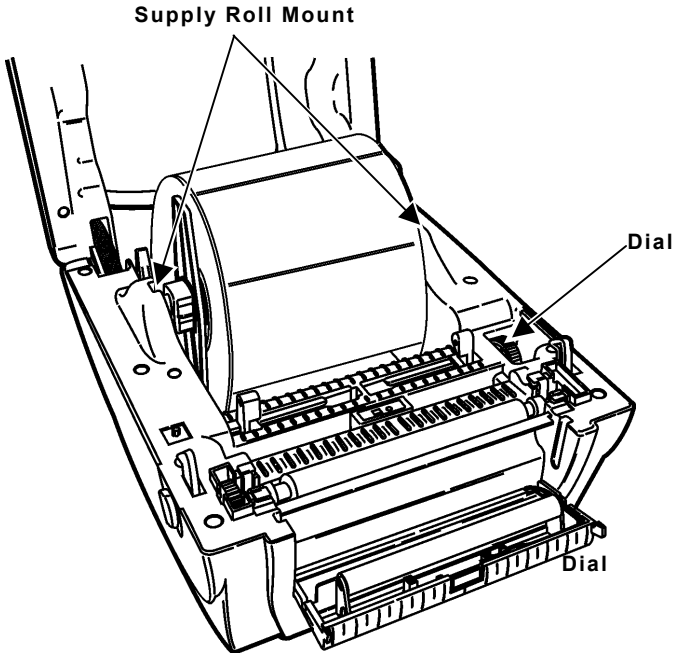
5. Slide a roll of supply onto the supply holder.

**Note:** If the core diameter on your roll of supply is 1 inch in diameter, remove the 1.5-inch supply core adapters from the supply guide holders.

6. Place the supply holder guide back onto the end of the supply holder. If you are using the supply core adapters for 1.5-inch core supply, make sure to push the supply core adapters into the ends of the supply.

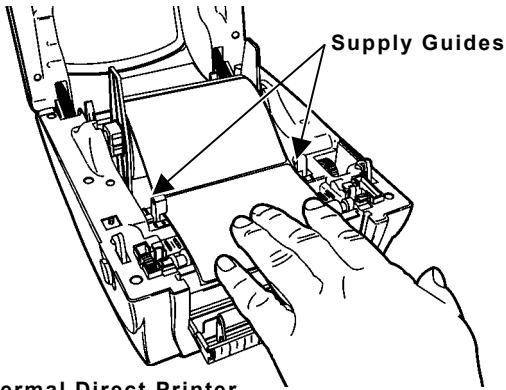


7. Insert the ends of the supply holder into the slots in the supply roll mount.



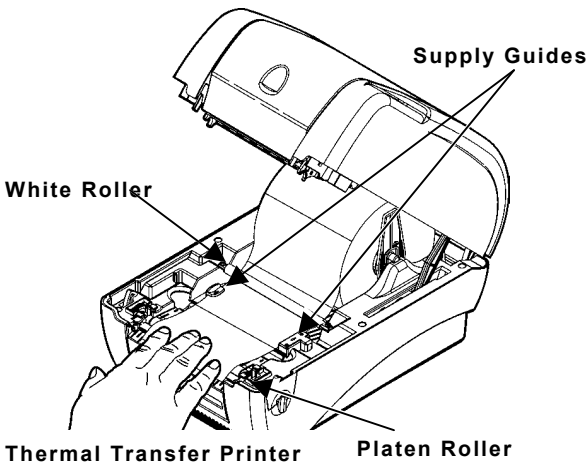
- IMPORTANT:** Make sure the plastic line attaching the supply holder to the printer is tucked down out of the way of the supply holder and supply holder guides. Otherwise, the plastic line may wrap around the supply holder or get caught on the supply holder guides.
8. Adjust the supply guides to their widest position.

9. For thermal direct printers, feed the supply, printing side up, under the supply guides and over the platen roller.



**Thermal Direct Printer**

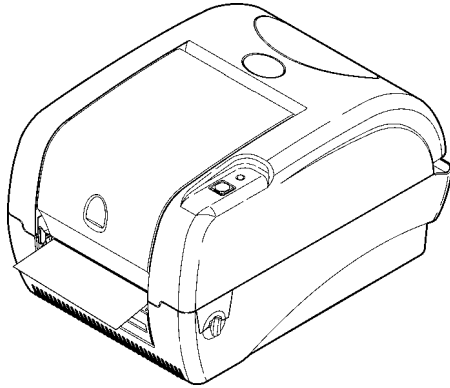
For thermal transfer printers, feed the supply, printing side up, under the white roller, under the supply guides, and over the platen roller.



**Thermal Transfer Printer**      **Platen Roller**

10. Press the supply under the supply guides.
11. Move the supply guides so that they barely touch the edges of the backing paper.

12. Close the cover or supply door until it locks in place.  
*For thermal transfer printers, close the supply door by lifting the supply door slightly and pulling the bottom of the supply door support forward towards the front of the printer. Close the supply door slowly and make sure it latches securely.*



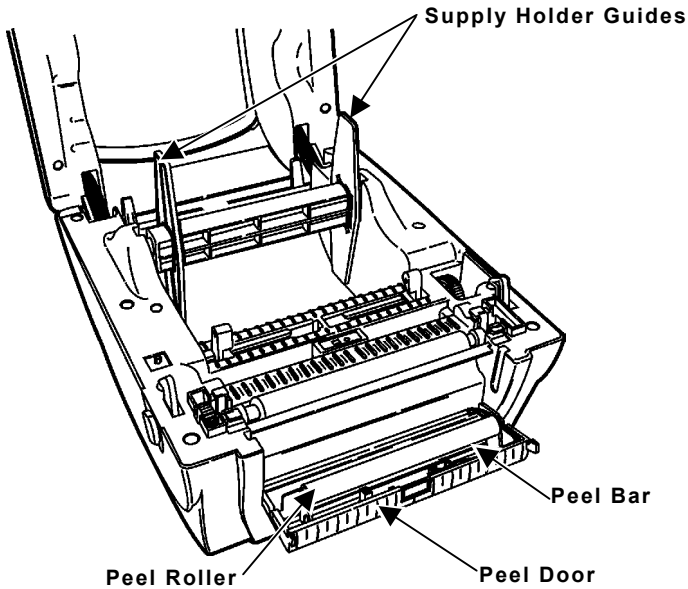
- Note:** If you do not latch the cover or supply door completely, poor print quality may result.
13. Press the **FEED** button. The indicator light should be GREEN.
  14. Calibrate the supply, if necessary. See “Calibrating the Supply,” for more information.

## Loading Labels for Peel Mode

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Peel mode separates the label from the backing paper while printing.

1. Press the release levers towards the front of the printer to release the cover or supply door.
2. Lift open the cover or supply door.  
*For thermal transfer printers, the supply door support at the right-hand rear of the printer holds the supply door open.*
3. Pull out the peel door located on the front of the printer to display the peel roller and the peel bar.

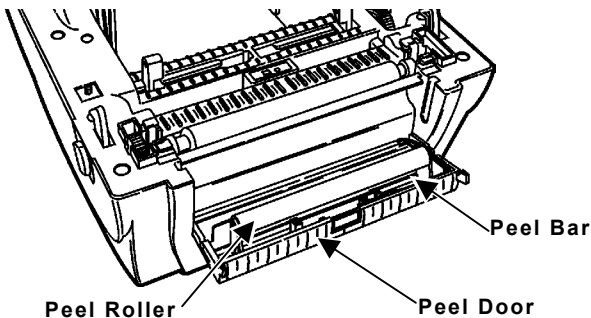


4. Remove the supply holder guide from one end of the supply holder. (The supply holder is normally attached with a line to the inside of the printer. Do not cut the line.)
5. Slide a roll of labels onto the supply holder.
6. Place the supply holder guide back onto the end of the supply holder. If you are using the supply core adapters for 1.5-inch core supply, make sure to push the supply core adapters into the ends of the supply.

7. Insert the ends of the supply holder into the slots in the supply roll mount.

**IMPORTANT:** Make sure the plastic line attaching the supply holder to the printer is tucked down out of the way of the supply holder and supply holder guides. Otherwise, the plastic line may wrap around the supply holder or get caught on the supply holder guides.

8. Adjust the supply guides to their widest position.
9. Remove the first two labels from the backing paper.
10. *For thermal direct printers*, feed the labels, printing side up, under the supply guides and over the platen roller.  
*For thermal transfer printers*, feed the labels, printing side up, under the white roller, under the supply guides, and over the platen roller.
11. Press the labels under the supply guides.
12. Move the supply guides so that they barely touch the edges of the backing paper.
13. Feed the backing paper under the peel roller and through the peel door opening.

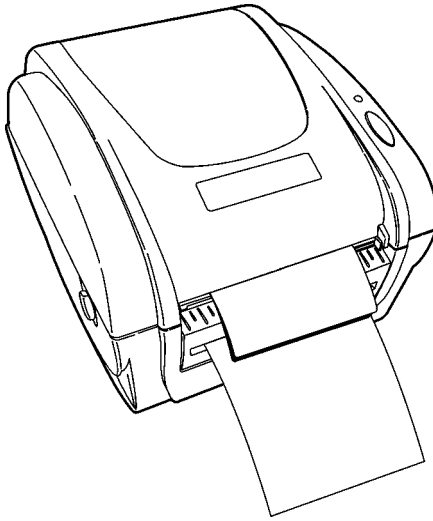


14. Push the peel door closed and close the cover or supply door until it locks in place.

*For thermal transfer printers*, close the supply door by lifting the supply door slightly and pulling the bottom of the supply door support forward towards the front of the printer. Close the supply door slowly and make sure it latches securely.

**Note:** If you do not latch the cover or supply door completely, poor print quality may result.

15. Press the **FEED** button. A label separates from the backing paper. Remove the peeled label and another label prints.



**Note:** Hold the leading edge of peeled labels when printing on supply longer than six inches.

16. Calibrate the supply, if necessary. See “Calibrating the Supply,” for more information.

## Calibrating the Supply

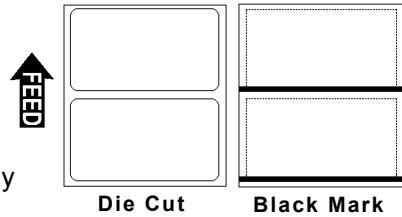
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1. Turn off the printer.
2. Press and hold the **FEED** button while turning on the printer.
3. *To calibrate the supply*, release the **FEED** button after the indicator light starts flashing **ORANGE**. The printer calibrates the black mark or die cut sensor, measures the label length, and prints the test labels.  
*To calibrate the ribbon (thermal transfer printers only)*, release the **FEED** button after the indicator light starts flashing **RED**. The printer calibrates the ribbon sensor.
4. To resume normal printing, turn off the printer, wait two seconds, then turn it back on again.

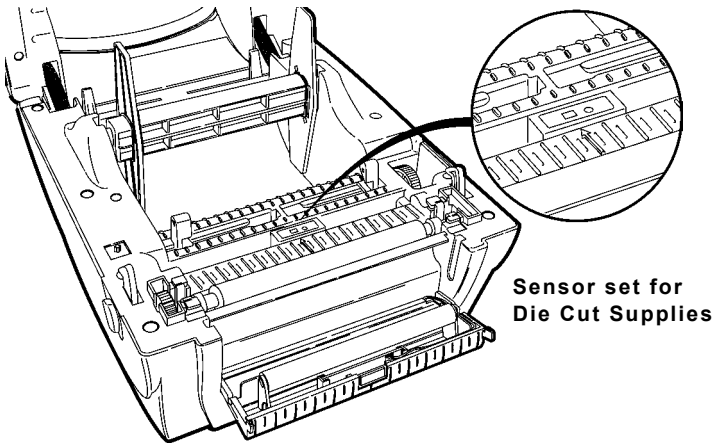
## Adjusting the Black Mark/Die Cut Sensor

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The printer has a black mark/die cut sensor, which it uses to sense and properly calibrate supplies. Black mark supply has sense marks (black marks) on the back of them. Die cut supply does not have any black marks.



For die cut supplies, make sure the sensor is in the detented position and the middle of the square lens lines up with the arrow inside the printer.



For black mark supplies, if necessary, move the sensor to the left or right, depending on where the black marks are on the supplies. The black marks on the supply should cover the square lens inside the sensor.

## Printing

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Before you print, make sure the printer is connected to the host with a communication cable. The communication values at the printer must match those at the host.

The printer's default communication values are 9600 Baud, no parity, 8-bit data frame, 1 stop bit, and DTR flow control (9600, N, 8, 1, DTR).

1. Turn on the printer.
2. Download a format and a batch. Refer to the *Packet Reference Manual* for information on downloading print jobs. The printer prints the labels, either in peel mode or in non-peel mode.
3. Remove the printed labels.

## Clearing Supply Jams

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When you are printing and a jam occurs, the indicator light turns RED. To clear the jam:

1. Turn off the printer. Press the switch on the back of the printer to the OFF position (O).
2. Press the release levers towards the front of the printer to release the cover or supply door.
3. Lift open the cover or supply door.  
*For thermal transfer printers, the supply door support at the right-hand rear of the printer holds the supply door open.*
4. If necessary, remove any previously loaded supply. Lift up the supply holder and remove one of the supply holder guides.
5. Slide the supply off the holder.
6. Remove the jammed supply.

**Caution:** Do not use sharp or pointed objects to remove labels, or damage to the printhead may occur.

7. Reload the supply.
8. Close the cover or supply door until it locks in place.  
*For thermal transfer printers, close the supply door by lifting the supply door slightly and pulling the bottom of the supply door support forward towards the front of the printer. Close the supply door slowly and make sure it latches securely.*

**Note:** If you do not latch the cover or supply door completely, poor print quality may result.

9. Press the **FEED** button to clear the error. The indicator light should be GREEN.



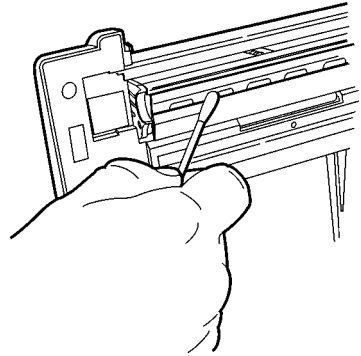
# Cleaning

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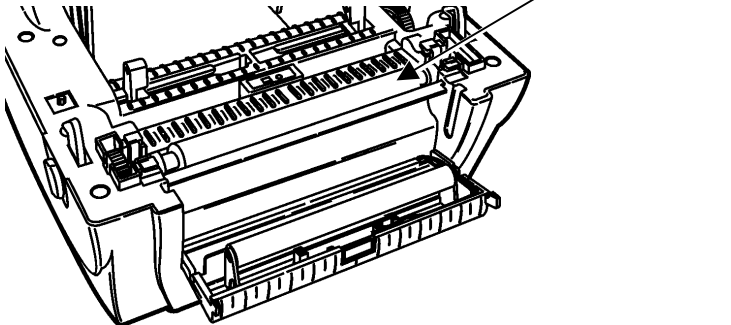
Clean the printhead whenever you notice a decline in print quality, or after using three rolls of supply.

**Note:** You must turn off the printer's power before cleaning the printhead. If you need to clean the printhead during a print job, you may lose your data when you turn off the printer.

1. Turn off the printer. Press the switch on the back of the printer to the OFF position (O).
2. Press the release levers towards the front of the printer to release the cover or supply door.
3. Lift open the cover or supply door.
4. Moisten a cotton swab with isopropyl alcohol.
5. Rub the cotton swab across the printhead to remove any build-up.
6. Moisten another cotton swab with isopropyl alcohol and run the cotton swab across the platen roller.
7. Turn the platen roller with your finger and make sure it is clean all the way around.



**Note:** Do not remove the platen roller.



8. Allow the printhead and platen roller to dry for one minute before you close the cover or supply door and resume printing.  
*For thermal transfer printers, close the supply door by lifting the supply door slightly and pulling the bottom of the supply door support forward towards the front of the printer. Close the supply door slowly and make sure it latches securely.*
- Note:** If you do not latch the cover or supply door completely, poor print quality may result.
9. If necessary, lightly dampen a cloth with water and wipe the exterior surfaces clean. Use a dry, soft-bristled brush to clean paper dust out of the printer's interior.

## Troubleshooting

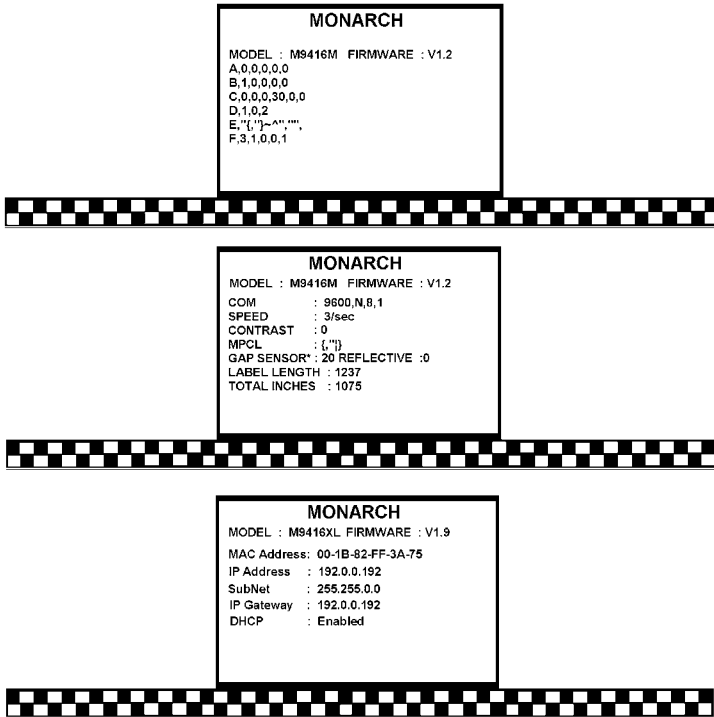
Problem	Action
Indicator light is off when the printer is turned on.	Check the power connections from the power supply to the printer and the AC outlet. See "Connecting the Power Supply," for more information.
Indicator light is GREEN, but the printer will not print.	Check the cable connections from the host to the printer.
	Make sure the supply is loaded correctly.
	Clean the printhead.
	Make sure the cover or supply door is closed completely.
Printing stops and indicator light turns RED. Or, Printing is not lined up correctly on supply.	Calibrate the supply. See "Calibrating the Supply," for more information.
	Problem with the supply. Load different supply.
	Make sure the ribbon is not empty (thermal transfer printers only).
	Make sure the black mark/die cut sensor is set correctly for your supply type. See "Adjusting the Black Mark/Die Cut Sensor," for more information.
	Clear a label jam.

<b>Problem</b>	<b>Action</b>
Printing is faded or poor quality.	Make sure the supply is loaded correctly. See “Loading Supplies,” for more information.
	Clean the printhead.
	Check the supplies and ribbon (thermal transfer printers) for damage or defects. Reload supplies or ribbon if necessary.
	Adjust the print speed/darkness (contrast). Refer to the <i>Packet Reference Manual</i> for more information.
Supply exits partially out of the printer or skips.	Supply might be caught in the printer.
	Make sure the supply and ribbon (thermal transfer printers) are loaded correctly.
	For thermal transfer printing, make sure thermal transfer supply (requires a ribbon) is loaded. For thermal direct printing make sure thermal direct supply (does not require a ribbon) is loaded.
Ribbon is installed but is not advancing when printing (thermal transfer printers).	Calibrate the ribbon sensor. See “Calibrating the Supply” for more information.

# Printing Test Labels

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1. Turn off the printer.
2. Press and hold the **FEED** button while turning on the printer.
3. Release the **FEED** button after the printer starts flashing **ORANGE**. The test labels print.



The first label shows the printer's configuration by packet (A-F). Refer to the *Packet Reference Manual* available on our Web site for more information.

The second label shows the model number, software version, communication settings, speed, contrast, gap sensor (die cut sensor) setting, label length, and total number of inches printed.

The third label shows network parameters when the printer is connected to the network. When the printer is not connected, zeros print instead of parameters.

4. To resume normal printing, turn off the printer, wait two seconds, then turn it back on again.

## Thermal Direct Printer Specifications

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<b>Height:</b>	6.6" (168 mm)
<b>Width:</b>	8.3" (211 mm)
<b>Depth:</b>	9.4" (239 mm)
<b>Weight:</b>	4.1 lbs. (1.9 kg) without power supply
<b>Shipping Weight:</b>	9 lb. (4 kg)
<b>Power:</b>	U.S.: 120 VAC $\pm$ 10%, 60Hz International: 220 VAC $\pm$ 10%, 50Hz
<b>Operating Limits:</b>	Operating Thermal Direct: 40° to 105° F (4° to 40° C) Storage: 40° to 140° F (4° to 60° C) Relative Humidity: 5% to 90% (non-condensing)
<b>Printhead:</b>	4.09" (104 mm) 203 dpi (8.0 dots per mm)
<b>Printing Method:</b>	Thermal Direct

## Thermal Transfer Printer Specifications

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<b>Height:</b>	7.4" (188 mm)
<b>Width:</b>	8.4" (213 mm)
<b>Depth:</b>	12.4" (315 mm)
<b>Weight:</b>	6.3 lbs. (2.9 kg) without power supply
<b>Shipping Weight:</b>	12 lbs. (5.4 kg)
<b>Power:</b>	AC Input 100-240V 50-60Hz, DC Output 18-24V
<b>Operating Limits:</b>	40° to 105° F (4° to 40° C) Storage: 40° to 140° F (4° to 60° C) Relative Humidity: 5% - 90% (non-condensing)
<b>Printhead:</b>	4.09" (104 mm), 203 dpi (8.0 dots per mm) 300 dpi (11.82 dots per mm)
<b>Printing Method:</b>	Thermal Direct and Thermal Transfer

## Supply Specifications

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**Supply Types:** Labels, tags or receipt paper

**Supply Widths:** 0.75" (19 mm) minimum  
4.25" (108 mm) maximum

**Supply Lengths:** 0.25" (6.3 mm) minimum  
10.0" (254 mm) maximum

(for peel): 0.75" (19 mm) minimum  
10.0" (254 mm) maximum

**Note:** Hold the leading edge of peeled labels when printing on supply longer than six inches.

## Ribbon Specifications

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**Types:** Standard

**Core Diameter:** Inside: 1.0" (25.4 mm) Outside: 1.5" (38 mm)

**Width:** 1.6" (41 mm) minimum  
4.3" (109 mm) maximum

**Length:** 300 meters