

Apple

Dot Matrix Printer



Operator's Guide

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WARNING

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

828-0502

100182



Dot Matrix Printer

Operator's Manual

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In conjunction with

apple computer

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Part 1. The First Step

Congratulations! You have just acquired a new Apple Computer Dot Matrix Printer. This booklet is designed to help you get your printer set up and running through its paces in about thirty minutes.

The first step in this process is to identify the type of Apple Computer System you will be connecting to your new printer. Check the front panel on your computer cabinet. Mark the box which matches your equipment.

- Apple II Series** **Apple III Series**

Special items needed to connect the Dot Matrix Printer to your Apple Computer.

Apple II Series Computer

Apple II Parallel Interface Card
Apple II Printer Connecting Cable

Apple III Series Computer

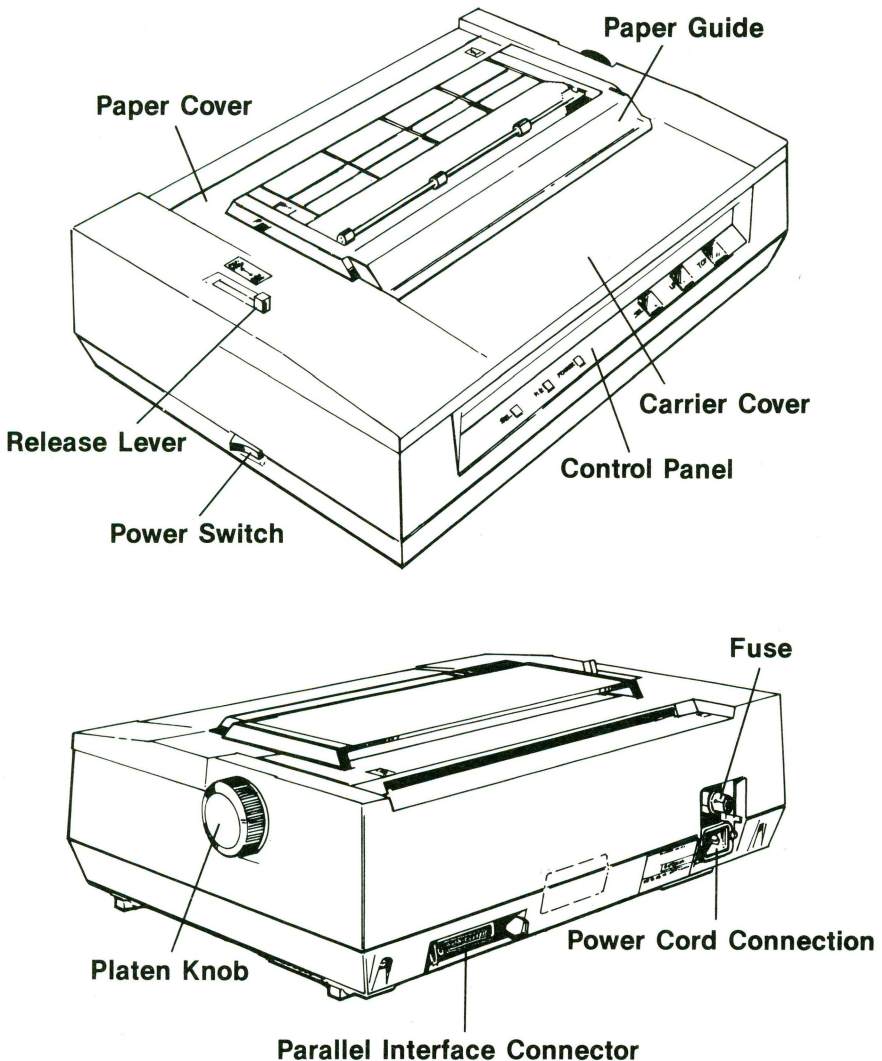
Apple III Universal Parallel Interface Card
Apple III Printer Connecting Cable

You may also want to have on hand some pin-feed, fanfold computer paper. All of these items are readily available from your nearest Apple Computer Dealer.

Finally, you may need a 6," straight slot screwdriver. When you have these parts and tools together, you have completed the first steps, and you are ready to unpack your new printer.

Part 2. What's in a Name?

Before you begin to set up the printer, take a moment to familiarize yourself with its main exterior parts. This short identification tour will also give you an opportunity to check the printer to insure that it has not been damaged in shipment.



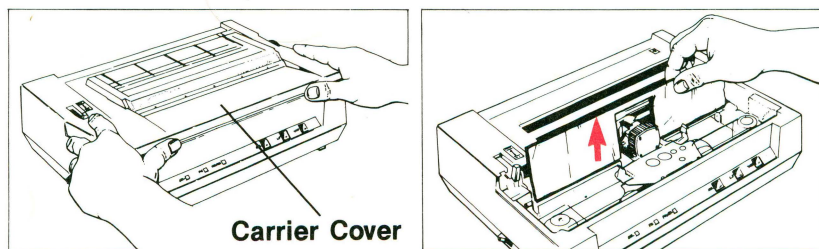
Part 3. Ready...

One of the key features of your new Apple Dot Matrix Printer is that you can set it up before you hook it up to your Apple Computer System. In this section you will learn how to load and replace a printer ribbon. You will also learn how to load and replace paper and to adjust the print head to handle multicopy printing jobs.

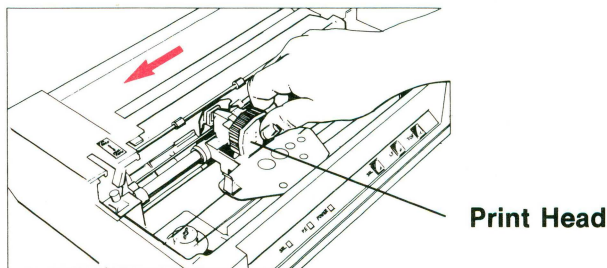
Removing the Print Head Retainer

If you have not already removed the cardboard print head retainer, you must remove it before you proceed to set up your printer. Grasp the printer carrier cover from the front, and gently lift it off the printer.

Remove the cardboard retainer which holds the print head in place.



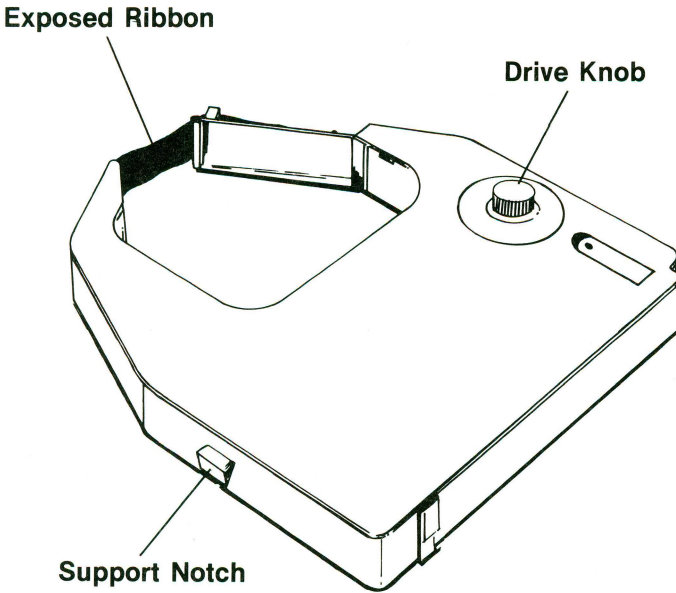
Move the print head to the left, as shown, to insure that it has not been damaged during shipping. The head will normally move with a slight drag and it will make a soft whirring noise as it moves.



Replace the printer carrier cover by snapping it back into position. Your new printer is ready to be set up and tested.

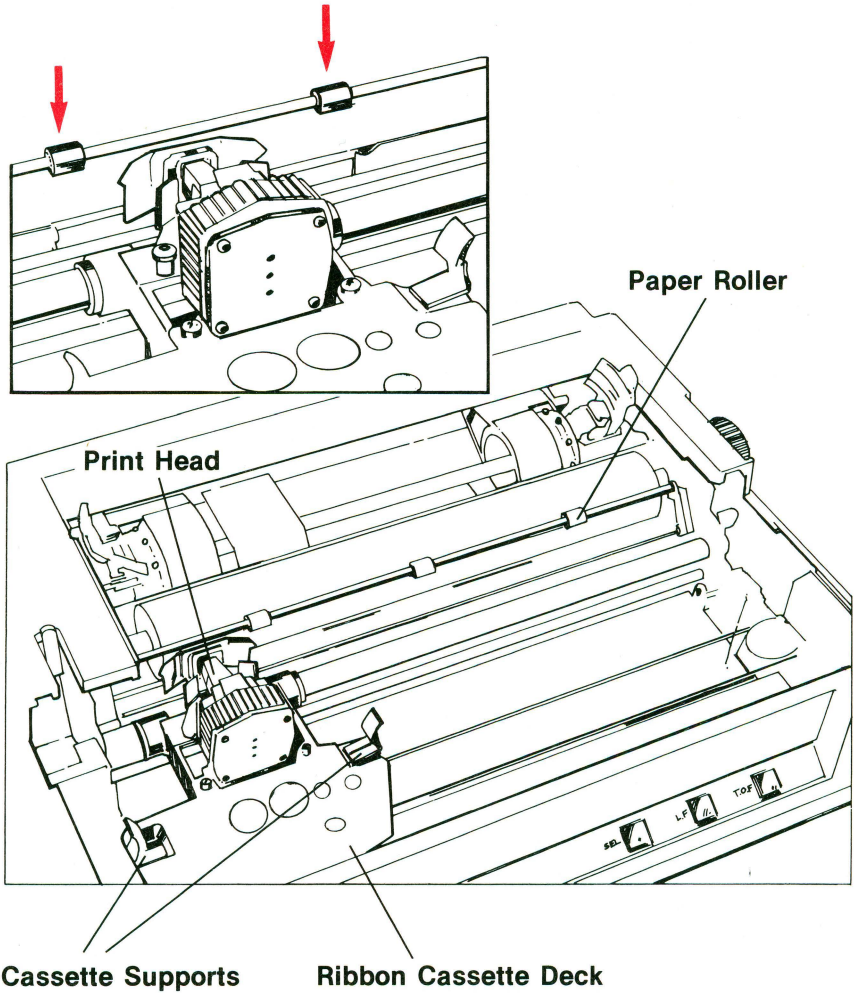
□ Printer Ribbon Loading and Replacement

The Apple Dot Matrix Printer uses a continuous loop, inked fabric ribbon which is carried in a plastic cassette. The design of this ribbon cassette makes ribbon loading and replacement extremely easy.

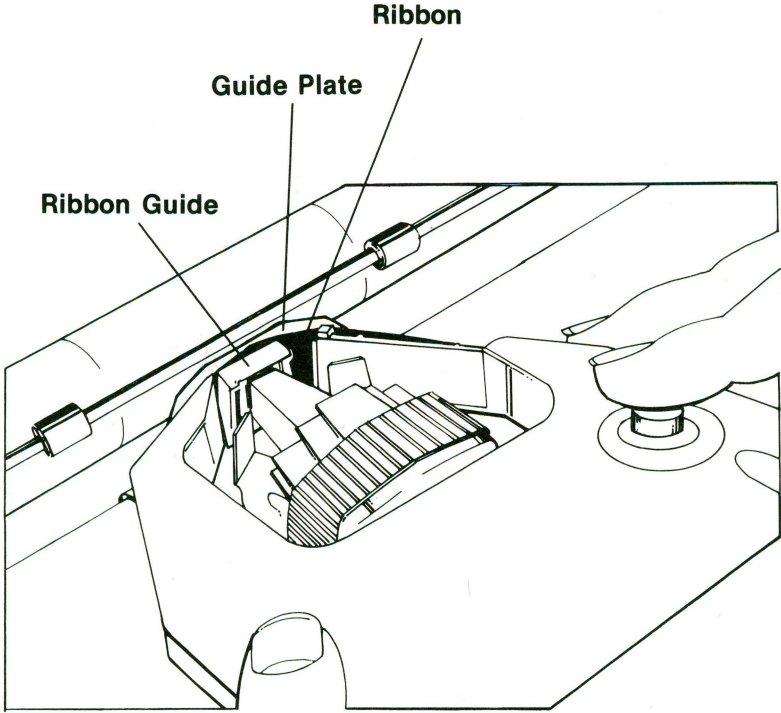


Remove the ribbon cassette from its cellophane wrapper. Turn the cassette drive knob in the direction of the arrow until the exposed ribbon is straight and taut across the cassette ribbon guides.

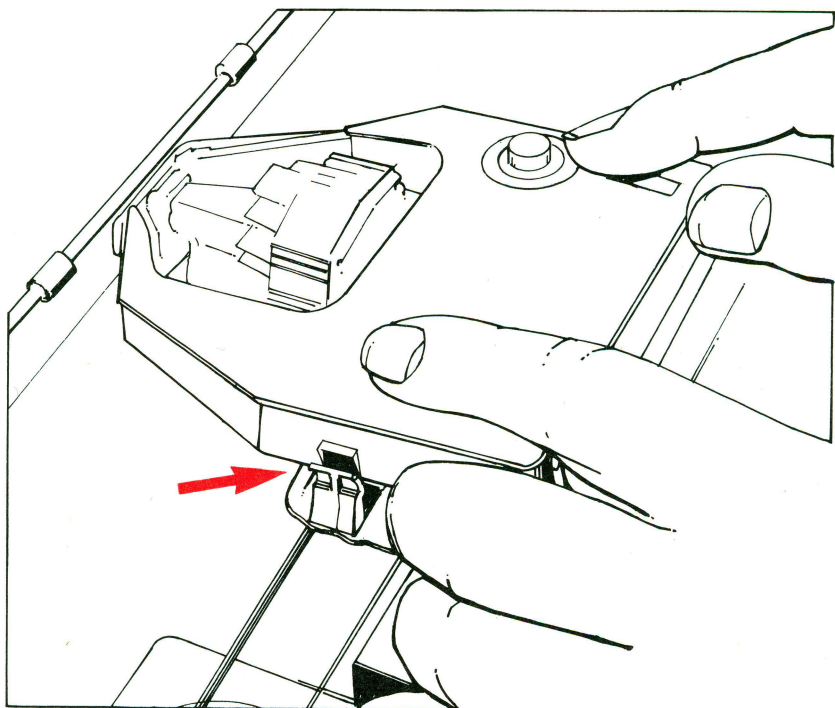
Lift the carrier cover off of the printer and place it to one side. Move the print head (by hand) to a position between two paper rollers, as shown in the illustration. This positioning will greatly assist you in loading the ribbon cassette.



Holding the cassette in both hands and level with the ribbon cassette deck, carefully insert the exposed section of ribbon between the guide plate and ribbon guide. Make sure that the ribbon fits between these two parts.



Using both hands, gently press the cassette down onto the ribbon deck until it snaps into place. Check that the two cassette supports are holding the small notches on the sides of the cassette.



Turn the cassette drive knob clockwise until the ribbon slips completely into place. The drive knob is now engaged with the printer cassette drive gear. It will normally make a clicking noise as you turn it.

If the ribbon cassette does not click into place or does not sit level on the ribbon cassette deck, remove it and repeat these steps.

Removing and replacing a ribbon simply requires that you gently push outward on the two ribbon cassette supports that hold the cassette in place. Once the cassette is released, lift it off the cassette deck, making sure that the small section of exposed ribbon clears the ribbon guide and the paper rollers.

□ Loading Paper

Your Apple Dot Matrix Printer will operate with just about any paper that you wish to use. It is best to use a hard surface bond paper or standard printer paper.

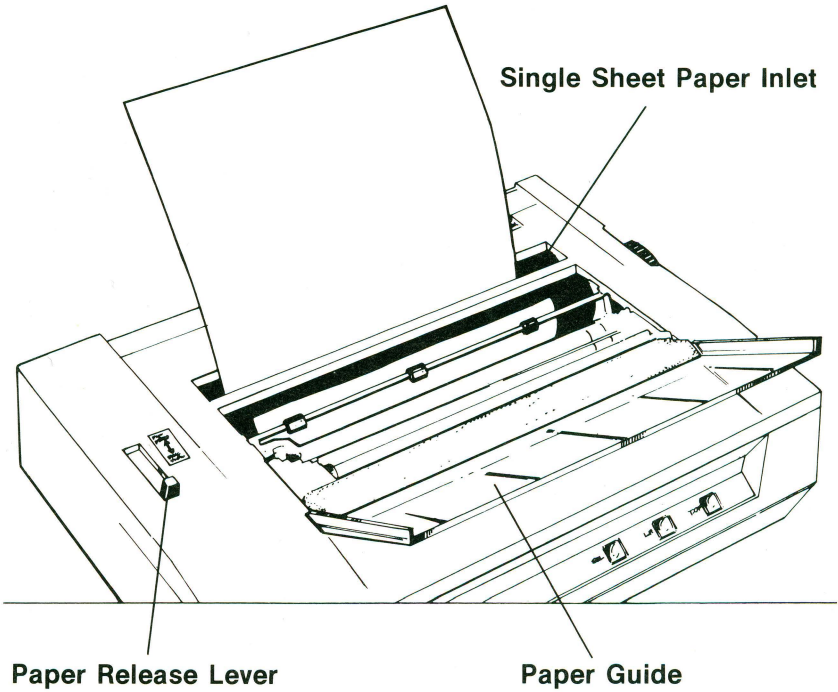
In addition to standard sprocket-driven, pin-feed paper, your new printer will handle single sheets with a friction-driven platen. The friction drive is similar to that on a standard electric typewriter.

Loading Paper—Friction Feed

Begin the friction feed loading process by moving the paper release lever backward to the “pin-feed” position. Pull the clear plastic paper guide toward you to get access to the paper inlet. Move the print head, by hand, all the way to the left. Pull the paper roller shaft away from the platen. Insert a sheet of paper in the paper inlet. Guide the paper downward until it passes under the platen. Move the release lever forward to the “friction” position. Turn the platen knob clockwise, and guide the paper until it clears the roller shaft. You can now align and position the paper as you would on a regular typewriter.

Move the release lever to the “pin-feed” position, and align the paper for the desired margins. Closely examine the roller shaft. Near both ends of the shaft you will notice a small red line. These red lines mark the limits of the print head typing. The lines are used to properly position your paper in the printer for the correct margins. When the paper is positioned to your satisfaction, reset the release lever to the “friction” position.

Reset the paper roller shaft against the paper. Close the clear plastic guide. You can now position the paper vertically for the first line of print by turning the platen knob.

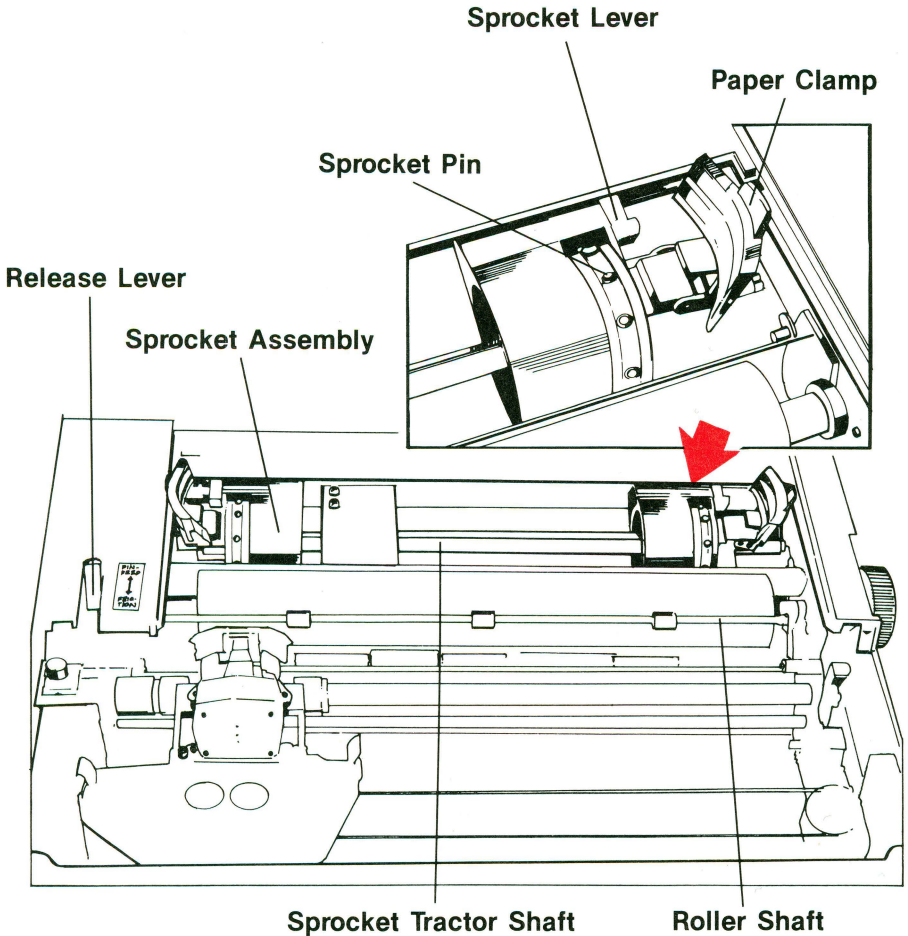


Loading Paper—Pin-Feed

When you are loading pin-feed, fanfold paper, the routine is a little different. Move the release lever forward to the “friction” position. Pull the clear plastic paper guide toward you to get access to the paper inlet. Pull the roller shaft away from the platen.

Remove the paper cover by pulling up on the right side of the cover at the pull arrow sign. Place the cover to one side.

You should now be able to see the entire sprocket tractor area.

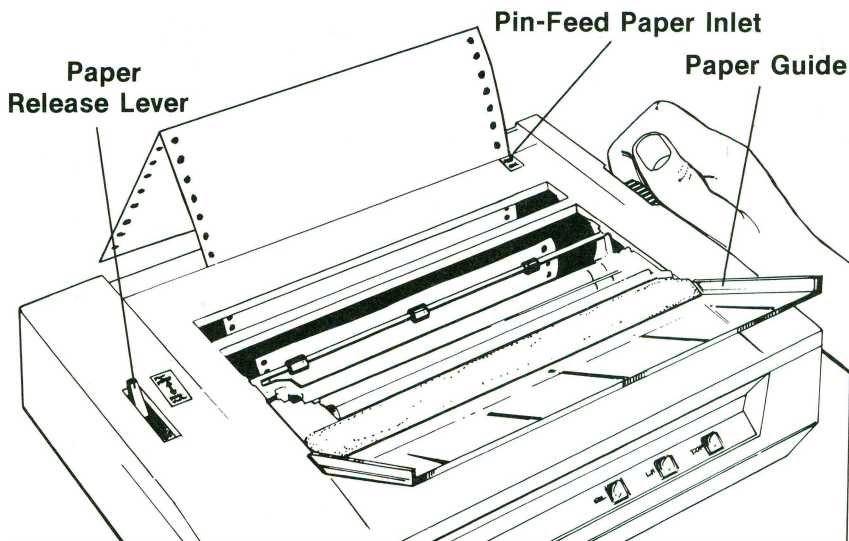


Open the two paper clamps. Fit the sprocket holes on the end of the paper onto the left sprocket pins, and close the paper clamp. Check to insure that the pin holes in the paper have set down over the sprocket pins. Follow these same steps, and load the paper on the right sprocket.

If the paper does not fit smoothly between the two sprockets, you can adjust the sprockets to match your paper width. Push backward on the white sprocket levers at the rear of the sprockets. The sprocket assemblies will now move freely along the sprocket tractor shaft.

Move the two sprocket assemblies, as needed, to match the width of your paper. Position the paper for the desired margins, and reset the white sprocket levers by pressing them forward to the lock position.

When you have the paper loaded and smoothly fitted between the sprockets, turn the platen knob slowly clockwise, and guide the paper by hand to the front of the platen. Press the roller shaft back against the paper. Move the release lever backward to the "pin-feed" position. Place the paper cover over the loaded paper and snap it into position.

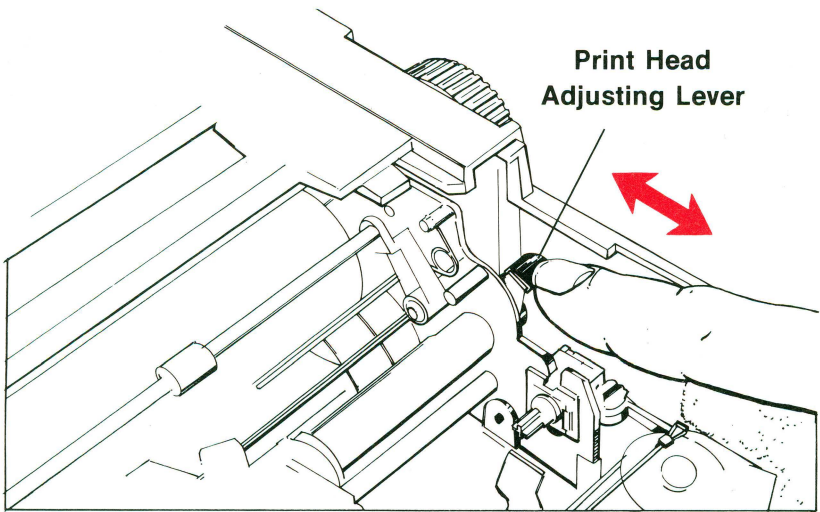


Vertical Print Line Adjustment

When you are using pin-feed, fanfold paper, the paper is fed continuously through the printer. After the paper has been inserted, you must position it vertically for the first line of printing. This is generally referred to as the T.O.F., or "top-of-form" position. Turn the platen knob, adjusting the first print line to the desired position in relation to the perforated top edge of the first sheet of paper. This procedure will automatically set the "top-of-form" position for all subsequent pages.

Adjusting for Paper Thickness

Your new Apple Dot Matrix Printer is designed to handle various weights of paper, multicopy forms, and multipage printer paper. Adjusting the printer for paper thickness is very simple. Remove the carrier cover. A small red adjusting lever is located on the right hand end of the tractor carriage.



When the adjusting lever is pushed towards the rear of the printer, the print head is set for single-sheet printing.

Moving the lever forward towards you will increase the number of pages the printer will accommodate. The lever has three additional settings. It will click at each of the wider gap settings as you move the lever forward.

Removing Paper

As the paper nears its end in the printer, the red "paper empty," or P.E. indicator on the control panel will light up. Pull the paper guide toward you to get access to the paper. Turn the platen clockwise as you draw the paper out of the printer. **Do Not** pull the paper out of the platen by hand because you may tear the paper as you remove it.

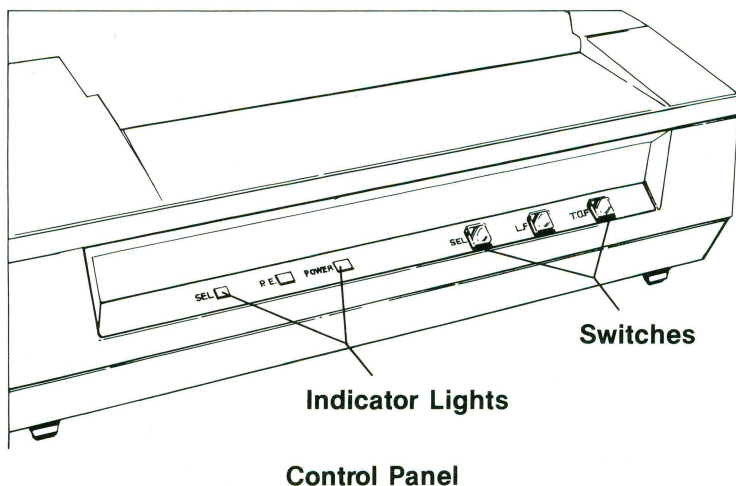
Part 4. ...Set...

Before you turn your new printer on, take a moment to familiarize yourself with the various control switches and lights and how they function.

Power Switch

The power switch is a two-way, rocker-type switch on the lower left hand side of the printer cabinet. It is clearly marked with **ON** and **OFF** positions.

When you press the power switch **ON**, the printer will power up, and the two green lights on the control panel will light up. The print head carriage will move to its normal, or "home" position on the far left. If there is no paper in the printer, the red P.E. light on the control panel will also light up.



SEL Switch

The SEL switch is a press button switch located on the front control panel. It controls the interface between your printer and the computer. The printer has two modes of operation. The first is "on-line," which means that the printer is under the control of your

computer. The second operational mode is “off-line,” which means that you can control the printer separate from your computer. When you press the SEL switch, you “select,” or switch to one or the other operational modes.

L.F. Switch

The “line feed,” or L.F. switch is also a press button switch on the front control panel. It will advance the paper one line at a time when it is pressed. This switch will operate only when your printer is in the “off-line” operational mode.

A single press of the L.F. switch advances the paper one line. If you press and hold the L.F. switch, the paper will advance one line at a time for four lines. On the fifth line, the paper will advance continually until you remove your finger from the switch.

T.O.F. Switch

The last press button switch on the control panel is the “top-of-form,” or T.O.F. switch. It advances the paper to the first print line position on the next sheet of paper when you are using pin-feed, fanfold paper. Again, this switch is operational only when the printer is in the “off-line” mode.

Paper Empty Switch

The “paper empty” switch is a microswitch located beneath the printer platen. When the end of a sheet of paper passes the “paper empty” switch, the switch will automatically light the red P.E. indicator light on the control panel. It will also switch the printer into the “off-line” operational mode. Finally, it will stop the print head when it is approximately $\frac{1}{4}$ ” from the end of the sheet of paper. This last safety feature prevents any possible damage to the print head that might occur from printing without paper in the printer.

Carrier Cover Interlock Switch

Your Apple Dot Matrix Printer also has a built-in safety switch to protect the print head when the carrier cover is removed. Beneath the carrier cover on the left hand side of the platen is an interlock microswitch. The printer will cease printing and automatically shift to the “off-line” operational mode if the carrier cover is opened or removed.

The printer control panel has three indicator lights which help you to monitor the operation of the printer.

Power Light

The green POWER light will light up whenever the printer is plugged into an electrical outlet and the power switch is in the **ON** position.

P.E. Light

The red “paper empty,” or P.E. indicator light will light up when there is no paper in the platen track. The light will also go on when a sheet of paper is near its end in the platen track. When there is paper loaded in the printer, the P.E. light will remain dark.

SEL Light

The green “select,” or SEL light will light up when the printer is in the “on-line” operational mode. During “off-line” operation, the SEL light will remain dark. Your printer is preprogrammed to begin operation in the “on-line” mode. When you first turn on the printer, the SEL light will be lit.

Part 5. ...GO.

Now that you have your printer all set up, it's time to turn it on. Check that the power switch is in the **OFF** position. Plug the power cord into the connector at the back of the printer and the power cord plug into a three-prong electrical outlet.

Press the power switch to the **ON** position.

The printer head will move to the far left "home" position. The platen will move slightly as it engages its drive. The green "POWER" and "SEL" lights on the control panel will light up. If the printer does not come to life when you turn on the power switch, check the power cord and the plug to insure they are fully seated. You might also check to see that you are getting power at your electrical outlet.

When your printer lights up, you are ready to run a simple test to insure that it is properly set up.

Part 6. The Final Test

Your new Apple Dot Matrix Printer has a built-in, self-test function which allows you to test the operation of the printer. Running the test procedure will assure you that the printer is fully operational before you connect it to your computer system.

Before you begin the test, be sure that you have loaded the ribbon cassette and that there is paper in the printer. Operating the printer without a ribbon or paper can damage the print head.

Turn the power switch **ON**. Check to see that the print head moves to the far left “home” position. Turn the printer **OFF**.

Press the T.O.F. switch and hold it. Using your other hand, simultaneously turn the power switch **ON**. Release the T.O.F. switch.

The printer will print a line of preprogrammed test pattern. Advance one line and continue to print.

```

ABCDEFGHIJKLMN0PQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~!"#$%&'()*+,-./01
BCDEFGHIJKLMN0PQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~!"#$%&'()*+,-./012
CDEFGHIJKLMN0PQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~!"#$%&'()*+,-./0123
DEFGHIJKLMN0PQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~!"#$%&'()*+,-./01234
EFGHIJKLMN0PQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~!"#$%&'()*+,-./012345
FGHIJKLMN0PQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~!"#$%&'()*+,-./012345

```

The printer will continue to print this test pattern until you turn the power switch **OFF**.

Part 7. The Grand Connection

The Apple Dot Matrix Printer has been specifically designed to connect to all Apple computers in both the Apple II Series and the Apple III Series. This section has, therefore, been divided into two separate sections to guide you in connecting your new printer to either Apple II Series or Apple III Series Computers.

If you are connecting your printer to an Apple III Computer, go to page **22**.

If you are connecting your printer to an Apple II Series Computer, read on.

Connecting the Apple Dot Matrix Printer to an Apple II Series Computer

You will need the following:

Apple II Series Parallel Interface Card

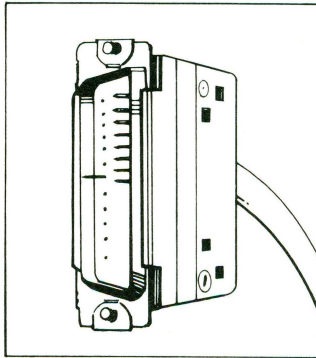
Apple II Series Printer Connecting Cable

Using the directions included with the Apple II Series Parallel Interface Card, install the card in your computer. Install the Parallel Interface Card in Slot #1 of your computer. The instructional diskette accompanying this booklet is designed to interface with a Parallel Interface Card that is installed in Slot #1. Use your **Owner's Manual** to help you locate Slot #1 if you are not sure of its location.

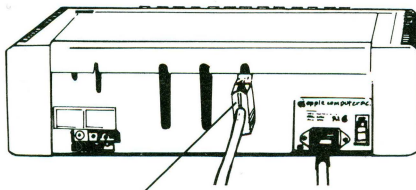
Make sure that your computer and your new printer are turned **OFF**. The power cords on both pieces of equipment should remain connected. The power cords should also be plugged into three-prong electrical outlets. This procedure will safeguard your equipment from any possible damage.

Attach the DB-25 male connector on your printer connecting cable to the female receptacle on the Apple II Series Parallel Interface Card at the back of your computer cabinet. You should note that the connectors have a wide side and a narrow side. The matching sides of the connectors must be aligned before they will properly connect together.

DB-25 Connector

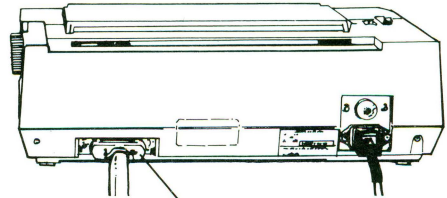


Apple II



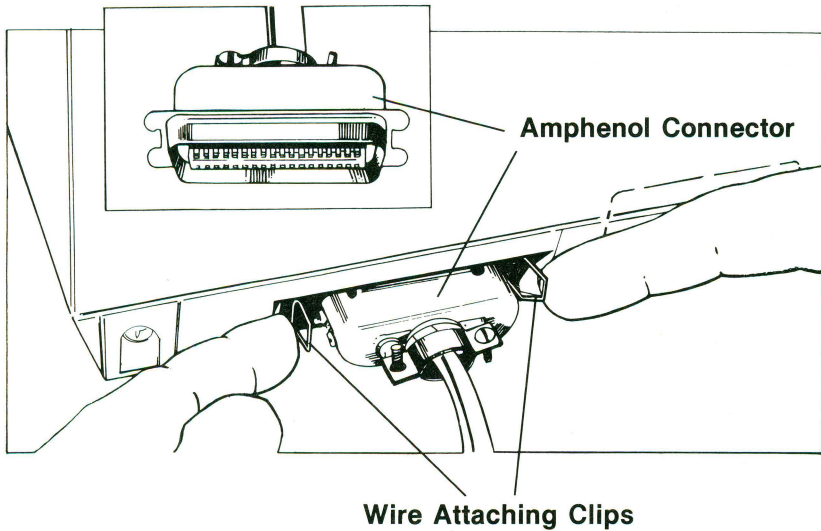
DB-25 Connector

Dot Matrix Printer



Amphenol Connector

Attach the male, 36-pin Amphenol Connector on the opposite end of the printer cable to the Parallel Interface Connector at the rear of your printer. Again, you should note that these connectors can be properly connected in only one way.



When the connector has been fully seated, close the two wire attaching clips that lock the connector securely in place.

Reposition your computer and printer so that you can comfortably work at the computer keyboard while watching the printer. To get started, be sure that your printer is properly loaded with a ribbon cassette and some pin-feed, fanfold printer paper. It's now time to give your Apple II Series Computer and your new printer a test run.

Performing a Test Run With an Apple II Series Computer

Turn **ON** your printer, computer and monitor. Check the SEL light on your printer control panel. It should be lit. If it is not, press the SEL button switch. The SEL indicator should light up.

When the cursor is fully visible on your monitor screen, type the following program into your computer. The program must be entered **exactly** as it appears on the next page.

```
10 PR#1
20 FOR I = 32 TO 111
30 PRINT CHR$(I);
40 NEXT I
50 PRINT
60 FOR I = 112 TO 127
70 PRINT CHR$(I);
80 NEXT I
90 PRINT
100 PR#0: IN#0
110 END
```

When you type the command **RUN**, you should get a test pattern.

If all went well, go to page **25**, and read the section entitled **Getting the Most From Your New Printer**.

BUT . . . if you didn't get a printout, don't despair! Check out each of the following points to see if something is amiss.

First, type in the **LIST** command, and list the program you entered. Compare the listed program with the one shown above. Do they match exactly? If they don't match, make the corrections, and run the program again. If the program is correct but you still don't get a printout, check the following:

- Check all the electrical and interface connections.
- Is the green SEL indicator light on your printer lit?
- Check your installation of the Apple II Parallel Interface Card.

When you have checked each of these possibilities, give the program another try. If you are still encountering difficulty, give your Apple dealer a call and ask for a little assistance.

Assuming that you have gotten a good test pattern printout from your computer, it's now time to learn just how well your new printer will perform. Turn to page **25** and carry on!

□ Connecting the Apple Dot Matrix Printer to an Apple III Series Computer

You will need the following:

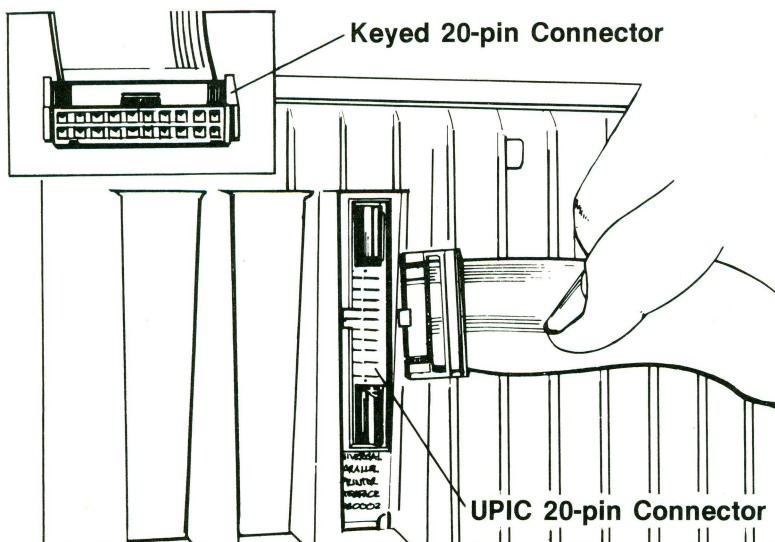
Apple III Series Universal Parallel Interface Card

Apple III Series Printer Connecting Cable

Install the Apple III Series Universal Parallel Interface Card (UPIC), following the directions that accompany the card. Install the UPIC in Slot #1. Use your **Owner's Manual** to help you locate Slot #1 if you are unsure of its location.

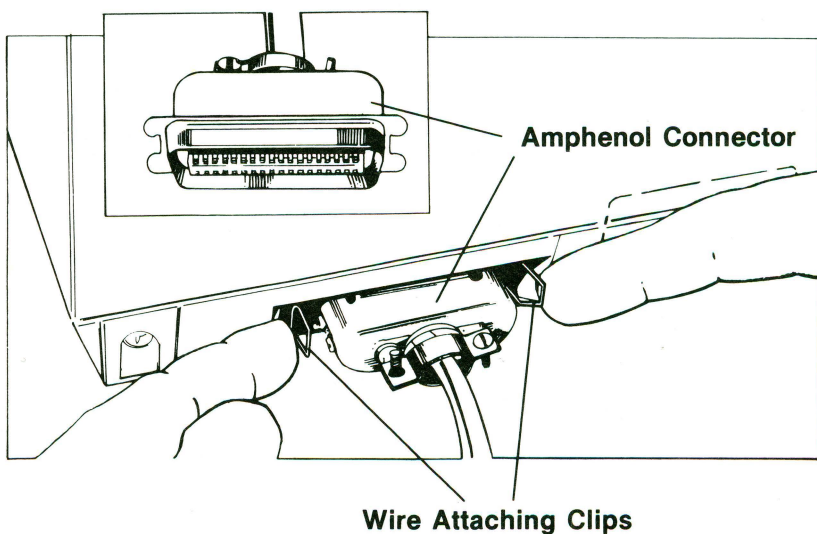
Turn off both your computer and the printer. Leave both power cords attached and plugged into a three-prong electrical outlet. This procedure will help to safeguard your equipment against any possible damage.

Attach the keyed, 20-pin female connector on your printer connecting cable to the male connector on the UPIC at the back of the computer cabinet.



Attach the 36-pin, male Amphenol Connector on the opposite end of the printer cable to the Parallel Interface Connector at the rear of your printer. You should note that these connectors can be properly connected in only one way.

When the connector has been fully seated, close the two wire attaching clips that lock the connector securely in place.



Reposition your computer and printer so that you can comfortably work at the computer keyboard while watching the printer. Make sure that your printer is loaded with a ribbon cassette and some pin-feed, fanfold printer paper. The next section will show you how to perform a test of your computer and printer.

□ Performing a Test Run With an Apple III Series Computer

Turn your printer, computer, and monitor **ON**. Check to see that the SEL light on your printer is glowing a bright green.

Performing a test run on an Apple III Series Computer requires that you load your system with **Apple Business BASIC**. Insert the Business BASIC diskette in disk drive number one, and “boot” the system by pushing the **CONTROL-RESET** button.

Enter the following program into your Apple III. The program must be entered **exactly** as it is shown below to work properly.

```

10 OUT$ = “.PRINTER”
20 OPEN #1, OUT$
30 FOR I = 32 TO 111
40 PRINT#1;CHR$(I);
50 NEXT I
60 PRINT #1
70 FOR I = 112 TO 127
80 PRINT #1; CHR$(I)
90 NEXT I
100 PRINT #1
110 CLOSE #1
120 END

```

When you type the command **RUN**, you should get a test pattern.

If all went well, go to page **25** and read the section entitled **Getting the Most From Your New Printer**.

BUT . . . if you didn’t get a printout, don’t throw in the towel just yet! Take a few minutes to check the following points:

List the program you entered to check its completeness and correctness. Compare the listed program with the program above. Do they match exactly? If they don’t match, make any corrections that are necessary, and run the program again. If your program is correct but you still don’t get a printout, check the following:

- Check all the electrical and interface connections.
- See that your printer SEL light is lit.
- Check your installation of the Apple III Universal Parallel Interface Card.

If you've checked each of these areas, run the program again. If it still doesn't run properly, give your Apple dealer a call and ask for a little assistance.

Once you have gotten a good test run printout, it's time to learn just how well your new printer can perform.

Getting the Most From Your New Printer

Your Apple Dot Matrix Printer is now ready to show you how well it can perform. To introduce you to the many features of this new printer, a special demonstration diskette has been prepared to put the printer through its paces.

Remove the diskette from the front of this manual, and insert it in disk drive number one of your computer system. "Boot" the diskette, and you will be on your way to learning how well your new Apple Dot Matrix Printer can rapidly produce clearly typed text, bold face type, underlined text, and quality graphs, tables, and charts.

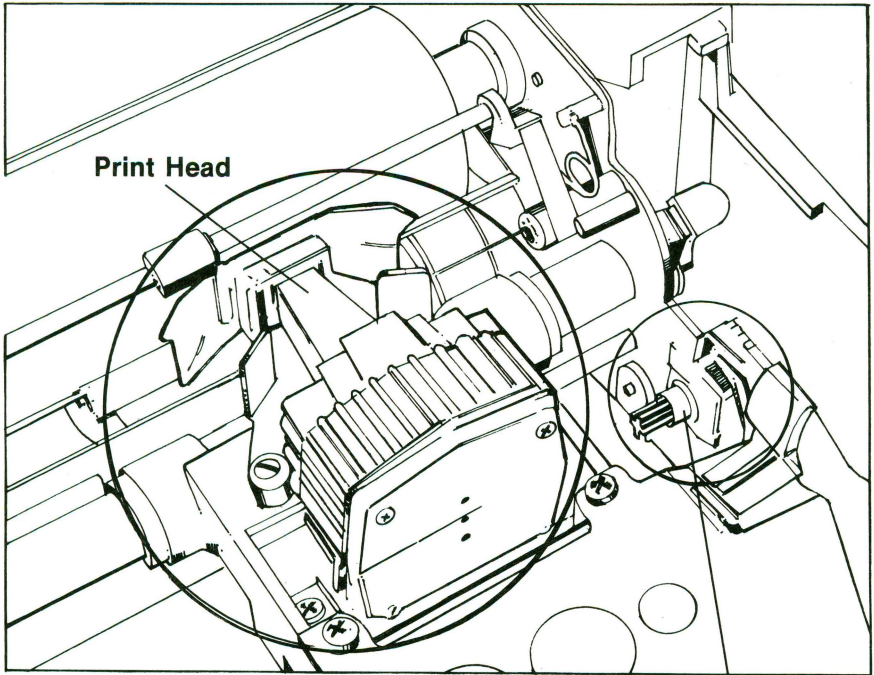
NOTE: If you are working with an Apple III Series Computer, you must first load the Apple II Emulation Diskette. Once you have loaded and booted the emulation diskette, remove it from the disk drive. Place the demonstration diskette in drive number one. Press the **RETURN KEY** and you are on your way!

Part 8. Clean-up and Maintenance

Your new Apple Dot Matrix Printer is relatively maintenance-free; but there are several cleaning and lubricating chores which, if performed routinely, will insure proper printer operation and prolong your printer's performance.

□ Cleaning

Periodically inspect and clean the area around the print head and the detector. Remove the carrier cover and check these parts for an accumulation of ribbon chips and paper dust. Remove the ribbon cassette and clean these parts with a small typewriter brush.



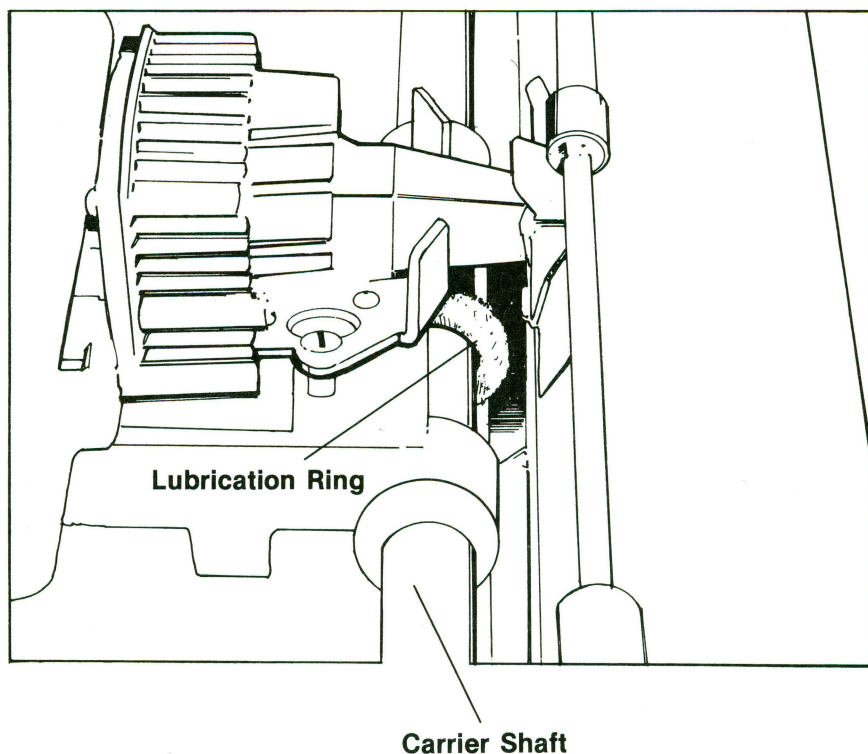
Detector

Do Not use any detergents or solvents when you clean your printer.

You may clean the exterior cabinet of your printer with a soft cloth and a weak solution of water and liquid soap. Be sure that you disconnect the power cord before you clean any portion of the printer.

Lubrication

You should lubricate your printer at least once a year. Remove the carrier cover and clean the print head carrier shaft and carrier guide shaft with some absorbent cotton. Then apply several drops of Launa oil to the felt lubrication ring. Use only Launa oil to perform this lubrication.



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Radio and Television Interference

You can determine whether your computer is causing interference by turning it off. If the interference stops, it was probably caused by the computer. If your computer does cause interference to radio or television reception, you can try to correct the interference by using one or more of the following measures:

- Turn the TV or radio antenna until interference stops.
- Move the computer to one side or the other of the TV or radio.
- Move the computer farther away from the TV or radio.
- Plug the computer into an outlet that is on a different circuit from the TV or radio. (That is, make certain the computer and the TV or radio are on circuits controlled by different circuit breakers or fuses.)

If necessary, you should consult your dealer or an experienced radio/television technician for additional suggestions. You may find the following booklet prepared by the Federal Communications Commission helpful:

"How to Identify and Resolve Radio-TV Interference Problems"

This booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402, Stock number 004-000-00345-4.



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