Apple
LaserWriter 4/600 PS

Setting up, connecting, and using your printer

Contents

Communications regulation information

FCC statement

This equipment has been tested and found to comply with the limits for a Class B digital device in accordance with the specifications in Part 15 of FCC rules. See instructions if interference to radio or television reception is suspected.

Radio and television interference

The equipment described in this manual generates, uses, and can radiate radio-frequency energy. If it is not installed and used properly—that is, in strict accordance with Apple's instructions—it may cause interference with radio and television reception.

This equipment has been tested and found to comply with the limits for a Class B digital device in accordance with the specifications in Part 15 of FCC rules. These specifications are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation.

You can determine whether your computer system is causing interference by turning it off. If the interference stops, it was probably caused by the computer or one of the peripheral devices.

If your computer system does cause interference to radio or television reception, try to correct the interference by using one or more of the following measures:

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

If necessary, consult an Apple-authorized service provider or Apple. See the service and support information that came with your Apple product. Or, consult an experienced radio/television technician for additional suggestions. You may find the following booklet helpful: *Interference Handbook* (stock number 004-000-00493-1). This booklet, prepared by the Federal Communications Commission, is available from the U.S. Government Printing Office, Washington, DC 20402.

IMPORTANT Changes or modifications to this product not authorized by Apple Computer, Inc., could void the FCC Certification and negate your authority to operate the product.

This product was tested for FCC compliance under conditions that included the use of Apple peripheral devices and Apple shielded cables and connectors between system components. It is important that you use Apple peripheral devices and shielded cables and connectors between system components to reduce the possibility of causing interference to radios, television sets, and other electronic devices. You can obtain Apple peripheral devices and the proper shielded cables and connectors through an Apple-authorized dealer. For non-Apple peripheral devices, contact the manufacturer or dealer for assistance.

DOC statement

DOC Class B Compliance This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the interference-causing equipment standard entitled "Digital Apparatus," ICES-003 of the Department of Communications.

Observation des normes—Classe B Cet appareil numérique respecte les limites de bruits radioélectriques applicables aux appareils numériques de Classe B prescrites dans la norme sur le matériel brouilleur : "Appareils Numériques", NMB-003 édictée par le ministre des Communications.

VCCI statement

情報処理装置等電波障害自主規制について

この装置は、第二種情報装置（住宅地域又はその隣接した地域において使用されるべき情報装置）で住宅地域での電波障害防止を目的とした情報処理装置等電波障害自主規制協議会（VCCI）基準に適合しております。

しかし、本装置をラジオ、テレビジョン受信機に近接してご使用になると、受信障害の原因となることがあります。

取扱説明書に従って正しい取り扱いをしてください。

Laser information

WARNING Making adjustments or performing procedures other than those specified in your equipment's manual may result in hazardous exposure.

WARNING Do not attempt to disassemble the cabinet containing the laser. The laser beam used in this product is harmful to the eyes. The use of optical instruments, such as magnifying lenses, with this product increases the potential hazard to your eyes. For your safety, have this equipment serviced only by an Apple-authorized service provider.

This printer is a Class 1 laser product. It carries a Class 1 label underneath the printer and a service warning label inside the printer.
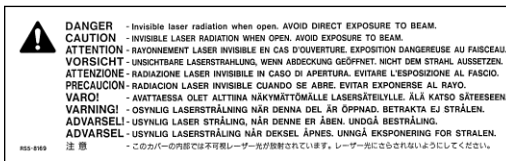
Service warning label
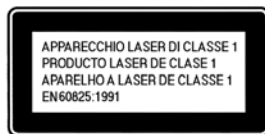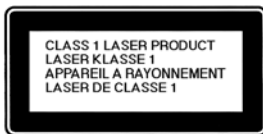
Class 1 label

1 Setting Up Your Printer

This chapter introduces the LaserWriter 4/600 PS printer and explains how to set it up. After you follow the instructions in this chapter, you'll be ready to print.

Main features of the LaserWriter 4/600 PS

- Clear, high-definition text and graphics are produced at 600 dots per inch (dpi) printer resolution.

- PostScript™, a technology that allows for precise printing of fonts and pictures, is built in to the printer.

- The printer's energy conservation feature automatically shuts off most of its functions when they aren't in use and "wakes up" when you print a document.

- A collection of 64 PostScript and TrueType fonts provide a large selection of typefaces for business, desktop publishing, and graphics needs.

- A LocalTalk port allows everyone on your AppleTalk network to share the printer.

- The printer is upgradeable to 6 megabytes of random-access memory (RAM) to more efficiently and quickly handle complex documents that contain many fonts and graphics and to improve performance.

- The included LaserWriter Bridge software lets you share the printer on an EtherTalk or TokenTalk network by connecting it to a host Macintosh.

Changes to the printing software that affect other printers

The software that comes with the LaserWriter 4/600 PS also upgrades the software for many other printers. If you've been using a printer that uses Apple's PrintMonitor application program, including all LaserWriter and StyleWriter printers, please note the following:

■ The new printing software includes a feature called desktop printer icons, which gives you new ways to print from the desktop. See "Working With Desktop Printer Icons" in Chapter 2 for details.

■ You also use the desktop printer icons (instead of Apple's PrintMonitor program) to monitor background printing. See "Monitoring Printing" in Chapter 2.

System requirements

To install the printer software and use the LaserWriter 4/600 PS printer with your Macintosh computer, you need

■ a Macintosh with a 68020 or higher central processing unit (CPU). Any Macintosh except a Macintosh Plus, SE, Classic®, Portable, or PowerBook 100 will work with the LaserWriter 4/600 PS.

■ system software version 7.1 or a later version

■ at least 4 megabytes of random-access memory (RAM)

■ 5.5 MB of space available on your hard disk (during installation the program tells you if you need more disk space)

The Installer program that comes with the LaserWriter 4/600 PS automatically checks whether your computer meets these requirements.

Unpacking the printer

1 **Remove everything from the shipping box.**

LaserWriter 4/600 PS

Software disks

Toner cartridge   Power cord
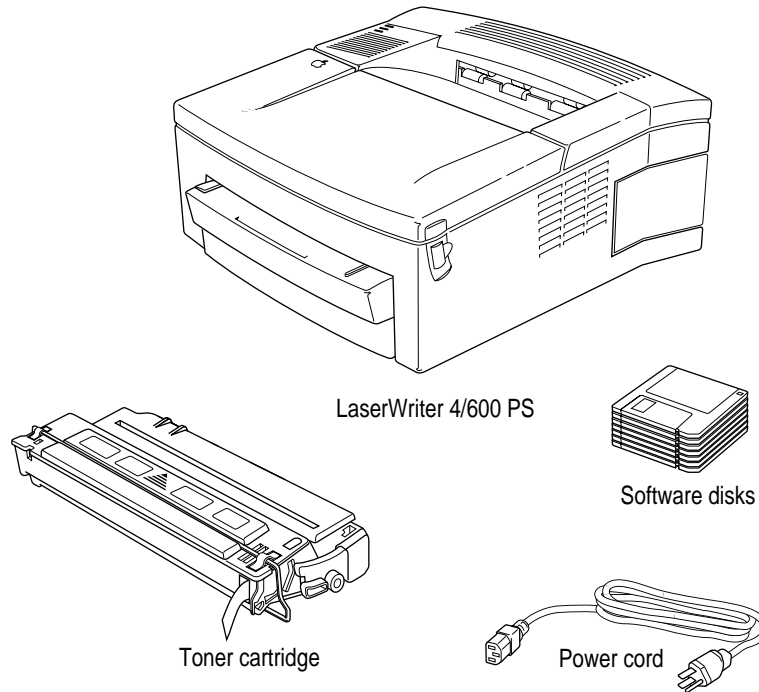
Connecting the printer to your Macintosh: You can connect your printer directly to your Macintosh with an Apple System/Peripheral-8 cable. You can also connect the printer to an AppleTalk network using a LocalTalk connector box and LocalTalk cable. You can purchase these connectors and cables from your Apple-authorized dealer. See "Connecting the Printer to Your Macintosh" later in this chapter for more information about connecting the printer.

2 **Remove the tape and packing material from the inside and outside of the printer.**

Save the carton and the packing material in case you ever need to ship the printer.

Important safety instructions

Always take the following precautions:

- Keep the printer away from sources of liquids, such as wash basins, bathtubs, shower stalls, and so on.

- Protect the printer from dampness or wet weather, such as rain, snow, and so on.

- Read all the installation instructions carefully before you plug the printer into a wall socket.

- Keep these instructions handy for reference by you and others.

- Follow all instructions and warnings dealing with your system.

- Don't use devices that produce open flames, such as Bunsen burners, near the printer.

- Don't use alcohol-based or ammonia-based cleaners on or around the printer.

- Clean the printer with only a damp cloth and, if necessary, a mild soap or detergent. Be careful to avoid getting liquid in the printer or the power cord receptacle.

Disconnect the power plug immediately if any of the following situations occur:

- the power cord or plug becomes frayed or otherwise damaged

- you spill something into the case

- the printer is exposed to rain or any other excess moisture

- the printer has been dropped or the case has been otherwise damaged

- you suspect that your printer needs service or repair

- you want to clean the case (use only the recommended procedure described in Chapter 3)

WARNING Electrical equipment may be hazardous if misused. Operation of this product, or similar products, must always be supervised by an adult. Do not allow children access to the interior of any electrical product and do not permit them to handle any cables.

Choosing a location for the printer

Choose a flat, stable surface with adequate room around the printer. The area should be well ventilated and away from direct sunlight or sources of heat, cold, or humidity.

Position the printer to leave at least 4 inches of space behind the printer for airflow. If you plan to use face-up delivery, in which paper exits the back of the printer, allow enough space for your printed materials to exit the printer. (See "Choosing Face-Down or Face-Up Delivery" in Chapter 2.)

Allow 4 inches (10 cm) at the back of the printer for airflow.

4 inches
(10 cm)

Allow space for airflow
around the vent.
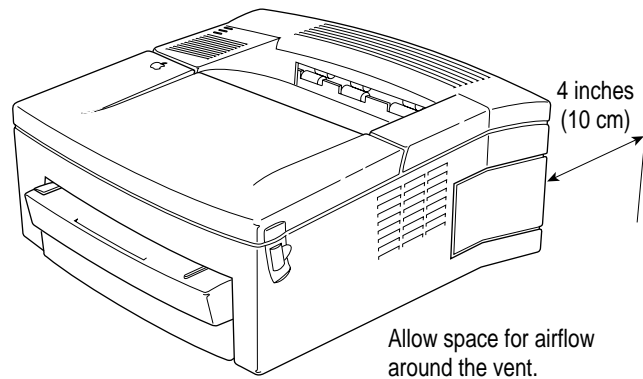
IMPORTANT Don't plug in the printer yet! Wait until you finish setting up the printer (including connecting the cables and putting in the paper) as described in this chapter. Unless everything is ready when you plug in the printer, the printer may jam when it tries to print the startup page.

Putting in paper

You can put up to 100 sheets of copier-weight bond paper into the paper cassette supplied with your printer. You can use the following sizes: U.S. Letter, A4, B5, U.S. Legal, or Executive. For advice on paper quality, see "About Paper" in Chapter 4.

To load the paper cassette, follow these steps:

1   **Pull the cassette out of the printer.**
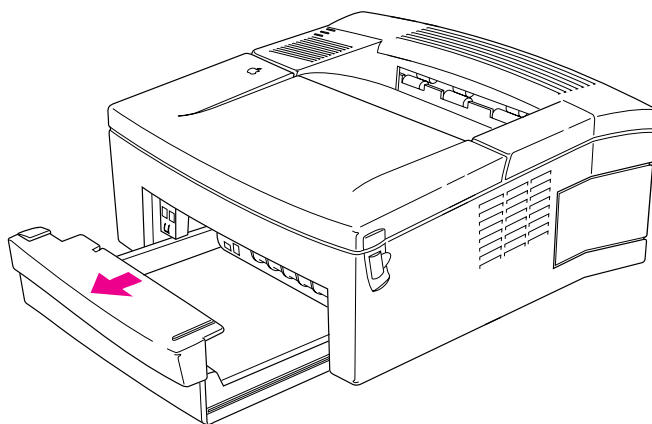
2 **Before loading the cassette for the first time, remove the orange cardboard and plastic shipping inserts.**

To remove the plastic insert, turn the cassette over and press both clips.
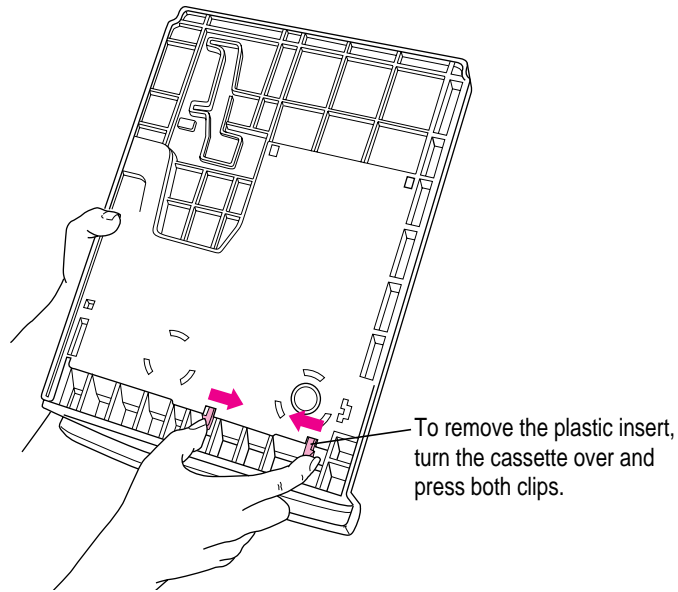
3 **Adjust the cassette for your paper.**

Slide this backstop toward the center of the cassette.

Move the backstop until this arrow points to the size of paper you're using.
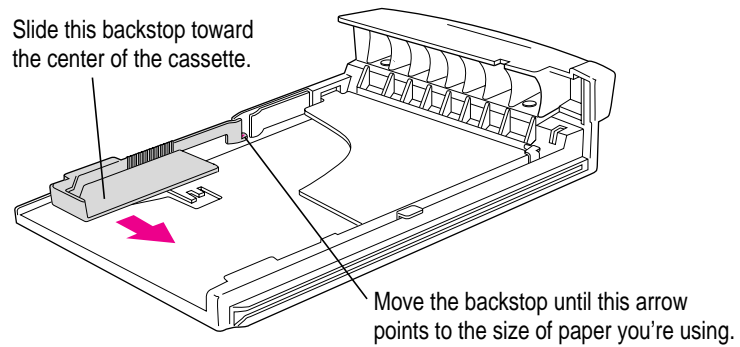
Make sure the backstop is in one of the notches. If you set it between notches, you may cause a printing error.

4 Insert a stack of paper under the brackets. If you use 3-hole paper, line up the holes as shown:

Insert paper this end first.

Insert letterhead paper face down with the top of the page at this end of the cassette.

Press here to lift the front bracket.

Fit the paper under these two corner brackets.
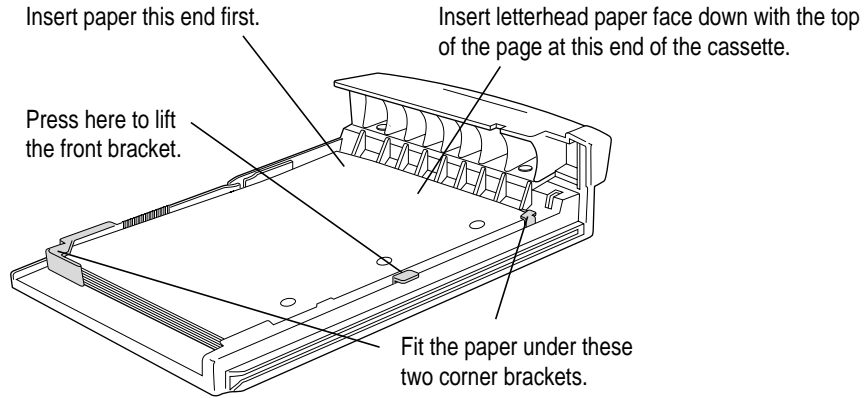
To help insert your paper under the bracket at the front of the cassette, press the metal tab on the side of the cassette to lift the bracket.

5 Slide the cassette back into the printer.
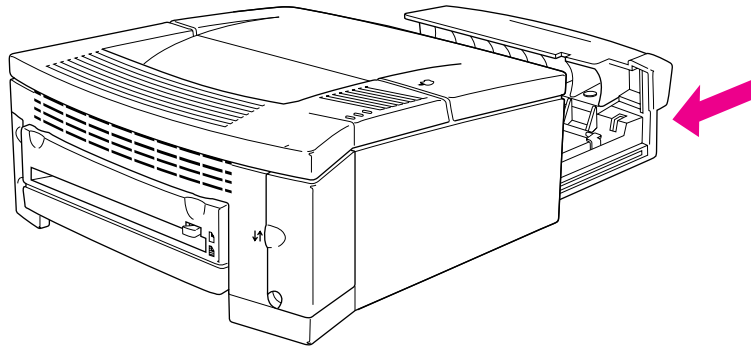
Installing the toner cartridge

Toner is the powdered substance that produces the image on the paper. Follow these steps to install a toner cartridge in the printer.

1 **Open the printer lid.**

If you're installing a toner cartridge for the first time, remove the colored plastic shipping inserts, as shown in the picture. If you're replacing a toner cartridge, remove the old cartridge.

Press down on the two plastic shipping restraints to remove them.
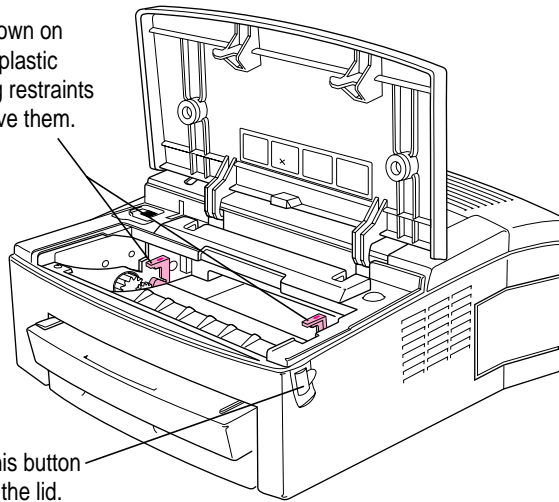
Press this button to open the lid.

To remove an old cartridge, grasp the cartridge by the center and pull horizontally as you rotate the cartridge up.
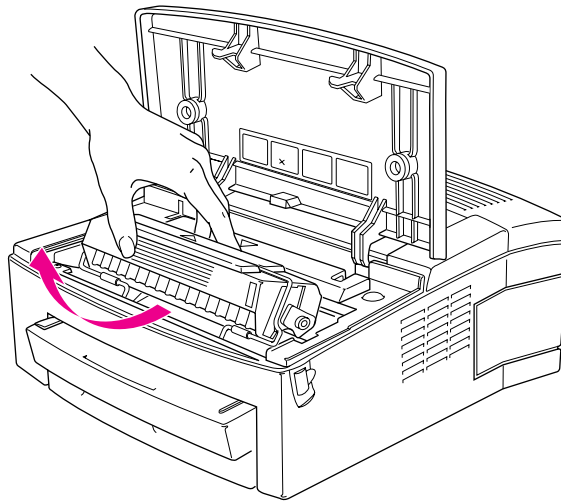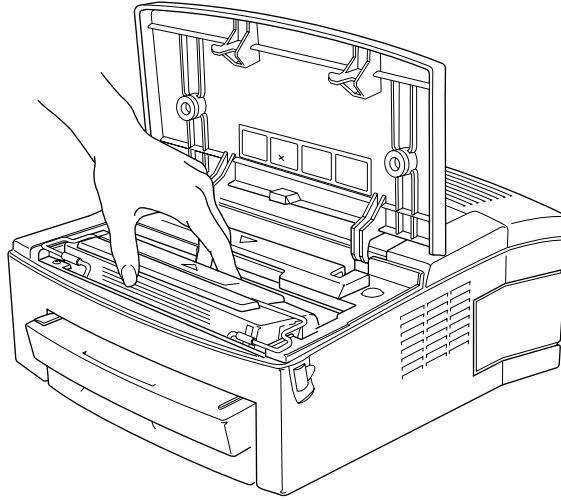
2   **Unpack the toner cartridge and gently rock it to distribute the toner inside.**

Gently rock the toner cartridge.
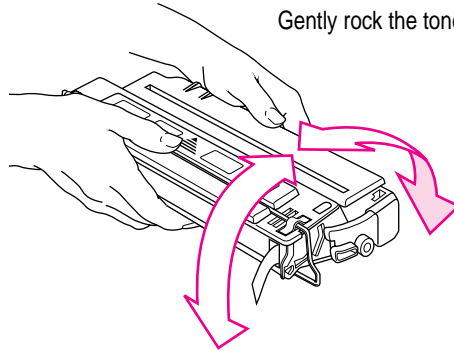
Save the protective bag. If you move or transport your printer, you can remove the cartridge and transport it separately in the bag.

Don't expose the cartridge to direct sunlight. Don't expose it to room light for more than five minutes, or the life of the cartridge may be reduced.

3   **Pull the tab to remove the tape.**

Pull the tape straight out in the direction shown. Do not pull it to either side or it may break.
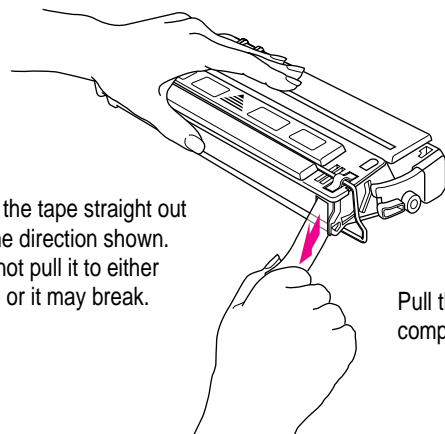
Pull the tape completely out.

WARNING Be sure to pull the tape straight out in the direction shown. Don't pull it too quickly or at too sharp an angle; otherwise, the tape may break and the cartridge won't work.

4 **Insert the cartridge into the printer.**

Line up the markings on the sides of the cartridge with the arrows in the printer.

Align these arrows.
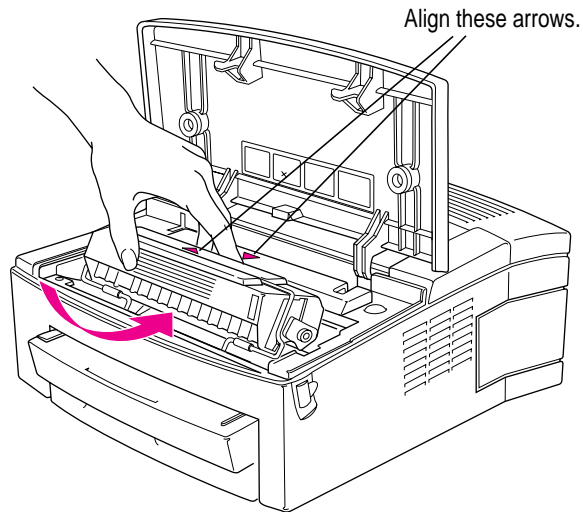
5 **Press down gently on the cartridge to secure it in place.**

6 **Close the printer lid.**

Connecting the printer to your Macintosh

You can connect the LaserWriter 4/600 PS to your Macintosh directly, or over an LocalTalk network, as explained in the next two sections.

Connecting directly to your Macintosh

If your Macintosh isn't connected to a network, you can connect the printer directly to your computer. (If your computer is connected to a network, skip to the next section now.) To connect the printer in this manner, you must have an Apple System/Peripheral-8 cable, part number M0197, available from a Apple-authorized dealer.
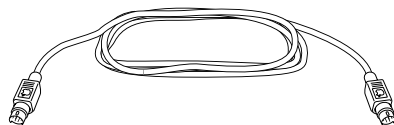
Apple System/Peripheral-8 cable

Before you begin If you already plugged in the printer, unplug it now.

1 **Make sure you have an Apple System/Peripheral-8 cable available.**

2 **Plug one end of the cable into the LocalTalk port on the printer and the other end into the printer port on the back of the Macintosh (both ends are the same).**

No matter which Macintosh
you have, this icon identifies
the printer port.

Press the cable into
this notch so you can
close the cable cover.

Plug the Peripheral-8
cable into the printer's
LocalTalk port.
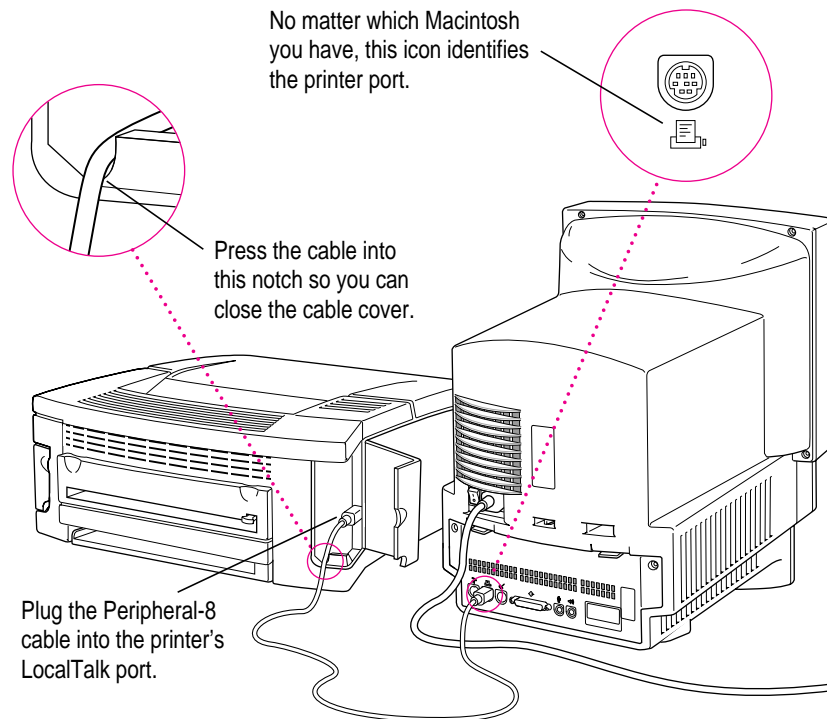
3 **Skip the next section and go to "Plugging in the Printer" later in this chapter.**

Connecting over a LocalTalk network

If your Macintosh is already connected to a network, you can connect the printer to the network too. Every Macintosh on the network can print on the printer. To connect the printer in this manner, you must have a LocalTalk connector box and appropriate cables, available from an Apple-authorized dealer. Be sure to purchase the same type of LocalTalk connector box and cable that your network uses. Some LocalTalk connector boxes require RJ-ll cables, like those used to connect telephones to wall jacks. Other LocalTalk networks may use LocalTalk connector boxes that require cables with DIN-8 connectors.
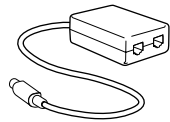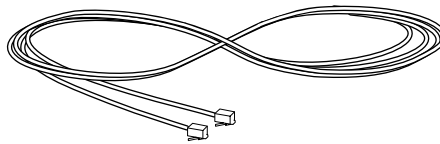
LocalTalk connector box   RJ-11 cable

Note: Everyone on the network who wishes to use the LaserWriter 4/600 PS must install the printer software and select the printer in the Chooser as described in "Telling Your Computer to Use the LaserWriter 4/600 PS" later in this chapter.

Before you begin If you already plugged in the printer, unplug it now.

1 **Make sure you have a LocalTalk connector box and a LocalTalk cable.**

2   **Connect the cables as shown here:**

Plug the connector box cable
into the printer's LocalTalk port.

Press the cable into
this notch so you can
close the cable cover.

To LocalTalk network

Use a LocalTalk cable to connect the printer's connector
box to a connector box anywhere on the network.
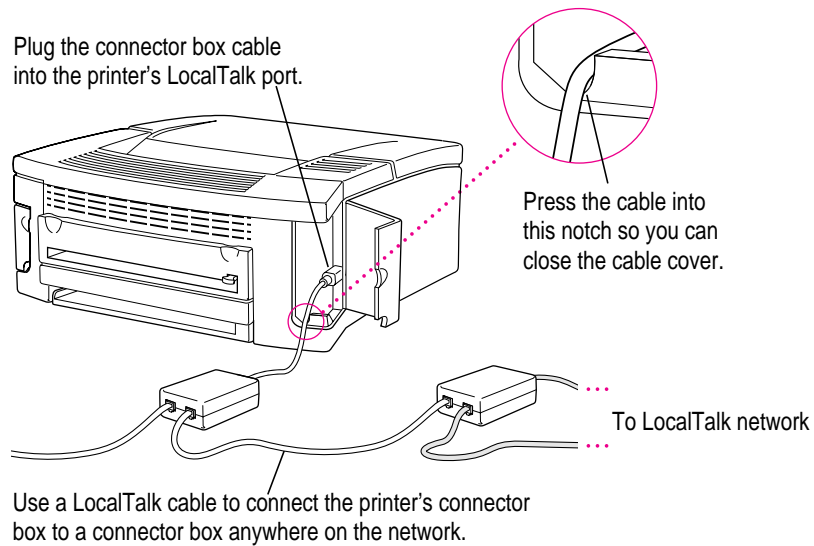
Plugging in the printer

The LaserWriter 4/600 PS printer has no on/off switch. As soon as it is
plugged in, the power is on and the printer is standing by, ready to print. To
save energy, the printer turns off most of its functions when they're not being
used. As soon as it detects something to be printed, the printer "wakes up"
and goes to full power. If you should need to turn the power off completely,
simply unplug the printer.

The LaserWriter 4/600 PS is intended to be plugged in and on standby
continuously. There is no need to unplug it, except to clean it or move it.
When it's standing by, the printer consumes very little energy—less than 7
watts, about the same as a night-light.

Saving energy When you save energy, you save natural resources and reduce
pollution. The LaserWriter 4/600 PS contains features that automatically save
energy, such as only turning itself on completely when a document is sent to
be printed. You can increase the energy savings by using the page preview
function available in many programs to check page layout rather than printing
a draft.

Before you begin Make sure you have installed the paper and toner cartridge and connected the printer to your Macintosh or network.

1 **Attach the power cord to the printer as shown:**

This light glows steadily while the printer is standing by.
It blinks while the printer is working.

Press the power cord into this notch
so that you can close the cover.
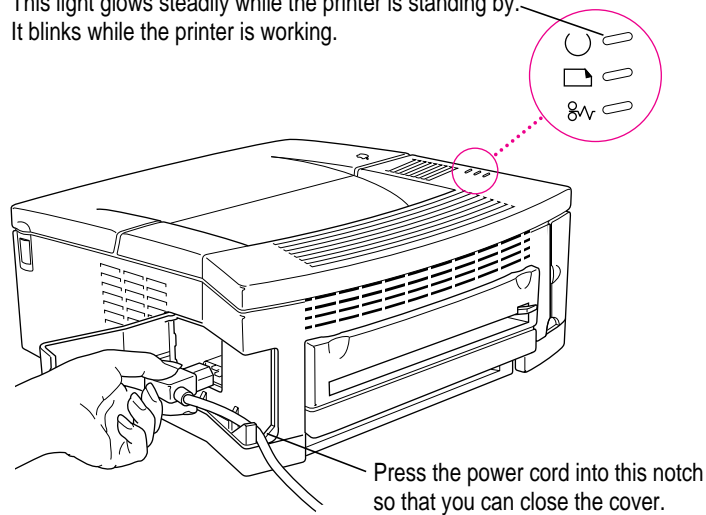
IMPORTANT The only way to disconnect power completely is to unplug the power cord. Make sure at least one end of the power cord is within easy reach so that you can unplug the LaserWriter when you need to.

2 **Plug the other end of the power cord into a grounded wall outlet or power strip.**

WARNING The LaserWriter 4/600 PS is equipped with a three-wire grounding plug—a plug that has a third (grounding) pin. This plug will fit only a grounded AC outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact a licensed electrician to replace the outlet with a properly grounded outlet. Do not defeat the purpose of the grounding plug!

3 **Wait for the startup page to print.**

When you plug the power cord into an outlet, all the printer lights come on. After a few moments, the green Ready/In Use light begins to blink, and a little while later the startup page prints.

Installing your printer software

The LaserWriter 4/600 PS comes with several disks that contain the printer software and a program called the Installer that copies the software onto your hard disk. Follow the steps in this section to install the software.

The Installer program installs the new printing software you need, plus any fonts that come with the printer. If you use Apple's special QuickDraw GX software, it also installs new LaserWriter GX software.

IMPORTANT To use the LaserWriter 4/600 PS your Macintosh must have system software version 7.1 or later. If your Macintosh has an earlier version of the system software, see your Apple-authorized dealer for an upgrade.

Before you begin Lock all disks by turning each one over and sliding the small, square plastic tab so you can see through the hole. (The disks may already be locked.)

These instructions tell you how to restart your computer with the extensions turned off (which prevents incompatible software from interfering with the installation) and how to use the Installer program.

1   **Quit any programs you are running.**

2   **While holding down the Shift key on the keyboard, choose the Restart command from the Special menu. Don't release the Shift key until you see the "Extensions Off" message on your screen, or until your normal desktop appears.**

3   **Insert the *Printer Disk 1* disk into a floppy disk drive.**

The disk's icon appears on the desktop.

4   **Double-click the disk icon to open it.**

5   **Double-click the Installer icon to start the Installer program.**

Installer

IMPORTANT   The Installer checks to make sure you have the correct system software and enough free disk space for the installation. If not, it displays a message telling you what you need. You won't be able to install the software until you correct the problem. If it says you don't have the correct system software, you can purchase a new version from your Apple-authorized dealer.

6   **After you read the information on the screen, click Continue.**

The Install dialog box appears.

7   **Make sure that the disk named in the Destination Disk box is the one on which you want to install the printer software. If not, click Switch Disk until the correct disk name appears.**

8   **Click the Install button.**

The Installer takes a few minutes to calculate what needs to be done and then begins to copy files.

9   **When the *Printer Disk 1* disk is ejected, follow the instructions on your screen.**

The Installer will eject disks and ask you to insert others. Keep following the instructions on the screen until the installation is complete.

10   **When you see a message reporting that installation was successful, click Restart.**

The Installer restarts your Macintosh. After you restart, you may notice a new icon on your desktop, one that represents a printer. It's called a desktop printer, and it looks similar to this:

LaserWriter   StyleWriter

If this is the first printer you've connected to your computer, you won't see a desktop printer icon yet.

The bold outline around the icon indicates that this is the default printer. For information about desktop printers, see "Printing with a Desktop Printer" and "Monitoring Printing" in Chapter 2.

You will also see the Apple LaserWriter Software folder on your hard disk. This folder contains the Apple Printer Utility and the Read Me file.

11   **After the computer restarts, you must select the printer in the Chooser, as described in "Telling Your Computer to Use the LaserWriter 4/600 PS."**

Installation troubleshooting

If the Installer can't complete the installation, it will issue a warning message. Here are some ways to fix some common problems.

■ Make sure that you have the correct hardware or system software for this printer. (If you don't, the Installer will tell you what you're missing.)

■ Make sure you turn off your software extensions as described in the previous section.

■ You may have some corrupted fonts on your hard disk. To solve or work around this problem, see "Removing Items from Your Fonts Folder to Solve Installation Problems" and "Using the Custom Installer to Solve Installation Problems" in Chapter 4.

More information about the Installer program

The procedure described above installs all the software you need onto your hard disk. In very rare circumstances, you may want to install only a subset of the software. In that case, choose Custom Install from the pop-up menu in the Installer dialog box. A list of choices appears. To see information about a choice, click the box with the letter *i* to the right of the choice. Select the items you wish to install, then click the Install button.

Telling your computer to use the LaserWriter 4/600 PS

Before you use your LaserWriter 4/600 PS for the first time, you must select it in the Macintosh Chooser. If you use QuickDraw GX, skip this section and follow the instructions in "Telling Your Computer to Use the LaserWriter 4/600 PS with QuickDraw GX," next.

IMPORTANT If you have upgraded your printer so it has more than 2 MB of memory, skip this section and turn to "Configuring Your Printing Software" in Appendix C. Use those instructions instead of the instructions in this section. You can tell how much memory your printer has by looking at the startup page you printed when you plugged in the printer.

Before you begin Make sure the printer is plugged in, your computer is turned on, and the printer is connected to your Macintosh.

1 **Select the Chooser from the Apple () menu.**
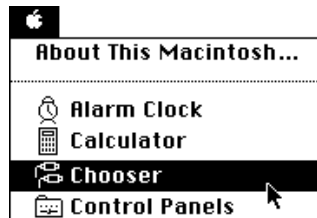
About This Macintosh...

⚽ **Alarm Clock**
▦ **Calculator**
☷ **Chooser**
🗃 **Control Panels**

2 **Select items in the Chooser as follows:**

First, click this icon. (If necessary, use the scroll bar and arrows to find the icon.)

LW Select 310   Personal ...Writer SC

LaserWriter 8

Select a PostScript Printer:

LaserWriter 4/600 PS

Third, click the name of your printer.

AppleTalk Zones:

Halftime
Hardware Test Lab
Imaging
Instructional Products
Japan
Montana
Second Floor
Third Floor

Second, if the network has zones, click one to select it.

Finally, click the Setup button.

If this button says Create, you're using QuickDraw GX. Skip to the instructions in the next section.

Setup...   Background Printing
◉ **On** ◯ **Off**

AppleTalk   ◉ Active
◯ Inactive

The Macintosh displays messages on your screen while it selects the correct PostScript Printer Description (PPD) file.

A small icon now appears next to the name of your LaserWriter 4/600 PS in the Chooser.

3 **Close the Chooser by clicking its close box (in the top-left corner).**

After you close the Chooser, notice the new desktop printer icon for the LaserWriter 4/600 PS on the desktop.

LaserWriter 4/600 PS

You can drag this icon to any position you want on your desktop. You cannot move it off the desktop.

If you want, you can repeat steps 1 through 3 to create other desktop printers for easy access. (You must close the Chooser each time to create a desktop printer.)

The last desktop printer created becomes the default printer. Your documents will automatically be printed on the default printer. For more information about selecting between available printers, see "Switching Between Printers" in Chapter 2.

If this is your only desktop printer, you can't get rid of the icon by dragging it to the Trash. (The icon will reappear if you do.) To get rid of the LaserWriter 4/600 PS desktop printer, you must first select a different desktop printer as the default printer and then drag the LaserWriter 4/600 PS printer icon to the Trash. If you don't want to use desktop printer icons, see Appendix D for information about how to remove the desktop printer software.

Telling your computer to use the LaserWriter 4/600 PS with QuickDraw GX

Follow these instructions to select the printer in the Chooser if you have installed and are using QuickDraw GX on your Macintosh.

1 **Select the Chooser from the Apple (🍎) menu.**

2 **In the Chooser dialog box, use the "Connect via" pop-up menu to choose AppleTalk connection.**

Choose AppleTalk from this pop-up menu.

The AppleTalk Zones box may not be displayed in your Chooser.
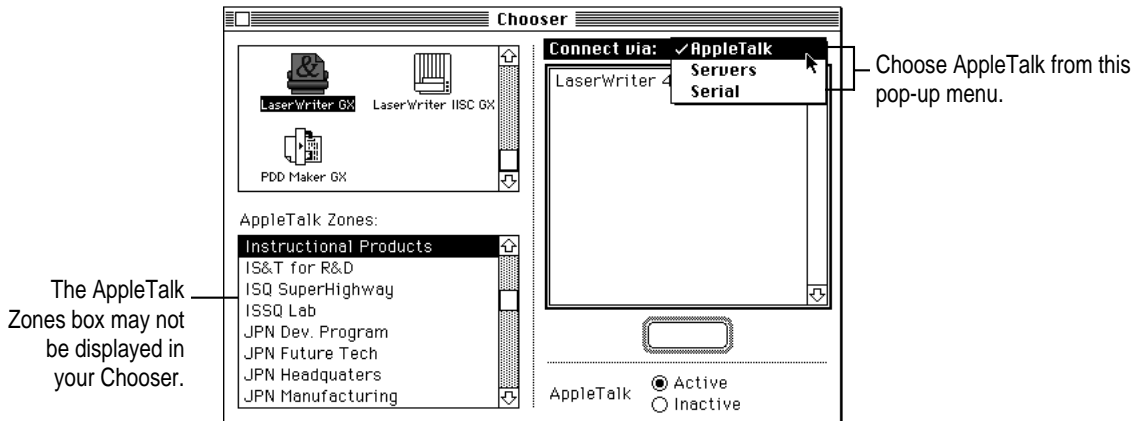
Note: If QuickDraw GX is installed on your Macintosh, background printing is always on and cannot be turned off.

3 **In the Chooser dialog box, click items to select them.**

First, click this icon. (If you don't see the icon, use the scroll bar and arrows to find it.)

Second, if your network has zones, click the one you want.

AppleTalk appears here.

Third, click the name of the printer you want to use.

Finally, to create a desktop printer, click Create. A printer icon appears on your desktop for easy access.
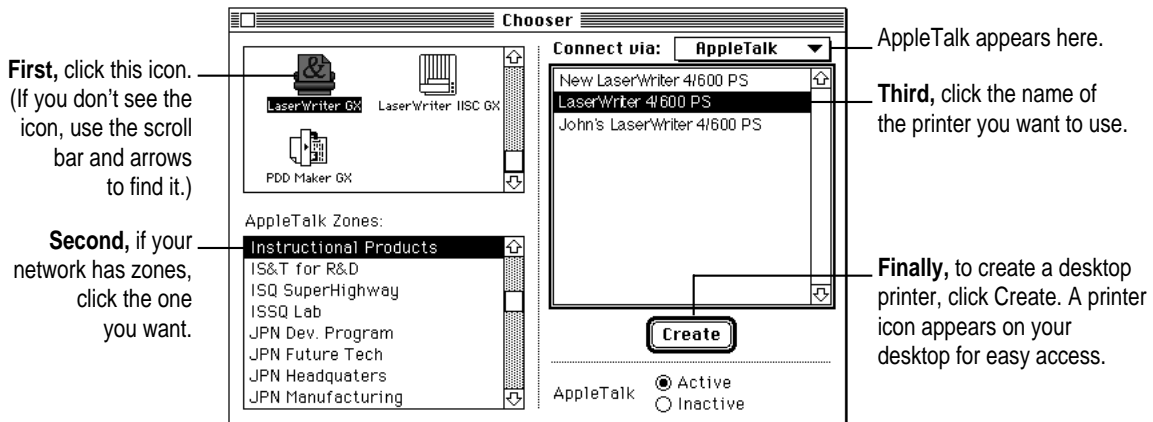
4   **Close the Chooser dialog box.**

If you close the Chooser without creating at least one desktop printer, this message appears.

```
┌─────────────────────────────────────────┐
│  ╓─╖   You are about to close the Chooser │
│  ║ ║   without creating a desktop printer. │
│  ╙─╜   Would you like a desktop printer to be │
│        created for the last printer you   │
│        selected?                          │
│                                           │
│              [ Cancel ]  [ Create ]       │
└─────────────────────────────────────────┘
```
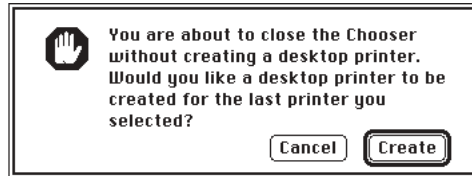
To use a printer for which you have no desktop icon, you must select the printer in the Chooser and click Create. If you select the printer but don't click Create, the Chooser ignores the selection.

Trying out the printer

The best way to see if your printer is set up correctly is to try printing something. You can print a document of your own, or you can print the Read Me file that was installed with the printer software. Follow these steps:

Before you begin Return to the Finder by clicking anywhere on the desktop.

1   **Open the Apple LaserWriter Software folder that was installed on the hard disk.**

2   **Double-click the Read Me icon to open the Read Me document.**

ReadMe

3   **Open the File menu and choose Page Setup.**

A dialog box opens.

4 **Indicate what paper size you're using.**

First, use this pop-up menu to indicate the size of paper loaded in the paper tray.

```
LaserWriter 8 Page Setup                              (   OK   )    Then, click OK.
                                                      ( Cancel )
            Paper: [ US Letter ▼ ]
            Layout: [ 1 Up ▼ ]
            Reduce or [ 100 ] %                       ( Options )
            Enlarge:                                  (  Help  )
            Orientation: [ ] [ ]
```
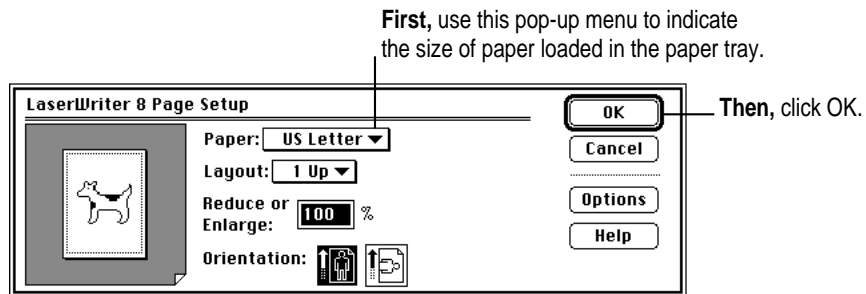
You don't need to choose the Page Setup command every time you print—you need to use it only when you want to change the normal settings.

5 **Open the File menu and choose Print.**

A dialog box opens.

6 **Click the Print button.**

```
Printer: "LaserWriter 4/600 PS"                            ( Print  )
Copies: [1]   Pages: ◉ All   ○ From: [  ]   To: [  ]       ( Cancel )
┌Paper Source─────────────────┐ ┌Destination──┐
│ ◉ All ○ First from: [ Cassette ▼ ] │ ◉ Printer │        ( Options )
│      Remaining from: [ Cassette ▼ ] │ ○ File   │        (  Help  )
└─────────────────────────────┘ └─────────────┘
```
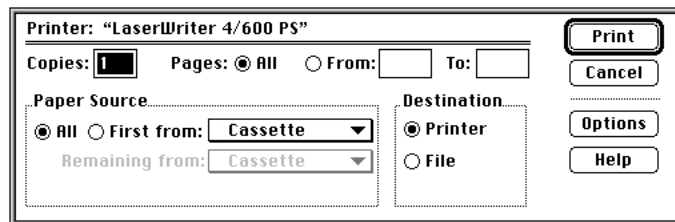
For information about all the choices you can make in the Print dialog box, see Chapter 2.

7 **Open the File menu and choose Quit to leave the Read Me file.**

The green Ready/In Use light will begin to blink. After a few moments, the printed page or pages will come out of the printer. If there's a problem, see Chapter 4 for suggestions.

What's next?

You're now ready to start using your printer.

■ If you want to learn about different printing options, see Chapter 2, "Printing."

■ If you want to share the printer with others on an EtherTalk or TokenTalk network using the LaserWriter Bridge software provided with the printer, see Appendix B, "Using the LaserWriter Bridge Software."

■ If you have installed QuickDraw GX and turned it on, see Chapter 2 for instructions on printing with QuickDraw GX.

2 Printing

• • • • • •

This chapter explains how to print documents on a LaserWriter 4/600 PS printer and how to use the Apple Printer Utility program. More printing instructions can be found in the manuals for your application programs.

Choosing face-down or face-up delivery

You can choose where your pages exit the printer. With face-down delivery, your pages come out the top of the printer, into the top tray. With face-up delivery, sheets exit the printer with reduced bending through a slot in the printer's back.

Face-down delivery

Choose face-down delivery with copier-weight bond paper. Face-down delivery has the advantage of keeping the paper stacked in order. The face-down tray holds at least 25 sheets. To select face-down delivery, set the paper delivery lever in the *up* position.

For face-down delivery, this lever must be up.
The paper comes out the top of the printer.
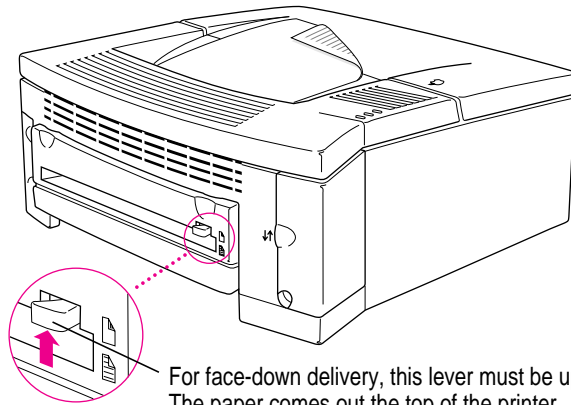
Face-up delivery

Choose face-up delivery to print envelopes, transparencies, labels, and thick papers, or when you want less paper bending than with face-down delivery. To select face-up delivery, make sure there is enough space behind the printer for the paper to come out, and set the paper delivery lever in the *down* position.

For face-up delivery, this lever must be down.
The paper comes out the back of the printer.
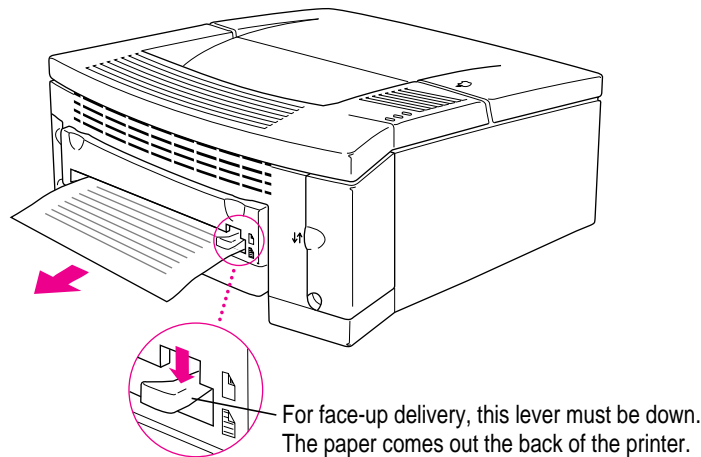
Planning documents with the LaserWriter 4/600 PS in mind

Many printer options affect how much you can fit on a page. Before you spend a lot of time laying out a document and setting page breaks, set it up as you plan to print it.

1 **Select the printer you plan to use.**

See "Switching Between Printers," later in this chapter.

2 **With the document active on your computer screen, choose Page Setup from the File menu and select the options you like.**

The key areas that affect page layout are paper size, orientation, and whether you reduce or enlarge the printed image. When you're finished setting your options, click the OK button to return to your document. You can now format it as you like. Since you've already set your printing options, the document will print as you see it on your screen.

For more information about options available to you in the Page Setup dialog box, see "Defining the Page Setup," next.

Defining the page setup

Almost every Macintosh program has a Page Setup command in the File menu which you can use to set a variety of options, from changing the paper size to applying visual effects. The most common options are already selected for you, so you need to choose Page Setup only if you want to change them.

Note: If you use QuickDraw GX on your Macintosh, turn to the next section, "Defining the Page Setup Using QuickDraw GX."

To define the page setup for a particular document, open the document, then choose this command from the File menu. A dialog box opens on your screen.

Your program may offer options in addition to the ones shown here.

```
╔══════════════════════════════════════════════════════════╗
║ LaserWriter 8 Page Setup                        ┌──────┐  ║
║                        Paper: │ US Letter ▼ │    │  OK  │  ║
║  ┌──────────┐          Layout: │ 1 Up ▼ │       └──────┘  ║
║  │          │                                   ┌────────┐║
║  │   🐕     │          Reduce or  ┌─────┐ %     │ Cancel │║
║  │          │          Enlarge:  │ 100 │        └────────┘║
║  │          │                                             ║
║  └──────────┘          Orientation: [▯] [▯]    ┌─────────┐║
║                                                │ Options │║
║                                                └─────────┘║
║                                                ┌────────┐ ║
║                                                │  Help  │ ║
║                                                └────────┘ ║
╚══════════════════════════════════════════════════════════╝
```
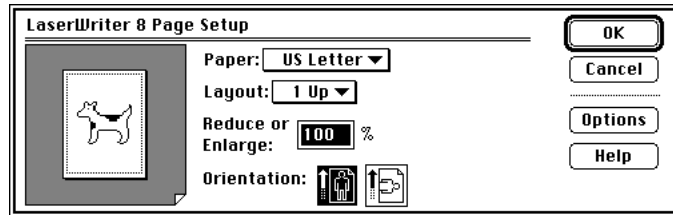
Item in dialog box	What you use it for
Paper	Indicate size of paper you're using.
Layout	Print 1, 2, or 4 pages per sheet of paper.
Reduce or Enlarge	Enlarge or reduce the printed image. Type a number between 25 and 400 to set the scaling percentage.
Orientation	Indicate whether the printed page should be longer than wide (portrait orientation) or vice-versa (landscape orientation).

Click the Help button for information about your choices.

Click the Options button in the Page Setup dialog box to see these additional choices:

Look in this box to see how the visual effects you choose will affect the printed image.

```
LaserWriter 8 Options                                    ⬭ OK ⬭

                    Visual Effects:                      ⬭ Cancel ⬭
                    ☐ Flip Horizontal
                    ☐ Flip Vertical
        🐕          ☐ Invert Image                       ⬭ Help ⬭

                    Printer Options:
                    ☒ Substitute Fonts
                    ☒ Smooth Text
                    ☒ Smooth Graphics
                    ☐ Precision Bitmap Alignment
                    ☐ Larger Print Area (Fewer Downloadable Fonts)
                    ☐ Unlimited Downloadable Fonts in a Document
```
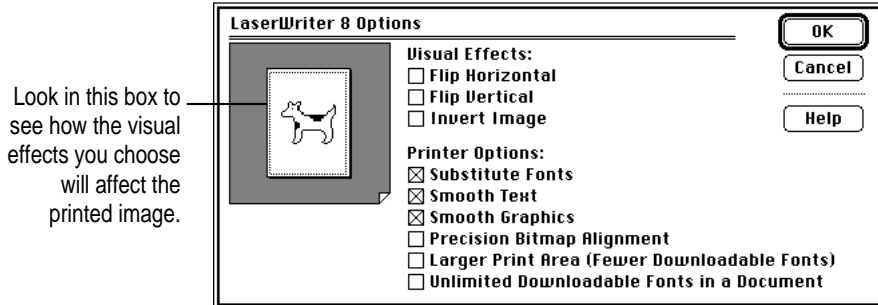
Item in dialog box	What you use it for
Flip Horizontal	Flip the page image horizontally.
Flip Vertical	Flip the page image vertically.
Invert Image	Print a black-and-white reversed image.
Substitute Fonts	Substitute the PostScript printer fonts Helvetica, Times, and Courier for the Macintosh screen fonts Geneva, New York, and Monaco, respectively.
Smooth Text	Smooth edges of letters when your printer is printing bitmapped fonts.
Smooth Graphics	Smooth ragged edges of lines in bitmapped graphics.
Precision Bitmap Alignment	Make printed bitmapped graphics more precisely match the screen image.
Larger Print Area	Print on more of your total page area.
Unlimited Downloadable Fonts in a Document	Print the document using as many downloadable fonts as you need. The fonts will be sent to the printer, used, and then removed from the printer's memory. The document will be printed more slowly.

Defining the page setup using QuickDraw GX

If you don't use QuickDraw GX software, skip this section and turn to "Printing a Document," next.

Most Macintosh programs have a Page Setup command in the File menu. You can use this command to set a variety of options. The most common options are already selected for you, but you can change them if you want to.

1   Choose Page Setup from the File menu.

The Page Setup dialog box appears, as shown in the next step. The dialog box you see may not exactly match any of the illustrations in step 2, but it works basically the same way.

2   In the dialog box, make the selections you want.

If you're using a program that doesn't take full advantage of QuickDraw GX (is not "GX-savvy"), a dialog box similar to the one below appears.

Use this pop-up menu to identify the paper or envelope size you are using.

LaserWriter 4/600 PS Page Setup

Paper: ⦿ US Letter   ○ B5 Letter
         ○ US Legal   ○ Tabloid (11×17)
         ○ A4 Letter   ○ Custom: US Letter (... ▼)

OK
Cancel
Options

Orientation:

Reduce or Enlarge: 100 %

For vertical orientation (also called *portrait*), click here.

For horizontal orientation (also called *landscape*), click here.

To enlarge or reduce the size of the printed image, click the up or down arrows. (Or you can enter a number.)

If you're using a GX-savvy program, there are two versions of the Page Setup dialog box. This is the basic version:

For vertical orientation (also called *portrait*), click here.

To see the expanded dialog box, click More Choices.

Use this pop-up menu to identify the paper or envelope size you are using.

For horizontal orientation (also called *landscape*), click here.

To enlarge or reduce the size of the printed image, select this box and enter a number.
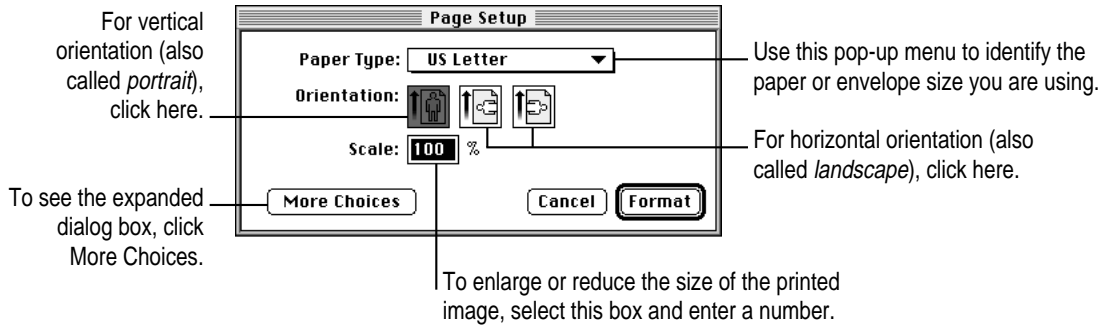
In the expanded dialog box you can select a specific printer.

To see the basic dialog box, click Fewer Choices.

To format a document for one of the desktop printers you've created, choose the printer from this pop-up menu.

To turn the printed image upside down, click Flip Vertical.

To flip the printed image horizontally, creating a mirror image, click Flip Horizontal.

To print white images as black and black images as white, click Invert Image.

3   **When you've made your choices, click Format (or OK in a program that's not GX-savvy).**

Your document is now set up for printing.

Printing a document

The LaserWriter 4/600 PS prints your document using paper from the paper cassette or from the manual feed slot—whichever option is selected when you print. For instructions on selecting and using the manual feed option, see "Printing Paper or Envelopes With the Manual Feed Slot," later in this chapter.

Note: If you use QuickDraw GX on your Macintosh, follow the steps in the next section, "Printing a Document Using QuickDraw GX."

Before you begin Set the paper selector as explained in "Choosing Face-Down or Face-Up Delivery," earlier in this chapter.

1 Select the LaserWriter 4/600 PS in the Chooser, if you haven't done so already.

You selected the LaserWriter 4/600 PS in Chapter 1, and if it's the only printer you ever use, you won't need to do so again. If you do need to switch printers, see "Switching Between Printers" later in this chapter.

2 Open the document you want to print.

3 Choose Print from the File menu.

A dialog box opens with a number of printing options.

4 Set any options you like.

The most common options are already set for you. Click Help for a description of the different parts of the dialog box. Click Options for more choices.

```
Printer: "LaserWriter 4/600 PS"                              [ Print ]

Copies: [1]    Pages: ⦿ All    ○ From: [    ]  To: [    ]    [ Cancel ]

┌Paper Source............................┐ ┌Destination........┐
                                            ⦿ Printer         [ Options ]
⦿ All  ○ First from: [ Cassette    ▼]
         Remaining from: [ Cassette ▼]       ○ File           [ Help ]
```

Item in dialog box	What you use it for
Copies	Type how many copies of the document you want.
Pages	Indicate how much of the document to print. To print the whole document, click All. To print a range of pages, type the beginning and end page numbers. As a shortcut, you can indicate the first page by leaving the "From" box blank and the last page by leaving the "To" box blank.
Paper Source	Indicate whether you want the document printed using paper in the cassette or paper fed from the manual feed slot. Choose the paper source you want from the "First from" pop-up menu. If you click All, all pages of the document will be drawn from that paper source. Click the button next to "First from" to draw only the first page of a document from the paper source chosen in the pop-up menu. You can then choose a second paper source for the rest of the document from the "Remaining from" pop-up menu.
Destination	Indicate whether you want the document printed by sending it to the printer or saved as a PostScript file.
Options	Open another dialog box, in which you can do the following: set whether a cover page prints with the document; select a black-and-white or grayscale printing method; and set options for how you want print errors reported.

IMPORTANT When you choose Cassette as the paper source, be sure the paper in the paper cassette matches the paper size that you have chosen in the Page Setup dialog box. If the paper sizes don't match, a misfeed or print error may occur.

Note: You can find many other options in the Page Setup command, also under the File menu. For details, see "Defining the Page Setup" earlier in this chapter.

4   Click the Print button.

After a moment, the green Ready/In Use light begins to blink. Then you hear the fan come on. There is a brief wait as the printer processes the document before printing. If background printing is turned on, you can continue working while the document is printing. You can also monitor and control documents that are waiting to print. See "Printing While You Use Your Computer" and "Monitoring Printing" later in this chapter.

Printing a document using QuickDraw GX

The LaserWriter 4/600 PS prints your document using paper from the paper cassette or from the manual feed slot—whichever option is selected when you print. For instructions on selecting and using the manual feed option, see "Printing Paper or Envelopes With the Manual Feed Slot," later in this chapter.

To print a document using QuickDraw GX, follow these steps:

Before you begin Set the paper selector as explained in "Choosing Face-Down or Face-Up Delivery," earlier in this chapter.

1   **Open the document you want to print.**

2   **Choose Print from the File menu.**

A dialog box appears, displaying a number of printing options. The dialog box you see may not exactly match any of the illustrations in step 3, but it works basically the same way. The most common choices are already set for you.

3   **Set any options you like.**

If you're working in a program that doesn't take full advantage of QuickDraw GX (is not "GX-savvy"), a Print dialog box similar to the one below appears.

Printer "LaserWriter 4/600 PS"   [Print]

Copies: [1]   Pages: ● All ○ From: [ ] To: [ ]   [Cancel]

Cover Page: ● No ○ First Page ○ Last Page

Paper Source: ● Paper Cassette ○ Manual Feed

Destination: ● Printer   ○ Disk File
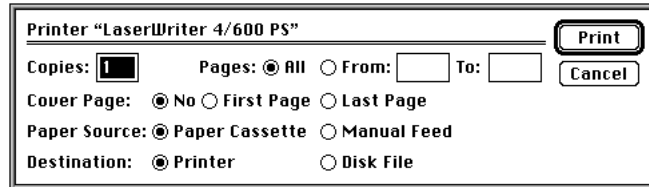
If you are using a GX-savvy program, there are two versions of the Print dialog box. This is the basic version:

To identify the desktop printer you want, use this pop-up menu.

To see the expanded dialog box, click More Choices.
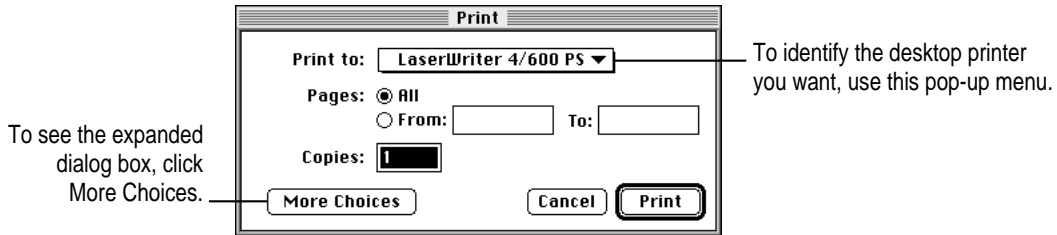
In the expanded dialog box you can make additional choices.

To see more options, click an icon in this box. To see more icons, use the scroll bars.

To see the basic dialog box, click Fewer Choices.
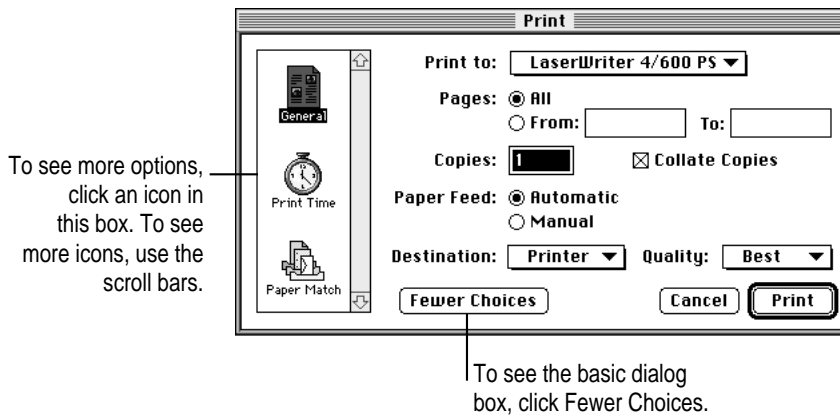
Click this icon	To do this
Print Time	Schedule print requests.
Paper Match	Set options for cropping, scaling, and tiling.

4 **When you are satisfied with the settings, click Print.**

If necessary, the printer turns itself on and, after a few moments, begins printing your document.

Printing with a desktop printer

You can also print documents without leaving the Finder, using one of the two methods described here. These methods are particularly efficient when you have a number of documents you want to print at once.

■ Drag the icons of the documents you want to print to the desktop icon of the printer you want to use.

$\cdots\cdots\cdots\cdots\cdots\blacktriangleright$

or

■ Select the icons of the documents you want to print and choose the Print command from the File menu. The documents will be printed on the default printer. (See "Switching Between Printers" later in this chapter.)

In either case, the computer will show you the Print dialog box so you can choose printing options. Make your choices, then click the Print button.

After a few moments, the document starts to print. If background printing is turned on, you can continue working while the document is printing. You can also monitor and control the documents that are waiting to print. (See "Printing While You Use Your Computer" and "Monitoring Printing" later in this chapter.)

Printing complex documents

The more complex a document is, the more memory the LaserWriter 4/600 PS needs to print it. A complex document is one that uses many different fonts that aren't built into the printer. If you print a document too complex for the amount of memory your printer has, you'll get a message saying you have a PostScript error and the document won't print.

Sometimes you can solve the problem by turning on the Unlimited Downloadable Fonts feature in the Page Setup Options dialog box. If that doesn't work, you can try using only built-in fonts. For a list of those fonts, see "Font List" in Chapter 5. You can also try simplifying any pictures you have in your document.

If you print complex documents often, you may want to purchase a memory upgrade for the LaserWriter 4/600 PS. The printer comes with 2 MB of memory, which can be upgraded to 6 MB. See Appendix C for more information about expanding your printer's memory.

You can tell how much memory your printer has by printing the startup page. To print the startup page, unplug the printer, wait a moment, then plug it in again; or use the Apple Printer Utility to restart the printer. If the startup page doesn't print, the feature may be turned off. Use the Apple Printer Utility to turn on the printing of startup pages. See "Using the Apple Printer Utility Program" later in this chapter.

Printing paper or envelopes with the manual feed slot

If you want to use paper that is different from what's already in the paper cassette, you can use the manual feed slot to insert sheets one at a time as the document is printed. You can also use the slot to print envelopes, heavier paper, or paper of nonstandard sizes. Envelopes should always be manually fed into the paper feed slot. Make sure that the paper delivery lever is pressed down for face-up delivery. (For more information about setting the paper delivery method, see "Choosing Face-Up or Face-Down Delivery" earlier in this chapter.) As a general rule of thumb, when you manually feed paper, envelopes, or transparencies, you should always select face-up delivery.

Note: If you are printing envelopes, choose an envelope paper size from the Page Setup dialog box. Additionally, the manuals for the program you're using to format the envelope text may offer advice on adjusting margins to line up the address on different kinds of envelopes.

1 **When you're ready to print, choose Print from the File menu or drag the document icon onto a desktop printer icon.**

The print dialog box opens.

2 **Choose Manual Feed from the Paper Source pop-up menu.**

3 **Click Print.**

You see a message asking you to get ready to insert paper into the printer.

4 **Don't insert your paper yet. Click OK.**

The green Ready/In Use light flashes to indicate that the printer is processing the document for printing.

5 **Wait until the amber Paper Out light begins to flash on the printer.**

6 **Insert a sheet of paper or envelope as shown.**

Be sure to keep the paper straight so it feeds correctly. The printer will draw the paper in about 1/8th of an inch. Once the paper is drawn into the printer you can release it.

The sheet or envelope you inserted is printed. If the document has additional pages, a message on your screen will alert you each time a new sheet or envelope is needed. To avoid paper jams, always wait for the amber Paper Out light on the printer to begin flashing before inserting a new sheet or envelope.

Avoiding manual feed paper jams

If you experience paper jams when feeding paper manually into the printer, try the following:

- Be sure to wait until the amber Paper Jam light blinks before inserting paper in the manual feed slot. When the light blinks, insert the paper into the slot until the printer draws the sheet in approximately 1/8 inch. You can then release the paper.

- Use face-up paper delivery to reduce paper bending. Press down the paper-delivery lever in the back of the printer.

- Always align the paper so that it enters straight into the manual feed slot (be careful not to position the paper at an angle).

- Allow the paper to be drawn automatically into the printer. Don't push or otherwise guide the paper as it enters the slot.

Printing on both sides of a page

Follow these steps to print a two-page document using both sides of the paper.

1   **Print the first side of the page using either the manual feed option or the paper cassette.**

2   **Take out the printed sheet and turn it over so the printed side is facing down and the top of the page is nearest the manual feed slot.**

3   **Print the second side using manual feed.**

Always use manual feed for printing the second side. Be sure to wait for the amber Paper Out light to flash before inserting the paper. To avoid jams, don't load already printed pages into the paper cassette.

Switching between printers

If you have more than one printer available, you can select which you want to use. The printer you select is called the default printer. All your documents will be printed on the default printer until you select a new one.

—— A bold outline indicates that this is the default printer, the printer you will use until you indicate otherwise.

—— A plain outline indicates that this is not the default printer.

To change the default printer, use one of these three methods, as described in the next sections.

■ Drag the document you want to print to a desktop printer icon, and it will automatically become the default printer.

■ Select the desktop printer icon and use the Printing menu to set the printer as the default.

■ Select a new printer using the Chooser.

Note: Switching between printers may change how much information you can fit on a page. It's best to choose a printer before you spend much time formatting the document.

Drag the document you want to print to a desktop printer icon

Drag the icon of any document you want to print to the icon of the printer you want to use. (See "Printing With a Desktop Printer" earlier in this chapter.)

Select the printer using its desktop printer icon

If you already have a desktop printer icon for the printer you want to use, follow these steps to select the printer without immediately printing anything on it:

1   **Click the icon of the desktop printer you want to use.**

A Printing menu appears on the menu bar at the top of the screen.

2   **Choose the Set Default Printer command from the Printing menu.**

Until you choose another printer, the Print command will send your documents to this printer.

Select a new printer using the Chooser

If you don't have a desktop printer icon for the printer you want to use, you must select the printer using the Chooser. The Chooser will then create a desktop printer icon for the printer that you select.

1   **Select the Chooser from the Apple menu.**

2   **Select the printer that you want.**

3   **Click the Setup button to set up the printer.**

4   **Close the Chooser by clicking the close box in the upper-left corner.**

When you close the Chooser, it creates a desktop printer icon for the printer you selected.

Working with desktop printer icons

To create a desktop printer, select the printer using the Chooser. After you close the Chooser, the icon will appear on your desktop. See "Select a New Printer Using the Chooser," in "Switching Between Printers," the previous section in this chapter.

You may also do the following with desktop printer icons:

- **Throw away the icon.** Drag the icon to the Trash. You can't throw away a desktop printer icon while the printer is printing a document. (You can create another desktop printer icon for that printer whenever you like.) *Note:* You must always have at least one printer icon on your desktop. If you throw away the last icon, it will immediately be created again.

- **Rename the icon.** Rename the icon as you would any other Finder icon. Click the name to highlight it, then type the new name. This changes the name of the icon, not the name of the printer.

- **Move the icon.** You may drag the icon anywhere you like on the desktop. However, you may not move it off the desktop.

- **Create an alias for the icon.** You may create an alias for the icon as you would any Finder icon, by selecting the icon and choosing the Make Alias command from the File menu. The alias may be moved anywhere on or off the desktop.

Determining the status of a printer by looking at its icon

You can tell the status of a printer by looking at its desktop icon:

Plain icon indicates a printer that is not currently chosen for printing.

Default icon indicates the printer you have currently chosen to print on.

Printing icon indicates a document is printing on this printer.

Stopped icon indicates you have stopped the print queue.

Error icon indicates there is an error on this printer. Double-click the icon to see a message.

Disabled icon indicates this desktop printer is not available.

Printing while you use your computer

You can continue to work on your computer while printing on the LaserWriter 4/600 PS. The feature that gives you this ability is called *background printing,* and is automatically turned on when you install the LaserWriter 4/600 PS software.

To turn background printing on or off, follow these steps:

1 **Select Chooser from the Apple ( ) menu.**

The Chooser opens.

2 Click the LaserWriter 8 icon in the Chooser.

3 Click to turn background printing on or off.

└────┴────────── Click On or Off.
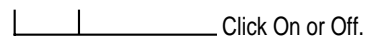
4 Click the close box in the upper-left corner of the Chooser.

Once background printing is turned on, it is in effect whenever you print, until you turn it off. When you click Print in the Print dialog box, a message appears for a moment to tell you the document is being prepared. Once the message disappears, you can continue other work. Your computer may pause occasionally while it processes the document for printing. See "Monitoring Printing," next, for more information.

Monitoring printing

If you are using background printing, you can use the desktop printer features to monitor and control the documents that are waiting to print. To learn how to turn background printing on and off, see "Printing While You Use Your Computer," earlier in this chapter.

1 **Double-click the desktop printer icon you're interested in.**
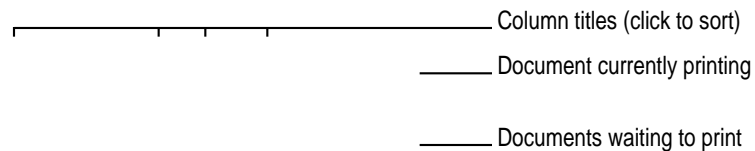
A window opens listing the documents that are printing or waiting to print:

——————————— Column titles (click to sort)

——————— Document currently printing

——————— Documents waiting to print

Watching the status messages can be helpful when troubleshooting printing problems. When more than one job is waiting to be printed, a list of print jobs appears in the waiting list, showing the order in which they will be printed (when sorted by print time.)

2 **Choose what you'd like to do.**

■ **To cancel a print request,** select it by clicking its title or icon and click the Remove button. You can only select the currently printing document by clicking its title. (You can select more than one item at a time by holding down the Shift key while clicking.) You can also drag the icon for the print request to the Trash. Note that these methods delete only the print request (also referred to as a spool file), not the document itself.

- **To put a print request on hold,** select it and click the Hold button. The print request will stay on hold until you select it again and click the Resume button. You can also put the document that's currently printing on hold by dragging it to the list of documents waiting to print (lower part of the window).

- **To indicate that a print request is urgent,** select it and put it on hold. Next, choose Set Print Time from the Printing menu. In the dialog box that opens, click Urgent. This moves the print request to the top of your list.

- **To indicate that a print request should not print until a future time,** select it and choose Set Print Time from the Printing menu. In the dialog box that opens, click At Time, then set the time you want.

- **To change the order of the items waiting to print,** move their place in the list by dragging their titles up or down in the list.

- **To sort the list of documents waiting to print,** click the title of the column you want to sort by. For example, to sort by the name of the document, click "Document Name." (You can also sort by choosing the commands in the View menu.) The column title you sorted by is underlined. Sorting the items does not change the order in which they will print. To see that order, sort by Print Time.

- **To temporarily stop all documents from printing on this printer,** choose Stop Print Queue from the Printing menu. To resume using the printer, choose Start Print Queue from the Printing menu. *Shortcut:* The Printing menu for starting and stopping the print queue is available without opening the window for the printer, so long as the printer's icon is selected on the desktop.

- **To move a print request from one printer to another printer of the same type** (for example, from a LaserWriter 4/600 PS to a LaserWriter 16/600 PS), drag the icon for the print request to the icon of the printer where you want to move it. You can only move a print request from a LaserWriter 4/600 PS to another PostScript printer. The printing software won't let you move a print request to an incompatible printer. For example, you can't move a request from a LaserWriter printer to a StyleWriter printer.

Using the Apple Printer Utility program

The Apple Printer Utility program allows you to set the default settings that control how various aspects of the LaserWriter 4/600 PS work. The utility is placed in the Apple LaserWriter software folder when the printer software is installed. Use it to choose the basic printer settings that you want to use for all documents.

You can also change printer settings without changing the printer's basic defaults by changing the settings in the Print and Page Setup dialog boxes.

Use the Apple Printer Utility to

- view information about the printer, such as the AppleTalk printer name and the total number of pages the LaserWriter 4/600 PS has printed
- name the printer
- download fonts to the printer
- remove fonts
- print font samples
- turn printing of a startup page on or off
- set the print density to lighten or darken printing
- set paper-handling options
- set job-handling options
- send PostScript files to the printer
- restart the printer

Opening the Apple Printer Utility

The Apple Printer Utility has two windows: the Printer Selector window, which is similar to the Chooser, and the printer features window, which you use to view or change the printer's settings.

1   Double-click the Apple Printer Utility icon.

The Installer puts the Apple Printer Utility in the Apple LaserWriter Software folder. You can move it wherever you like.

You see the Printer Selector window. If you're not connected to a network, and the LaserWriter 4/600 PS is the only laser printer you have available, skip to step 3. Otherwise, continue with step 2 to choose the appropriate network zone.

2   Choose the zone where the printer is located, if your network has zones.

The Printer Selector window then displays the printers in the selected zone.

3   Click the name of the LaserWriter 4/600 PS printer.

4 **Click Open Printer.**

You see the printer features window.

The printer features window shows categories of printer information and settings that you can change: Printer Information, Printer Preferences, and Job Defaults.

5 **To view or change settings under a category, click the arrow beside the category name to open the category and display its information and options.**

Additional options may appear that you can also open and work with. When you are finished changing options in a particular category, you can click the arrow again to collapse the options.

You can click the Set Defaults button to reset the utility's settings to the original software defaults.

6 **After viewing the information and making changes, click the Send button to send your changes to the printer.**

You can click the Update Info button at the top of the window to view the latest settings of the selected printer. If you have not sent your changes to the printer by clicking Send, you can click Update Info to cancel your changes and reinstate the original settings.

7 **Click the close box at the upper-left corner to close the window.**

The next sections describe the configuration procedures that you can perform with the Apple Printer Utility in detail. First select and open the printer in the Printer Selector window. The information and procedures described in each section then present how to work with the printer features window of the utility.

Viewing printer information

You can view information about your LaserWriter 4/600 PS in the printer features window.

■ **Open the Printer Information category.**

You see a list of printer information.

Naming the printer

To help users easily select the LaserWriter 4/600 PS printer from their computers, give the printer a unique name based, for example, on its location or the group of users who commonly accesses it. Use the following procedure to name or rename any LaserWriter 4/600 PS printer on the AppleTalk network.

1 **Open the Printer Preferences category.**

You see a list of preferences.

2 **Open the Name category.**

The name panel appears with the selected printer's current name.

3 **Type a new name.**

You can enter a name of up to 31 characters.

4 **Click Send to send the new name setting to the printer.**

Downloading fonts to the printer

You can download additional fonts to the printer's RAM to speed up printing. You do not have to download fonts to use them in printed documents, but doing so can make printing faster than storing fonts only on your computer. Fonts downloaded to the printer's RAM are lost whenever the printer is unplugged.

If you often download several or more fonts, or print complex documents with more fonts and graphics than the printer can process without errors, it is recommended that you upgrade your printer's memory. For more information about upgrading the LaserWriter 4/600 PS printer memory, see Appendix C.

1 **Open the Printer Preferences category.**

You see a list of preferences.

2 **Open the Fonts category.**

The Fonts panel appears.

You see the font names, their types, and current locations listed in the panel. Fonts are located in the printer's ROM (a black chip icon), printer's RAM (a white chip icon). You cannot attach a hard disk to the LaserWriter 4/600 PS, so the SCSI option is not available.

3 **Click Add.**

A file selection dialog box appears.

4 **Select the fonts you want to download.**

Double-click the font name in the list, or select the name and click Add.

5 **With the Destination pop-up menu automatically set to RAM, click Send.**

Removing fonts

You can remove fonts from the printer's RAM when you no longer need them.

1   Open the Printer Preferences category.

You see a list of preferences.

2   Open the Fonts category.

The Fonts panel appears.

You see the font names, their types, and current locations listed in the panel. Fonts are located in the printer's ROM (a black chip icon) or the printer's RAM (a white chip icon.) You cannot remove the fonts in the printer's ROM.

3   Select the fonts you want to remove.

4   Click Remove.

Printing font samples

You can print a list of the fonts currently stored in the printer's memory.

■ **Choose Print Font Samples from the File menu.**

Turning the startup page on or off

The LaserWriter 4/600 PS normally prints a sample page when you plug in the printer. This page shows the printer's name, the total number of pages printed, the amount of memory in the printer, and printer fonts. You can turn this feature off if you wish.

1 Open the Printer Preferences category.

You see a list of preferences.

2 Open the Startup Page category.

The Startup Page panel appears.

3 Click the checkbox to turn the startup page feature on or off.

When an X appears in the checkbox, the printer is set to print the startup page.

4 Click Send to send the startup page setting to the printer.

Setting the print density

If your documents are printing too light or too dark, you can adjust the print density of the printer to print lighter or darker text and images.

1 **Open the Printer Preferences category.**

You see a list of preferences.

2 **Open the Print Density category.**

The Print Density panel appears.

3 **Drag the slider in the appropriate direction to increase or decrease the print density.**

4 **Click Send to send the print density setting to the printer.**

Setting paper-handling options

You can specify the default paper size for paper that will most often be in the paper cassette. It's a good idea to set the default paper size to the size of paper you plan to routinely use.

1 Open the Job Defaults category.

You see a list of job default categories.

2 Open the Paper Handling category.

The Paper Handling panel appears.

3 Choose a default paper size for the cassette tray from the pop-up menu.

4 Click Send to send the paper-handling settings to the printer.

Setting job-handling options

You can set the printer to maintain contact with the computer until all pages of a job are finished printing. This allows you to receive printer messages, such as a message telling you that the printer is out of paper, while a job is printing. You can also have the printer break contact with the computer once the print job has been sent to the printer (but is still being processed). This provides faster handling of print jobs by allowing the printer to begin processing the next job before all pages of the previous job are printed. However, you may not receive feedback about paper outages and problems such as paper jams after the job has been processed and the connection broken.

1   Open the Job Defaults category.

2   Open the Job Handling Configuration category.

3   Click the checkbox to specify when the connection with the computer should be broken.

When an X appears in the checkbox, the printer will wait for all pages to be printed before closing the connection.

4   Click Send to send the job-handling configuration settings to the printer.

Sending PostScript files to the printer

You can download PostScript files to the printer to print a PostScript program or Encapsulated PostScript (EPS) file, or to run a PostScript program to change the internal settings of the printer. You can create a PostScript file in a variety of text-editing programs or by printing any document to a file (just click the File button in the Print dialog box).

To send a PostScript file to the printer, follow these steps:

1 Choose Send File from the File menu.

The Send File dialog box is displayed for the currently selected printer.

2 Select the PostScript file that you want to send to the printer.

3 Click Add.

4 Click Send.

Restarting the printer

You may need to restart the printer to clear its memory if you have any problems printing.

1 Choose Restart Printer from the Utilities menu.

A dialog box appears asking you to confirm that you want to restart the selected printer.

2 Click Restart.

When the printer lights stop blinking, the printer is ready to print.

The same effect can be achieved by physically unplugging the printer, counting to five, and plugging it in again.

IMPORTANT If the LaserWriter 4/600 PS is on a network shared by other users, make sure that no one is attempting to use the printer when you restart it.

Quitting the Apple Printer Utility

To quit the Apple Printer Utility:

■ **Choose Quit from the File menu.**

3 Maintaining Your Printer

This chapter describes the few things you need to do to maintain your printer.
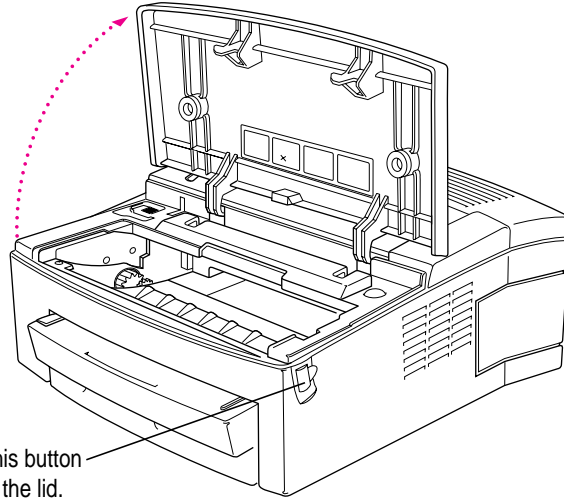
Cleaning the printer mirror

The LaserWriter 4/600 PS printer uses a mirror to reflect its laser and create printed images on paper. You can clean the mirror whenever you replace a toner cartridge or when white lines or streaks appear on printed documents. This can occur from toner or paper dust collected on the mirror.

WARNING Don't touch the mirror with your fingers. Touching the mirror can leave oil on the mirror surface and can result in permanent damage to the mirror. Use only the mirror brush provided inside the printer case to clean the mirror.

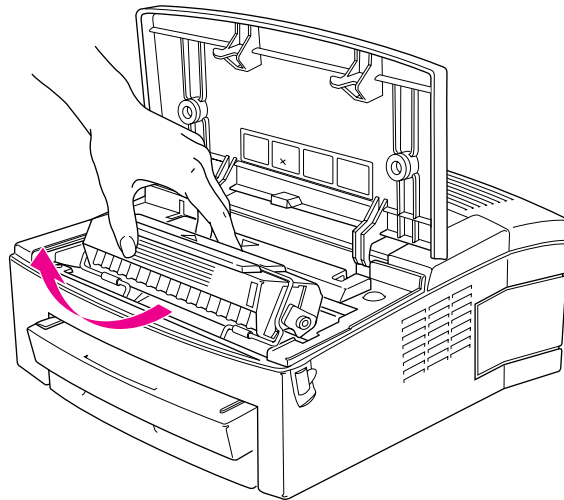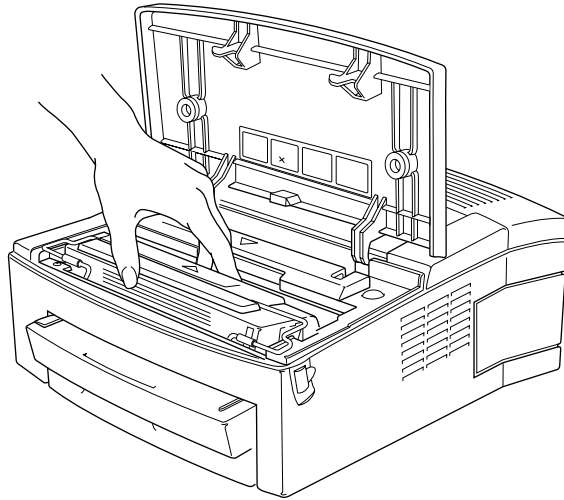Follow these steps to clean the mirror in the printer:

1 **Open the printer lid.**

Press this button
to open the lid.

You can find illustrated steps for cleaning the mirror on the inside of the printer lid, if you need them.

2 **Remove the toner cartridge.**

Grasp the cartridge by the center and pull horizontally as you rotate the cartridge upwards.

Whenever you remove the toner cartridge from the printer, cover it to protect it from exposure to light, which can shorten the toner cartridge's print life. To avoid damaging the cartridge, don't shake it or try moving its parts.

WARNING Don't place your hand inside the toner cartridge cavity or touch the mirror to test for toner or dust.
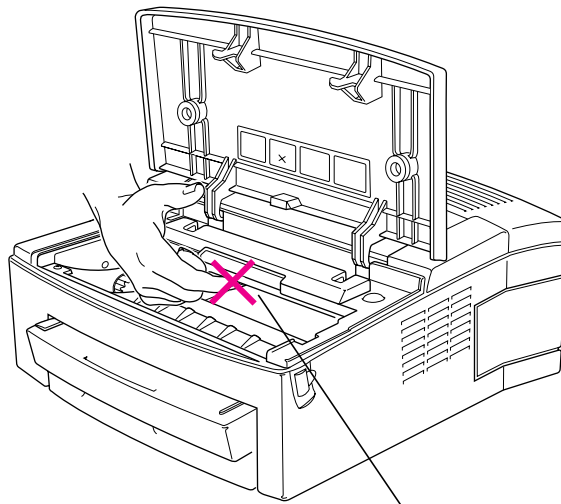
Mirror located under here.

3 **Remove the mirror brush from its holder inside the printer.**

4 Insert the mirror brush inside the toner cartridge cavity on the right side as shown. Brush the entire length of the mirror back and forth with slow steady strokes. A few strokes is usually enough.
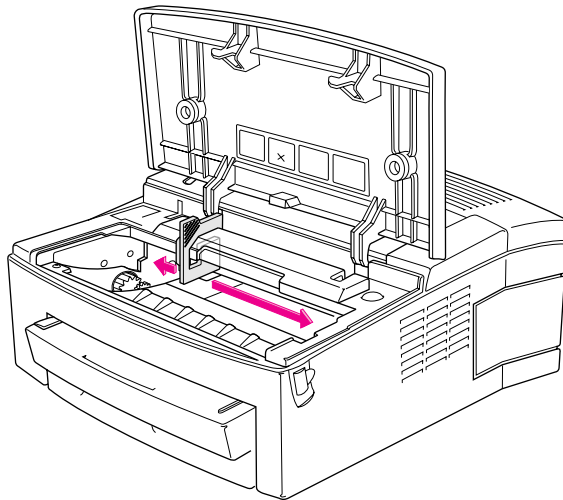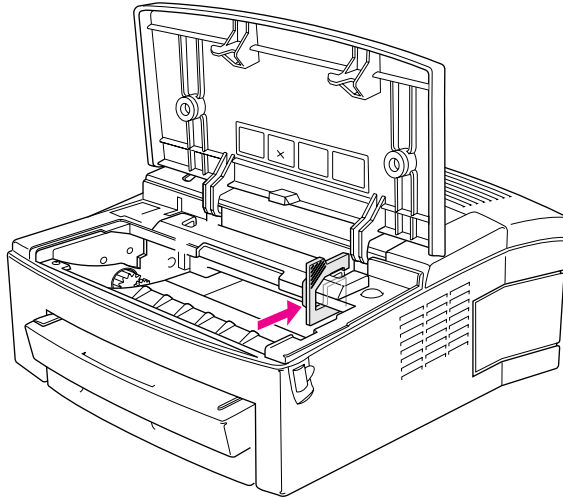
5   **Remove the brush and replace it in its holder.**

6   **Insert the cartridge into the printer.**

Align these arrows.
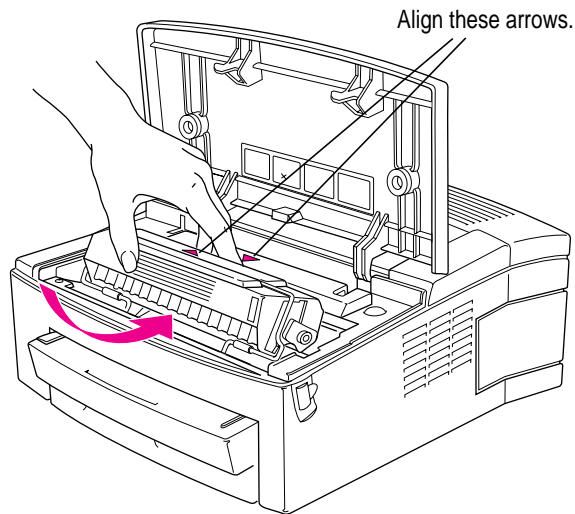
7   **Close the printer lid.**

Replacing the toner cartridge

Toner is the powdered substance that produces the image on the paper. When the LaserWriter starts printing lighter than it usually does, it's probably time to replace the toner cartridge, although you might want to try redistributing the toner in the cartridge (as explained in "Installing the Toner Cartridge," in Chapter 1) or adjusting the print density first (as explained in "Setting the Print Density" in "Using the Apple Printer Utility Program" in Chapter 2).

To replace the toner cartridge, follow the instructions in "Installing the Toner Cartridge" in Chapter 1.

Cleaning the exterior

Before you clean the LaserWriter, unplug the power cord. Then wipe the exterior with a clean, soft, damp cloth. Use a mild soap or detergent if necessary, but never ammonia-based or alcohol-based cleaners. Be careful not to get any liquid in any of the receptacles.

WARNING Don't use ammonia-based or alcohol-based cleaners on or around the printer. Ammonia can react with the toner and alcohol can damage the plastic case.

4 Tips and Troubleshooting

This chapter provides solutions to printing problems you may encounter while using your printer.

WARNING If you have a problem with your LaserWriter 4/600 PS and nothing presented in this chapter solves it, consult the service and support information that came with your printer for instructions on how to contact an Apple-authorized service provider or Apple for assistance. If you attempt to repair the LaserWriter 4/600 PS yourself, any damage you may cause to the LaserWriter 4/600 PS will not be covered by the limited warranty on your LaserWriter 4/600 PS. Contact an Apple-authorized dealer or service provider for additional information about this or any other warranty question.

Safety precautions

Consider these rules of safety before you open the printer or attempt to troubleshoot problems:

- Don't attempt to disassemble the printer.

- Don't use oil inside the printer.

- Don't use ammonia-based cleaners on or around the printer. They may react with the toner.

- Don't use alcohol-based cleaners on or around the printer. They may react with the plastic case.

- Don't leave the access door to the toner cartridge cavity open. Exposing the toner cartridge to light may damage the cartridge.

- Don't manually open the drum-protection shutter (the moveable shield on the bottom of the toner cartridge).

- Be sure the power cord is within easy reach, should you want to unplug the printer at any time. Since the LaserWriter 4/600 PS has no manual power switch, unplugging it is the only way to turn the power completely off.

- Certain switches are automatically set when the toner cartridge is installed and the lid closed. Never try to defeat these interlock switches inside the printer. For example, never try to print a document with the printer lid open.

IMPORTANT The fixing assembly in the printer operates at very high temperatures. When you open the printer, don't touch the fixing assembly.
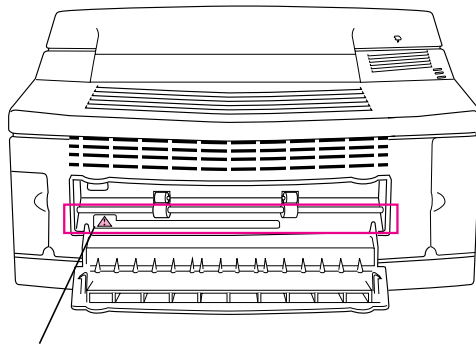
Fixing assembly
(This area gets very hot.)

Some odor from the heat of the printing process is normal.

About paper

Many problems (such as toner smearing, paper curling, or improper paper feeding) can be caused by the paper you are using. To assure good results, use only paper, envelopes, and transparencies that are manufactured for use with laser printers and photocopy machines.

Make sure any paper you use is free of rips, wrinkles, dust, and oil stains. Paper with cutouts or perforations is not recommended.

Here is a list of papers to avoid:

■ extremely slick or shiny paper

■ erasable typewriter paper

■ paper that is highly textured

■ paper that is nonstandard in size

■ coated paper

■ stapled paper

■ envelopes that contain fasteners or snaps

■ multipart forms

■ paper with holes in the print area

WARNING Do not use paper printed using low-temperature dyes or thermography. Such materials can peel away from the paper or melt inside the LaserWriter and cause damage. Colored paper can be used as long as the color is added during the paper-making process, not after, and the color can withstand the heat generated by the printer's fixing assembly (approximately 190° C or 374° F). Envelopes, transparencies, and labels are acceptable as long as they contain no fasteners and can withstand the heat generated by the fixing assembly.

The paper cassette can hold up to 100 sheets of U.S. Letter or A4 paper.

Checking the printer's status lights

Always check the status lights first when a printing problem occurs. These often tell you the cause of the problem.

Ready/In Use light
Paper Out light
Paper Jam light
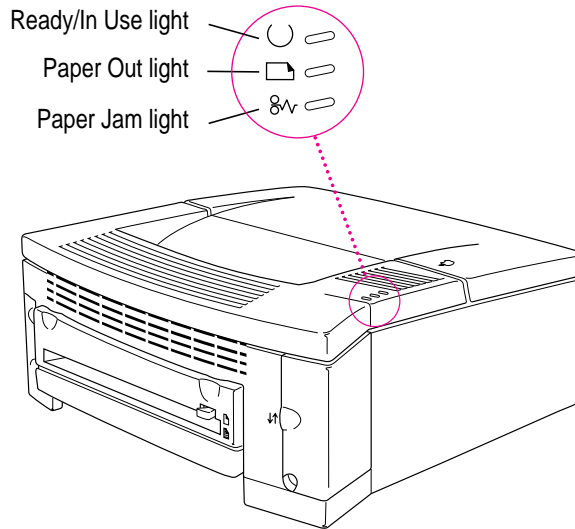
- *The green Ready/In Use light* glows steadily whenever the printer is plugged in, and blinks when it is printing.

- *The amber Paper Out light* glows steadily when there is no paper in the cassette or the paper cassette is removed, and blinks when the printer is waiting for a sheet of paper, envelope, or transparency to be fed manually into the paper slot.

- *The amber Paper Jam light* glows steadily when any obstruction or misfeed occurs in the paper path.

If the status lights are not on, check to see if the printer is unplugged, if a toner cartridge is installed, or if the printer cover is open.

If both the Paper Out and Paper Jam lights flash or glow at the same time, the printer requires service.

Removing paper jams

To avoid paper jams, make sure that the paper size indicated in the Page Setup dialog box matches the actual paper size and that the paper cassette is properly loaded. Use only recommended paper types (see "About Paper" earlier in this chapter for advice on choosing paper.)

If you are using manual feed, be sure to wait until the amber Paper Out light blinks before inserting a new sheet.

Paper jams are sometimes caused by moving or jarring the printer.

If the amber Paper Jam light is on, follow these steps until the Paper Jam light goes off:

1   Remove the paper cassette.

Be sure the paper is loaded correctly in the paper cassette. The stack of paper must fit under the corner brackets. The sides of the paper should also fit flat and even within the sides of the cassette.

2   With the paper cassette removed, look inside the printer and remove any jammed sheets you see.
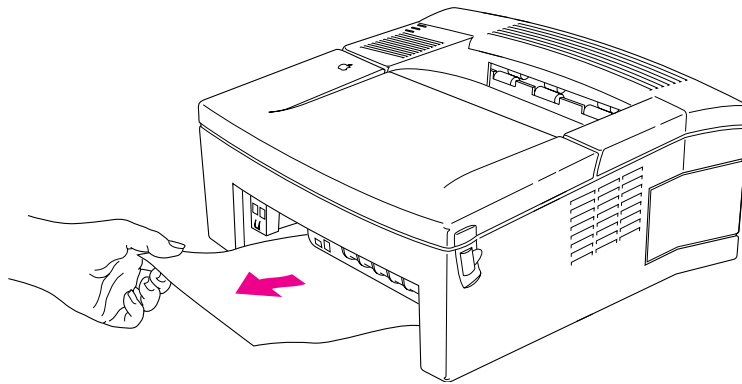
3   Replace the paper cassette.

4 **Open the printer lid and remove the toner cartridge.**

With the toner cartridge out of the way, remove any jammed sheets you see.
Pull the sheets straight out. Avoid pulling at an angle that might tear the
paper and leave scraps inside the printer.
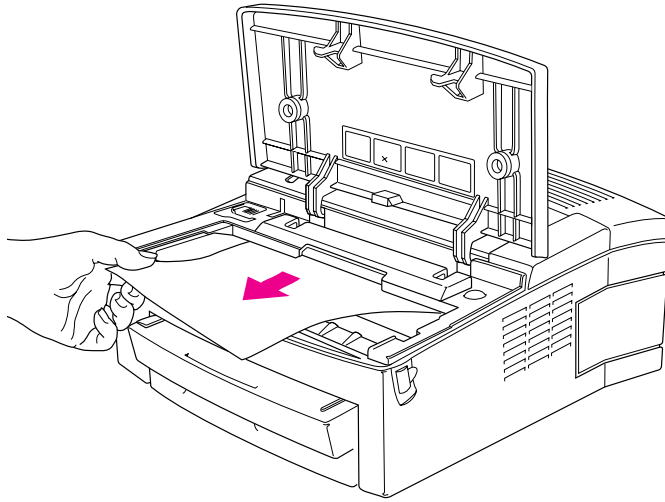
5 Open the printer's back door as shown below. Press the paper release lever and pull any jammed sheets out through the front.

This type of jam is often caused by an interruption in printing, such as a power outage or opening the printer lid during printing.
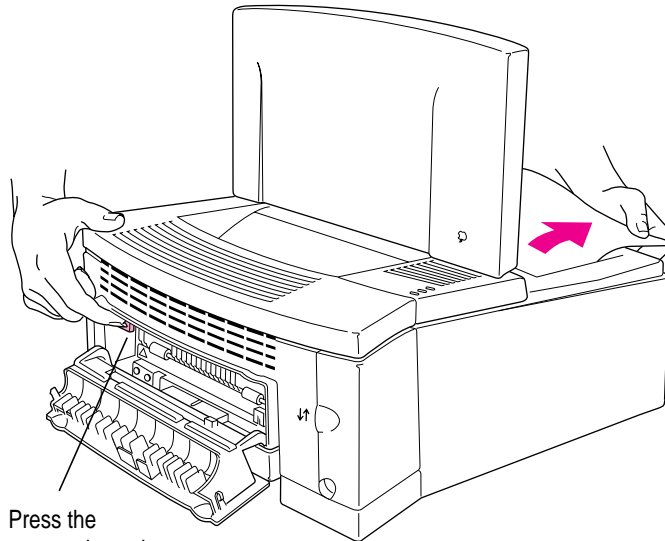
Press the
paper release lever.

6 If paper is wrapped around the roller, pull it down and out.
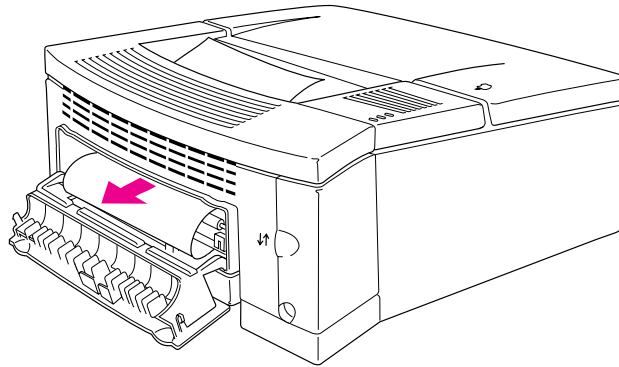
Close the printer's back door and replace the toner cartridge when you're finished.

Correcting installation problems

If you open the Chooser and don't see the LaserWriter 8 icon or LaserWriter 4/600 PS printer name, you probably need to install the appropriate printer software. For instructions, see "Installing Your Printer Software" in Chapter 1.

If a message tells you that installation was not successful—or if you have to repeatedly swap between the same two disks—check to make sure you restarted your computer with all your software extensions off as explained in Chapter 1. If that doesn't work, try removing corrupted fonts or performing a Custom Installation, as described in the next two sections.

Removing items from your Fonts folder to solve installation problems

Items in your current Fonts folder can interfere with successful installation of the printer software. To correct the problem, follow these steps:

1 **Quit all programs you are currently running.**

2 **Open the Fonts folder (inside the System Folder) on your Macintosh.**

3 **Drag the following files out of the Fonts folder. (Look for files with exactly these names.)**

- Avant Garde
- Bookman
- Delphian
- Garamond Narrow
- Helvetica Black, Helvetica Compressed, and Helvetica Narrow
- Lubalin Graph
- Lucida Bright
- Machine
- Nadianne
- New Century Schlbk
- Old English Text
- Onyx
- Oxford

- Swing
- Zapf Chancery
- Zapf Dingbats
- Zeal

You can put the fonts temporarily into a new folder and drag the folder to your desktop. Then, after you install the LaserWriter 4/600 PS software (including these fonts), you can drag the temporary folder to the Trash. Installing the LaserWriter 4/600 PS places the latest versions of these fonts on your hard disk, so you no longer need the older versions.

4 **Repeat the software installation procedure in Chapter 1.**

For more details about fonts, see Chapter 5.

Using the Custom Installer to solve installation problems

You can install the printer software without installing the fonts that come with the printer. (The disadvantage is that you won't be able to use these fonts if you don't already have them.)

1 **Quit any programs you are running.**

2 **While holding down the Shift key on the keyboard, choose the Restart command from the Special menu. Don't release the Shift key until you see the "Extensions Off" message on your screen or until your normal desktop appears.**

3 **Insert the *Printer Disk 1* disk into a floppy disk drive.**

If necessary, open the disk icon.

4 **To start the Installer program, double-click its icon.**

5 **In the Welcome dialog box that appears, click Continue.**

6 **In the Installer dialog box, choose Custom Install.**

Choose Custom Install from this pop-up menu.

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│  ┌──────────────────┐                    ┌──────────┐   │
│  │ Easy Install  ▼  │                    │   Help   │   │
│  └──────────────────┘                    └──────────┘   │
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│  │                                                    │ │
│  │ Macintosh printer software for Apple LaserWriter   │ │
│  │ PostScript Printers.                               │ │
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│  └────────────────────────────────────────────────────┘ │
│  ┌─Destination Disk─────────────┐      ┌──────────────┐  │
│  │                   ┌─────────┐ │      │    Quit      │  │
│  │                   │Eject Disk│ │      └──────────────┘  │
│  │   ▭               └─────────┘ │      ┌──────────────┐  │
│  │ Hard Disk        ┌──────────┐ │      │   Install    │  │
│  │                  │Switch Disk│ │      └──────────────┘  │
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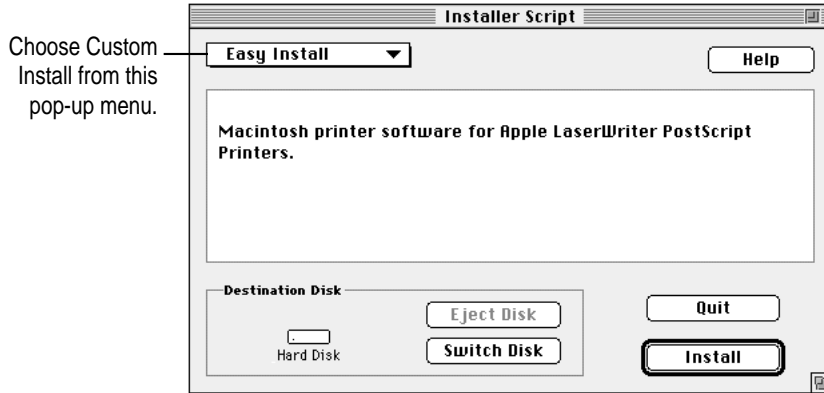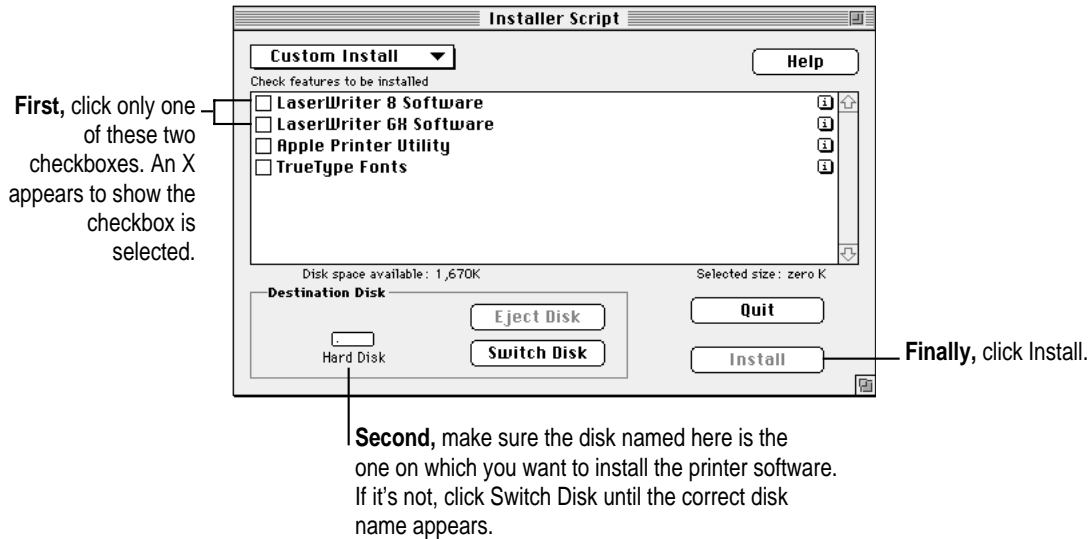
7 **In the Custom Install dialog box, click the appropriate checkboxes.**

Click the LaserWriter 8 Software checkbox to install the standard printer software, or click the LaserWriter GX software checkbox if you are using QuickDraw GX.

Click the Apple Printer Utility checkbox to install the program used to change the printer's default settings.

First, click only one of these two checkboxes. An X appears to show the checkbox is selected.

Second, make sure the disk named here is the one on which you want to install the printer software. If it's not, click Switch Disk until the correct disk name appears.

Finally, click Install.

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│  ┌──────────────────┐                    ┌──────────┐   │
│  │ Custom Install ▼ │                    │   Help   │   │
│  └──────────────────┘                                   │
│  Check features to be installed                         │
│  ☐ LaserWriter 8 Software                        ⓘ ⇧   │
│  ☐ LaserWriter GX Software                       ⓘ     │
│  ☐ Apple Printer Utility                         ⓘ     │
│  ☐ TrueType Fonts                                ⓘ     │
│                                                    ⇩   │
│  Disk space available: 1,670K      Selected size: zero K│
│  ┌─Destination Disk─────────────┐      ┌──────────────┐  │
│  │                   ┌─────────┐ │      │    Quit      │  │
│  │                   │Eject Disk│ │      └──────────────┘  │
│  │   ▭               └─────────┘ │      ┌──────────────┐  │
│  │ Hard Disk        ┌──────────┐ │      │   Install    │  │
│  │                  │Switch Disk│ │      └──────────────┘  │
│  └───────────────────└──────────┘─┘                       │
└─────────────────────────────────────────────────────────┘
```

8 **When you see a message on your screen, follow the directions and insert the next disk.**

The Installer ejects disks and asks you to insert others. Keep following the instructions on the screen until the installation is complete.

9 **When you see a message reporting that installation was successful, click Restart.**

The Installer restarts your Macintosh.

Solving some common problems

The computer crashes while attempting to print.

When a computer suddenly stops working—either a message on the screen tells you a system error occurred or the mouse and keyboard act as if they're disconnected—the computer has crashed.

If your computer often crashes after you tell it to print a document, your printing software may have become corrupted. Reinstall the printer software by following the instructions in "Installing Your Printer Software" and "Telling Your Computer to Use the LaserWriter 4/600 PS" in Chapter 1.

The Macintosh doesn't recognize the LaserWriter 4/600 PS.

If you have selected the LaserWriter 4/600 PS printer in the Chooser but nothing prints, or you get a message that no LaserWriter 4/600 PS is connected, one of the conditions in the list that follows may be the cause.

Note: Before you try to solve the problem, open the desktop printer icon to see if there are any error messages there, and to check how many print requests are waiting. If you repeatedly tried to print a document, there may be multiple copies waiting to print. You can delete anything you don't want by selecting its title or icon, then clicking the Remove button. See "Monitoring Printing" in Chapter 2.

■ The printer has been unplugged. Make sure it is plugged securely into an outlet (the green Ready/In Use light should be on).

■ You may have selected the wrong printer in the Chooser. Select the correct Chooser options as described in "Telling Your Computer to Use the LaserWriter 4/600 PS" in Chapter 1.

- One of the connection cables is loose. Check to make sure that all the cables between your computer and the printer are secure. See "Connecting the Printer to Your Macintosh," and "Plugging In the Printer," in Chapter 1.

- If you are trying to use a shared printer connected to another Macintosh on an Ethernet or Token Ring network and the printer name isn't listed in the Chooser, make sure that the other Macintosh is turned on and connected to the network. Check to see whether someone has renamed the printer. Also make sure that the LaserWriter Bridge software has been installed and the printer is set up to be shared. Then try again to select the printer in the Chooser. See Appendix B for instructions.

- You may be using the wrong printer software. Make sure you installed the software as described in Chapter 1 and that you have selected the printer as described in "Telling Your Computer to Use the LaserWriter 4/600 PS," also in Chapter 1. Don't use software intended for older LaserWriter printers.

- The printer may need to be reset. Use the Apple Printer Utility to restart the computer (or unplug the printer, count to five, then plug it back in.)

If you still can't resolve the problem, the printer may not be working properly. See the information about service and support that comes with your printer.

I can't find the name of my printer in the Chooser.

Check to see whether the printer is unplugged. If the printer is plugged in, check with your network administrator to see whether the printer name has been changed. Someone may have renamed the printer.

If your printer is connected to a large AppleTalk network that uses Star Controllers, check with your network administrator to be sure that enough nodes have been allotted to the controller so that it can manage all the devices connected to the network.

The desktop printer icons appear as folders.

If you restart the computer using a startup disk that doesn't contain up-to-date LaserWriter printing software, your desktop printer icons will appear as folders. Though they won't work as usual, they will return to normal when you restart from the correct startup disk. You may also install the software on the new startup disk.

The printer jams or reports a "wrong paper size" error.

Check whether the printer has fed several sheets of paper into the printer at once. If so, remove the jammed sheets and reload the paper into the paper cassette, fanning the sheets so that they will feed evenly into the printer without sticking together.

Also, always be sure to select the paper size in the Page Setup dialog box that matches the paper in your printer. If you select a larger paper size than the paper actually loaded in the cassette, the printer will sense that there is a paper-size mismatch and the amber Paper Jam light will glow to indicate an error. To fix the problem, remove the jammed sheet from the printer, then select the correct paper size in the Page Setup dialog box before printing again.

The printer only prints part of the page, then reports a paper jam when I print.

The paper size in the printer may be larger than the page size you selected in the Page Setup dialog box. Always be sure to select the paper size in the Page Setup dialog box that matches the paper in your printer. If you select a smaller paper size than the size of the paper in your printer, the printer may print only on part of the paper and then report a paper jam. To fix the problem, select the correct paper size in the Page Setup dialog box before printing again.

The desktop printer icon has an X drawn through it.

If your desktop printer icon has an X through it, you can't use that desktop printer because either your desktop printing software or the printer is not available. Follow these steps:

Drag the disabled desktop printer icon to the Trash. Next, open the Chooser and select the printer again to create another desktop printer icon. If you don't see the LaserWriter 8 or LaserWriter GX icons in the Chooser, close the Chooser and follow the software installation instructions in "Installing Your Printer Software" in Chapter 1.

If you can select your printer in the Chooser, but the desktop printer icon still does not appear, you need to reinstall the printer software. Follow the installation instructions in "Installing Your Printer Software" in Chapter 1.

The Chooser doesn't allow me to turn background printing on or off.

If the On and Off buttons for background printing are dimmed, check your Extensions folder in your System Folder to make sure PrintMonitor is present. To use the desktop printing software, you must have both the Desktop PrintMonitor and the PrintMonitor software in your System Folder. If PrintMonitor is missing, reinstall it. See "Installing Your Printer Software" in Chapter 1.

The pages print on the wrong LaserWriter 4/600 PS.

If you have more than one LaserWriter 4/600 PS connected to your network, make sure you have the correct one selected in the Chooser. (See "Telling Your Computer to Use the LaserWriter 4/600 PS" in Chapter 1.)

If that doesn't solve the problem, the two printers may have the same network identification number—a problem caused by plugging in the printer before connecting it to the network. To solve the problem, identify which printers are being confused with each other, make sure both are connected to the network, unplug each from the wall, wait a moment, and plug them in again. Then select the printer you want as described in "Telling Your Computer to Use the LaserWriter 4/600 PS" in Chapter 1.

Printing goes beyond the bottom of the page.

You may have set up your document as a legal-size page in the Page Setup dialog box and loaded letter-size pages in the printer. To correct the problem, change the page setup to match your paper size or load different paper.

Printing takes a long time.

Printing may be slow on pages containing complex graphics or many fonts. Try reducing the complexity of the document before printing.

Adding more memory can improve performance. You can purchase a memory upgrade that increases the printer's memory to 6 MB. See Appendix C for more information.

Text lines up in columns on the screen but not when it prints.

You may have used spaces (rather than tabs) to line up the text. Because printers interpret spaces differently than does the screen, the text may fail to line up when you print it. Try replacing the spaces with tabs.

The printer won't print a particular page or document.

If you attempt to print a document and no page is printed—not even a blank one—try the following:

- Double-click the desktop printer icon for your printer to check for status messages.

- Repeat the printing process. Sometimes problems disappear when you try to print your document again.

- To create a printed report of the error, you can open the Print dialog box, then click Options. Choose Print Detailed Report from the PostScript Errors pop-up menu.

- Print the Read Me file found in the Apple LaserWriter Software folder, then try printing your document again. If the document still doesn't print, check the Read Me file you just printed for the latest troubleshooting suggestions.

- Printing problems are often caused by errors in application programs. If you can print from the SimpleText or TeachText program but not from another program, it's probably a problem with that program. Contact the publisher of that program for help.

- Select Unlimited Downloadable Fonts in the Page Setup Options dialog box.

- Simplify the document and try printing again. To simplify a document, try the following: Use fonts resident in the printer's ROM in your documents rather than fonts that need to be downloaded. Reduce the number and sizes of fonts used in your document. Simplify complex drawings. Select a smaller paper size; printing problems can occur when printing on large paper sizes such as U.S. Legal.

- Restart the printer using the Apple Printer Utility. (Or unplug the printer, count to five, then plug it in again.) This resets the printer.

- Restart your Macintosh.

- If problems occur regularly when printing your documents, see Appendix C for information about how to upgrade your printer's memory.

The desktop printing software needs more memory on the computer.

If the Desktop PrintMonitor needs more memory, try closing open windows and quitting open programs. Each desktop printer that you use also requires memory, so try reducing the number of desktop printer icons on your desktop by dragging desktop printers you no longer need to the Trash.

A page prints differently on different printers.

Try the following:

- Make sure you have the same fonts and printer software on each computer you print from.
- Don't use the Larger Print Area option in the Page Setup dialog box. The larger print area sizes are not standard in different types of printers.
- Use tabs and margins (rather than spaces) to line up your text.

Type looks jagged or some text changes to the Courier or Geneva font.

The most likely cause of this problem is that you are using a bitmapped font instead of an outline font.

TrueType and PostScript fonts are outline fonts. A character from an outline font can be printed smoothly in any size you specify. Your LaserWriter 4/600 PS comes with a set of outline fonts.

Bitmapped fonts are fixed in shape and size. Your printer can produce smooth bitmapped characters only in the sizes for which it has instructions (a map of dots for each font size). If you use a bitmapped font in a size for which your printer does not have instructions, your system scales the bitmapped image to create the size you want. The resulting characters can look jagged. Even a font that looks good on your screen can look bad when printed.

The best solution to this problem is to switch to an outline font. All the fonts shipped with this printer are outline fonts. (For more information about fonts, see Chapter 5.)

When your computer runs low on memory, TrueType turns itself off and some TrueType fonts may be displayed and printed in the Geneva font. If you've installed bitmapped versions of your TrueType fonts, they will not change to Geneva, but they will look very jagged when TrueType is turned off.

The printer prints on only part of the paper.

Make sure you have selected the appropriate paper size in the Page Setup dialog box.

Adjust the sliding backstop in the paper cassette to make sure it is set correctly for your paper size. See "Putting in Paper" in Chapter 1.

Unwanted lines or stripes appear.

If white or dark lines appear on the page, remove the toner cartridge and rock it to redistribute the toner. Be sure to hold the cartridge horizontally.

A white vertical stripe in a solid black print area on a page may indicate that the mirror inside the printer is dirty. See "Cleaning the Printer Mirror" in Chapter 3 for instructions about cleaning the mirror.

Paper feeds improperly.

If paper tears, gets skewed, or comes through the printer crumpled, it may not be entering the printer properly.

Remove any jammed sheets from inside the printer. Remove the paper cassette, turn the stack of paper over, and replace the cassette. (Most paper has one side that prints better.) It may also help to fan the edge of the stack with your thumb, in case some of the sheets are stuck together.

Make sure the stack of paper is loaded correctly into the paper cassette and fits under all the corner brackets.

Some papers cause jams because they are not intended for use with laser printers. See "About Paper," earlier in this chapter, for advice on choosing papers.

Toner stains appear on printed pages.

If the printed pages are not clean, there may be a buildup of toner on the printing rollers. If stains appear on the backs of printed pages, you may have printed an image that is larger than the paper, causing toner to be deposited in the paper path.

To clean the rollers, print several blank pages until the stains disappear. (You can use any word-processing program to print blank pages. Just open a new file and print it.)

The image is too light or too dark.

If printing is too light or too dark, try the following:

- Take out the toner cartridge and rock it gently to distribute toner. If this doesn't help, you may need to replace the cartridge. See "Installing the Toner Cartridge" in Chapter 1 for instructions.

- Adjust the print density, as described in "Using the Apple Printer Utility Program" in Chapter 2.

- Try using a fresh package of paper. If the problem occurs on paper other than standard copier-weight bond, the toner may not adhere well to the paper you are using. For advice on choosing paper for your laser printer, see "About Paper," earlier in this chapter.

The printer is printing a document at a lower resolution than expected.

If you print a complex document with text and graphics that require more memory than your printer has available, the printer may print the document at a resolution that appears lower than 600 dpi. (As the printer prints a complex document it uses data compression, which may result in printing that looks low in resolution.) Try simplifying the document by reducing or eliminating text or graphics that require large amounts of memory.

If the problem continues to occur, you may want to upgrade your printer's memory. See Appendix C for more information.

5 Using Fonts With the LaserWriter 4/600 PS

A font is a collection of letters, numbers, and symbols in a distinctive typographic design. Your Macintosh computer and LaserWriter 4/600 PS printer come with a variety of fonts that look great both on your monitor and on paper.

Fonts come in such a variety of formats that problems can sometimes arise. This chapter provides the information you need to avoid such problems and to solve them if they come up.

Kinds of fonts

Apple provides three kinds of fonts with your Macintosh and the LaserWriter 4/600 PS printer: bitmapped, PostScript, and TrueType.

Bitmapped fonts

Bitmapped fonts consist of "pictures" of a typeface at specific sizes. For example, you might have bitmapped fonts at 10-, 12-, and 18-point sizes installed in your Macintosh computer. For best results you need a separate font file for each size of character you want to use.

The icon of a bitmapped font (also called a *fixed-size* font or *screen font*) has the single letter A on it. The font's point size appears at the end of its name.

Monaco 12

When you request a bitmapped character, your Macintosh looks for an installed bitmapped font in the size you specified. (See "How the Macintosh Looks for Fonts" later in this chapter.) If it can't find that font, your Macintosh tries to construct one by scaling a size that it does find.

In most cases, scaled bitmapped fonts don't look nearly as good as preinstalled ones. Such scaling is one reason for the jagged edges (sometimes called "jaggies") you'll see on your screen or in a printed document when you request an uninstalled size (for example, 17-point Geneva).

Bitmapped fonts are designed on grids of 72 dots per inch (dpi)—the standard Macintosh screen resolution. Because of their correspondence to the standard screen resolution, bitmapped fonts in preinstalled sizes always look great on your display.

When you print a bitmapped font, it prints at a resolution of 72 dpi. Because most modern printers can print at resolutions far better than this (your LaserWriter 4/600 PS prints at 600 dpi), printed bitmapped fonts almost always have jagged edges or stairstep sides. You can use the Smooth Text option in the Page Setup Options dialog box to reduce the jagged look of each font.

Fortunately, the Macintosh can use bitmapped fonts in combination with other font formats, reserving bitmaps for the screen and other kinds of fonts for the printer.

PostScript fonts

PostScript is a page-description language that defines the characters, symbols, and images that appear on each page of a document. A PostScript font comes as a pair of fonts: an outline font for the printer and a corresponding bitmapped font for displaying type on your screen.

No bitmapped font, no menu entry: If your system doesn't have the bitmapped font, the PostScript font name won't appear in your font menu.

Certain printers are designed specifically to work with PostScript fonts. Your LaserWriter 4/600 PS is a PostScript printer and can use PostScript fonts.

PostScript printer fonts have no numbers associated with their names, because a single font can be scaled to any size. Many companies make PostScript fonts; the following illustration shows icons for Adobe,™ Bitstream, and Fontek PostScript fonts, plus a generic PostScript font icon.

TrueType fonts

A TrueType font is scalable, describing a typeface without rigidly specifying a size. So it looks good whatever size you choose. TrueType fonts provide sharp text at any size on screen or on paper. You can mix and match TrueType fonts from various font vendors.

Courier

TrueType fonts store individual text characters as mathematical descriptions of lines and curves, rather than as groups of pixels (a bitmap). When a program asks for a character in a particular size, such as 33 points, the Macintosh uses mathematical calculations to enlarge the character's outline to 33 points and fill in the dots for the monitor or printer output.

Sometimes you'll still get jagged edges when you print a document, even when you use a TrueType font. In nearly all cases, this is because there isn't enough memory available to scale the font properly for printing. This may happen, for example, when you're running several programs at the same time.

Because you don't need a separate font for each character size in order for your printing to look good (as you do with bitmapped fonts), TrueType font names don't have numbers in them.

How does a font look? To see what a TrueType or bitmapped font looks like on your screen, double-click the font's icon to open it. A sample of that font appears (in three sizes for TrueType fonts and in the size you opened for bitmapped fonts).

≣□≣ Palatino ≣
···9 point···
How razorback-jumping frogs can level six piqued gymnasts!
···12 point···
How razorback-jumping frogs can level six piqued gymnasts!
···18 point···
How razorback-jumping frogs can level six piqued gymnasts!
To use this font, drag it onto your System Folder

≣□≣ Palatino 12 ≣
···Sample···
How razorback-jumping frogs can level six piqued gymnasts!
To use this font, drag it onto your System Folder

You can also use the Key Caps desk accessory to examine fonts. See the documentation that came with your computer for instructions.

QuickDraw GX imaging technology

A QuickDraw GX font is a TrueType or PostScript font with an additional set of sophisticated features. These features include extremely accurate typographic elements such as ligatures and kerning, plus the ability to skew, rotate, and add perspective to text in extremely flexible ways.

How TrueType fonts work with other kinds of fonts

Although TrueType fonts offer distinct advantages, your LaserWriter 4/600 PS printer can also use other kinds of fonts.

TrueType and bitmapped fonts

Macintosh computers running System 7 come with both bitmapped (screen) fonts and TrueType fonts installed. This maintains consistency with documents created on Macintosh systems that don't have TrueType fonts.
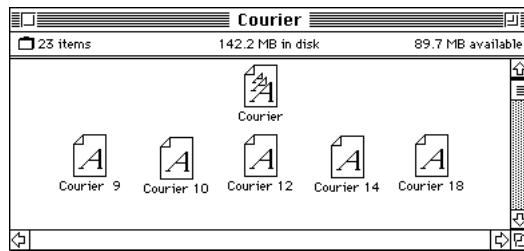
Bitmapped fonts look better displayed on the monitor, while TrueType fonts look better on a high-resolution printer such as the LaserWriter 4/600 PS. So, if you have both versions of the font available, the Macintosh uses the bitmapped version when displaying the font on the screen (provided that the size you're using is available) and the TrueType version when printing the font on the LaserWriter 4/600 PS. To force the Macintosh to use only TrueType fonts everywhere, you must remove the bitmapped fonts.

For example, if a document uses 12-point Times®, available in that size as a bitmapped font and as a TrueType font, the system uses the bitmapped font on the screen and the TrueType font on the printer. If a document uses 4-point Times, the system scales the TrueType font to that size for both the screen and the printer, because a bitmapped version isn't available.

Using only TrueType fonts produces a closer match between the appearance of type on the screen and on paper. However, a document you've already created with bitmapped fonts will be reformatted with the corresponding TrueType fonts, and line breaks in the document may change. Similarly, if a document is created on a system that has TrueType fonts or Adobe Type Manager software installed, it may have different spacing, kerning, and so on, when opened on a system that doesn't have TrueType fonts or Adobe Type Manager software.

Keeping two font versions available

If you have a TrueType version of a font, you don't need a bitmapped version. However, although keeping both versions of a font takes up more disk space, there are several advantages to doing so.

Bitmapped fonts are hand-designed: a graphic artist planned each character in each font to look good on a screen. TrueType fonts are scaled by the computer to match what you request. At smaller point sizes, the bitmaps may appear sharper.

Additionally, scaling fonts takes time—sometimes up to several seconds in slower Macintosh computers; but all Macintosh computers can display a bitmapped font instantly.

TrueType and PostScript fonts

PostScript fonts were designed as fonts for PostScript printers. The LaserWriter 4/600 PS was designed to use PostScript.

Use different names: To avoid confusing the printer software, be sure that you don't install both TrueType and PostScript versions of the same font. For example, do not have a PostScript font file called New York and a TrueType font file called New York installed in your system at the same time.

New York   New York

How the Macintosh looks for fonts

Here's the search order your Macintosh uses to determine which font to display on your screen when you choose a specific size:

1. an installed bitmapped font in that size, if one exists

2. a scaled TrueType font, if no bitmapped font exists

3. an Adobe Type Manager (ATM) version of a PostScript font, if ATM is installed and if no TrueType version exists

4. a scaled bitmap if no ATM font exists

Here's the search order it uses to determine which font to print on your LaserWriter 4/600 PS printer:

1. printer resident PostScript fonts

2. a scaled TrueType font, if one exists

3. an ATM version of a PostScript font, if ATM is installed and if no TrueType version exists

4. a scaled 72-dpi bitmap if no ATM font exists

Where fonts are stored

All fonts for your LaserWriter 4/600 PS printer reside in special places within the System Folder. To install fonts, you drag them to the System Folder. Your Macintosh will automatically put them where they belong.

In system software versions 7.1 and later, all the fonts are installed in the Fonts folder within the System Folder.

The Fonts folder can contain a total of 128 font suitcases (described in the next section), plus any number of PostScript fonts, up to the available storage capacity of your hard disk.

Name	Size	Kind
HelveNarBolObl	36K	PostScript™ font
HelveNarObl	36K	PostScript™ font
Helvetica	4K	font suitcase
HyperCharacters.bmap	12K	font suitcase
London	4K	font suitcase
Los Angeles	12K	font suitcase
MerrionSquare.bmap	8K	font suitcase
MerriSqu	24K	PostScript™ font
Mobile	12K	font suitcase
Monaco	56K	font suitcase
MT Extra	20K	font suitcase
MTExt	12K	PostScript™ font
New York	88K	font suitcase
Palatino	296K	font suitcase
San Francisco	4K	font suitcase
Symbol	72K	font suitcase
Times	364K	font suitcase
TimesBol	36K	PostScript™ font

IMPORTANT Fonts installed in other folders or in the top level of the System Folder may not work correctly. Additionally, bitmapped and TrueType fonts stored outside of suitcases may not work correctly.

Suitcases

A font suitcase is a special folder for collections of fonts.

Courier

Suitcases provide a convenient way to organize fonts in the same font family. For example, it's a good idea to use a single suitcase (called *Courier*) for all fonts in the Courier font family—all Courier roman fonts as well as fonts with names like Courier Bold and Courier Oblique.
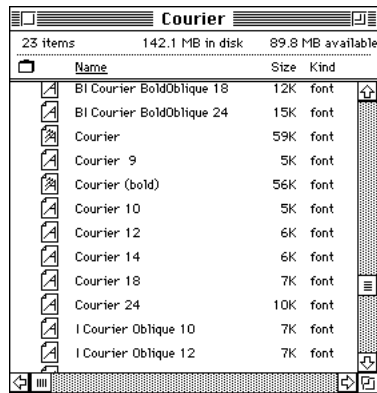
Combining suitcases: To merge all the fonts from one suitcase with another, drag one suitcase on top of the other. All the fonts from the dragged suitcase will go into the other, and the dragged suitcase will disappear.

A suitcase can also contain fonts from different font families, although you should keep all fonts of the same family in the same suitcase. All the fonts will still appear in menus with their proper names.

You treat a suitcase as you would a folder. To open a suitcase, you double-click it. To add a font, you drag the font's icon to the suitcase and drop it in. To remove a font, you drag its icon out of the suitcase.

To create a font suitcase, duplicate an existing one and throw away its contents. Then rename the suitcase as appropriate and drag whatever fonts you want into it.

Size limits for suitcases: No matter how many fonts you have in a single suitcase, the Fonts folder counts the suitcase as a single unit. There's no limit to the number of fonts in a single suitcase, but the suitcase cannot be larger than 16 megabytes.

Styled fonts

Most fonts that come with your LaserWriter 4/600 PS printer have defined styles. For example, if you open the Bookman font suitcase, you see files for bold and italic versions of the font.

```
▤▢▤▤▤▤▤ Bookman ▤▤▤▤▤◳◳
▱ 4 items      58.4 MB in disk     16.6 MB available

        A                    A
     Bookman              Bookman (bold)

        A                    A
   Bookman (italic)     Bookman (bold, italic)
```
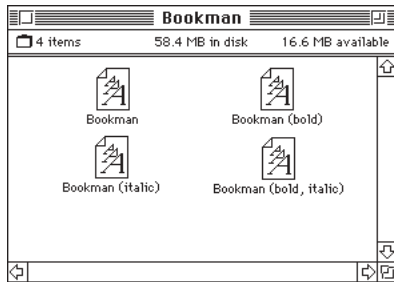
But fonts such as Chicago, Geneva, Monaco, and New York do not come with defined styles. If you open the Chicago font (contained in a suitcase in the Fonts folder, which is inside your System Folder), you see only one file.

```
▤▢▤▤ Chicago ▤▤▤◳◳
▱ 1 item   58.4 MB in disk   16.6 N

    A
  Chicago
```

You can apply a style to a font like this by making a choice from the appropriate menu (Fonts, Style, Format, or some similar menu, depending on the application program). A font predesigned with a given style nearly always looks better than a font with a computer-generated "derived" style.

About style names: Predesigned styled fonts sometimes have names you may not be familiar with. For example, *roman* refers to a font without styling, or plain. *Oblique* is similar to italic. *Light, demi,* and *extra* are different states of bold.

Common questions about fonts

Here are some questions that often come up about fonts.

What kind of fonts should I buy?

Using a font that has both bitmapped and TrueType versions works best. The bitmapped version looks great on the screen and the TrueType fonts print beautifully on the LaserWriter 4/600 PS.

Avoid bitmapped fonts that don't have TrueType versions because they print with jagged edges on the LaserWriter 4/600 PS. By contrast, TrueType fonts work well, even if you don't have a bitmapped version.

If you have a PostScript printer or Adobe Type Manager, PostScript fonts look great on paper. The LaserWriter 4/600 PS is a PostScript printer.

People who need professional typographic features such as swash characters and proportional space numerals might also consider using QuickDraw GX and QuickDraw GX TrueType fonts.

Why don't all of my fonts appear in the Fonts menu?

You may not have all of your fonts placed correctly. All the fonts should be installed in the Fonts folder in the System Folder.

Additionally, some application programs let the user decide which fonts should appear in the Fonts menu. Check the manuals that came with your programs.

Why can't I see my Monaco 9, Geneva 9 and 12, and Chicago 12 bitmapped fonts?

These fonts are used by your Macintosh to display information correctly. Because the Macintosh needs these fonts, the Finder makes them invisible to prevent users from removing them.

What does the term *Apple classic fonts* mean?

The Apple classic fonts are the original ten bitmapped fonts that came with the first Macintosh in 1984. These fonts, which all have city names, include Athens, Cairo (a picture font), Chicago, Geneva, London, Los Angeles, Monaco, New York, San Francisco, and Venice. Several of the fonts (Athens, Cairo, London, and San Francisco) came in only one size—18 points.

This is a sample of Athens.
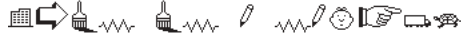
This is a sample of Chicago.

This is a sample of Geneva.

This is a sample of London.

This is a sample of Los Angeles.

This is a sample of Monaco.

This is a sample of New York.

This is a sample of San Francisco.

This is a sample of Venice.

Chicago, Geneva, Monaco, and New York are currently available in TrueType versions. The other classic fonts are still only available in bitmapped versions.

Why do I sometimes get Geneva or Courier in my printed documents when I have specified other fonts?

Geneva often appears when you're trying to use a TrueType font but don't have enough memory for scaling to operate properly.

Substitute fonts can also appear in a document composed on one Macintosh that has a particular set of fonts but printed on another Macintosh that doesn't have those fonts.

Why does a document written entirely in Times look different on different Macintosh computers?

Times, an extremely popular font, is manufactured and sold by more than one company. Such fonts usually have small differences, even though they have the same name. For example, the Times font manufactured by Adobe Systems Incorporated has different letterspacing than does the Times font from Apple Computer, Inc.

What is font substitution?

Font Substitution, which is available for your LaserWriter 4/600 PS printer, is an option in the Page Setup dialog box for certain PostScript printers. When font substitution is turned on, these printers will use their built-in equivalents for three bitmapped fonts (Times for New York, Helvetica for Geneva, and Courier for Monaco).

What's a downloadable font?

A downloadable font is a TrueType or PostScript font sent to an "intelligent" printer by your system software. (An intelligent printer is one that has a microprocessor built into it.) The printer then uses the font to print your document.

If a printer has sufficient memory, it can hold more than one downloaded font; otherwise, it must request the fonts it needs as necessary. This can be a time-consuming process.

Your LaserWriter 4/600 PS printer can receive downloaded fonts. You can download fonts to the printer's memory using the Apple Printer Utility. These fonts will remain in the printer's memory until you turn off the printer or remove them using the Apple Printer Utility. If you print a document that requires a large amount of memory, the printer may also remove fonts from its memory in order to process the document.

Font list

Between the fonts that come with your Macintosh and those that come with the LaserWriter, there are 28 TrueType font families (and 64 total styled fonts) available as soon as you install the LaserWriter 4/600 PS software. 35 of these fonts are installed in PostScript Type 1 versions. These PostScript fonts are built into your printer's ROM.

Name in Font menu	Number of fonts	Font family (and styled fonts)	Type Installed
Avant Garde	4	ITC Avant Garde® (plain, italic, bold, and bold-italic)	PostScript, TrueType
Bookman	4	ITC Bookman® (plain, italic, bold, and bold-italic)	PostScript, TrueType
Chicago	1	Chicago	TrueType
Courier	4	Courier (plain, italic, bold, and bold-italic)	PostScript, TrueType
DELPHIAN	1	Delphian	TrueType
Garamond Narrow	4	ITC Garamond® Narrow (plain, italic, bold, and bold-italic)	TrueType
Geneva	1	Geneva	TrueType
Helvetica	4	Helvetica® (plain, italic, bold, and bold-italic)	PostScript, TrueType
Helvetica Black	2	Helvetica Black (plain and italic)	TrueType
Helvetica Compressed	2	Helvetica Compressed (plain and italic)	TrueType
Helvetica Narrow	4	Helvetica Narrow (plain, italic, bold, and bold-italic)	PostScript, TrueType
Lubalin Graph	4	ITC Lubalin Graph® (plain, italic, bold, and bold-italic)	TrueType
Lucida Bright	4	Lucida Bright (plain, italic, bold, and bold-italic)	TrueType
MACHINE	1	ITC Machine®	TrueType
Monaco	1	Monaco	TrueType

Name in Font menu	Number of fonts	Font family (and styled fonts)	Type Installed
Nadianne	2	Nadianne (plain and bold)	TrueType
New Century Schoolbook	4	New Century Schoolbook (plain, italic, bold, and bold-italic)	PostScript, TrueType
New York	1	New York	TrueType
Old English Text	1	Old English Text	TrueType
Onyx	1	Onyx	TrueType
Oxford	1	Oxford®	TrueType
Palatino	4	Palatino® (plain, italic, bold, and bold-italic)	PostScript, TrueType
Swing	1	Swing	TrueType
Συμβολ (Symbol)	1	Symbol	PostScript, TrueType
Times	4	Times® (plain, italic, bold, and bold-italic)	PostScript, TrueType
Zapf Chancery	1	ITC Zapf Chancery®	PostScript, TrueType
✹❂□❅ ✣❁✺■✳❂❀▼▲ (Zapf Dingbats)	1	ITC Zapf Dingbats®	PostScript, TrueType
Z̄ ⇩ ⇧ ↘ (Zeal)	1	Zeal	TrueType
Total	**64**		

Appendix A
Technical information

Specifications

Print quality

- PostScript, 600 dots per inch (dpi) for text and graphics

Printer memory

- 2 megabytes (MB) of random-access memory (RAM)
- Can be upgraded to 6 MB

Printer fonts

- 35 PostScript Type 1 fonts, listed in Chapter 5, are built in. The LaserWriter 4/600 PS can support additional fonts from Apple and from other suppliers.

Speed

- Four pages per minute maximum. Actual speed depends on the images printed and the computer used.

Interface

- LocalTalk port for connection to an AppleTalk network or stand-alone Macintosh

Life expectancy

- Minimum life expectancy is 150,000 pages, with no monthly page limit.

Paper feed

- Automatic feed from paper cassette; manual feed for envelopes, transparencies, and labels.

Paper delivery

- Face-up delivery

Print envelopes, transparencies, and other special media using manual feed and face-up delivery.

- Face-down delivery

Use face-down delivery for paper fed from the paper cassette.

Energy Star

- The LaserWriter 4/600 PS is EPA Energy Star–compliant.

Printing materials

Apple recommends 20-pound photocopy bond (75 grams/meter^2). You can use 16-pound (64 g/m^2) to 28-pound (105 g/m^2) paper with manual feed; the paper cassette accepts 16-pound (64 g/m^2) to 24-pound (90 g/m^2) paper. Accepts most letterhead and colored stock, and medium-weight laser printer transparencies. Print labels using manual feed. Use envelopes recommended for laser printers.

Paper sizes and capacity

The paper cassette can hold up to 100 sheets of U.S. Letter, U.S. Legal, Executive, B5, and A4 paper sizes.

Printable area

Measured in millimeters (mm) and inches (in.):

- Maximum printable line: 208.534 mm (8.21 in.)
- Minimum top margin: 2.794 mm (0.11 in.)
- Minimum bottom margin: 5.080 mm (0.20 in.)
- Minimum left margin: 3.302 mm (0.13 in.)
- Minimum right margin: 4.064 mm (0.16 in.)

Actual imageable area may vary depending on the application program.

Dimensions

Measured in centimeters (cm) and inches (in.):

- Height: 16.1 cm (6.3 in.)
- Width: 38.5 cm (15.2 in.)
- Depth: 37.9 cm (14.9 in.)

Weight

- 7 kilograms (15.4 pounds) not including cartridge

Operating environment

Temperature

- 50° to 90.5° Fahrenheit (10° to 32.5° Celsius)

Humidity

- 20 to 80 percent, noncondensing

Toner cartridge storage environment

- 32° to 95° Fahrenheit (0° to 35° Celsius)

Input electrical requirements

U.S./Japan

- 100–120 volts ±10 percent
  50–60 hertz ±2 hertz

Europe/Australia

- 220–240 volts ±10 percent
  50 hertz ±2 hertz

Power consumption

Operating

- 180 watts average at 115 volts or 220 volts

Standby

- less than 10 watts

Maximum input current

- 3.6 amperes at 120 volts
- 1.8 amperes at 220 volts

Ozone emission

- Emits essentially no ozone, (less than 0.01 parts per million maximum) as measured in accordance with European Computer Manufacturers Association (ECMA 129) or Underwriters Laboratories (UL 114) standards for ozone density measurement.

Laser specifications

- Type: Anode Common Type
- Wavelength: 775–795 nanometers
- Output power: 5 milliwatts

RAM upgrade specifications

To increase the printer's RAM, purchase a LaserWriter 4/600 PS RAM upgrade available from Apple-authorized dealers. The printer requires a special upgrade card for memory expansion. The printer is not equipped with industry-standard SIMM slots for installing additional memory.

Appendix B
Using the LaserWriter Bridge Software

You use the LaserWriter Bridge software to share the LaserWriter 4/600 PS over an EtherTalk or TokenTalk network. To do so, you first connect the printer to your Macintosh via the LocalTalk network. Then, if your Macintosh is also connected to an Ethernet or Token Ring network, you can give other EtherTalk or TokenTalk users access to the printer by installing the LaserWriter Bridge software. Once you install the software, it acts as a bridge that passes information from the Ethernet or Token Ring network to your Macintosh, and then over a LocalTalk network to the printer. The LaserWriter Bridge software runs in the background as long as your computer is turned on, and works concurrently with other software, so you can continue to use the computer for other functions.

Your LaserWriter printer has built-in support for a LocalTalk network. This allows you to connect the printer either to a single Macintosh computer or to a LocalTalk network of several computers and other devices. If you plan to use your printer with a single computer or as part of a LocalTalk network, you don't need to read this appendix.

To allow other users on an EtherTalk or TokenTalk network to use the printer, install the LaserWriter Bridge software on your Macintosh. To create a bridge, you need to complete the following steps:

■ connect the printer to a "host" Macintosh via a LocalTalk network

■ connect the "host" Macintosh to an EtherTalk or TokenTalk network using the appropriate transceivers and cables

■ install the LaserWriter Bridge software on the host Macintosh

IMPORTANT Once your LaserWriter Bridge software is running, other users on the LocalTalk network will not have access to the printer. Only EtherTalk or TokenTalk network users will have access to it. To give access to LocalTalk and EtherTalk or TokenTalk users simultaneously, you must install the Apple LocalTalk Bridge software (Apple part number M3246Z/A), available from an Apple-authorized dealer. The Apple LocalTalk Bridge software allows all users on LocalTalk and EtherTalk or TokenTalk networks to share all printers and devices on either network.

Connecting your printer to the network

Follow the instructions in Chapter 1 to connect your printer to a Macintosh computer on your network. The Macintosh must have the following:

■ an EtherTalk or TokenTalk network connection and the appropriate software. The Macintosh should have an Ethernet or Token Ring card, connection to the network via an Ethernet or Token Ring transceiver, and EtherTalk software or built-in EtherTalk or TokenTalk support.

■ a LocalTalk connector box and cable

■ a 68020 or higher processor

■ system software version 7.1 or later

■ at least 70 K of RAM

■ a 1.4 MB floppy disk drive

■ approximately 1 MB of hard disk space

IMPORTANT The LaserWriter Bridge software will not work on LocalTalk networks that use routers or that have zones. Only one Macintosh using LaserWriter Bridge software can operate on a LocalTalk network. The EtherTalk or TokenTalk networks to which your Macintosh is connected can have routers and zones.

Setting up a host computer

To use the LaserWriter Bridge software, you must set up your Macintosh as a host computer. The printer should be connected to the host computer by a simple LocalTalk network (a network without routers or zones). You can use a direct connection using an Apple System/Peripheral-8 cable or a standard LocalTalk connection. (For more information about connecting the printer to a Macintosh, see "Connecting the Printer to Your Macintosh" in Chapter 1.) You must also connect your Macintosh to an EtherTalk or TokenTalk network.

Use the appropriate cards, cables, and transceivers or media adapters as shown below:

Ethernet port

Printer port

Ethernet transceiver or adapter

To Ethernet network

LocalTalk adapter
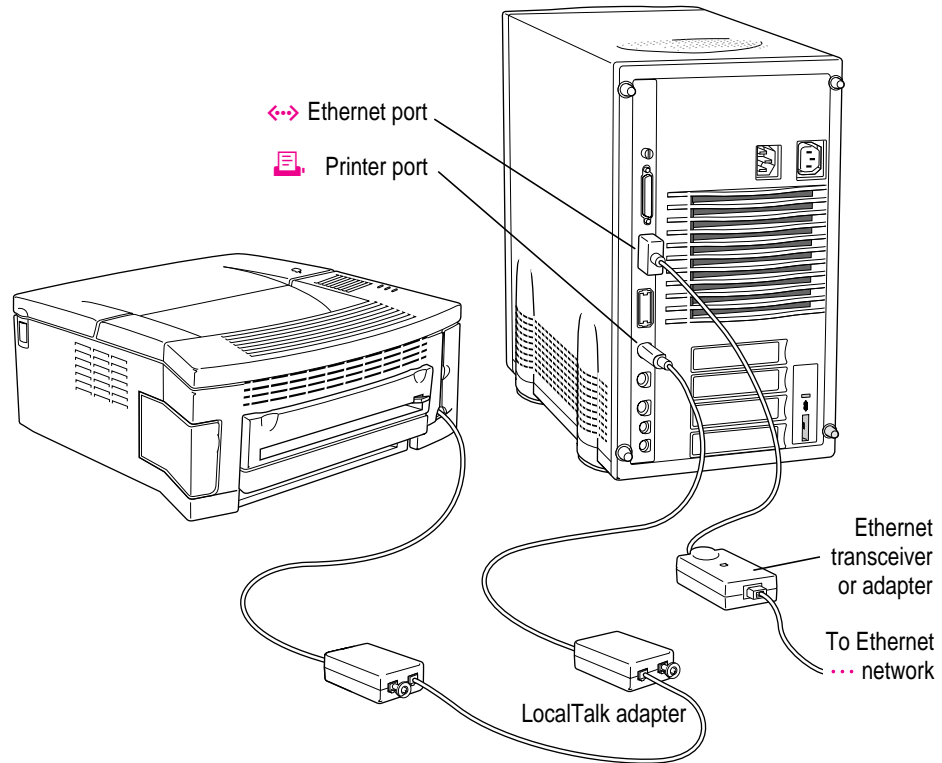
Installing the LaserWriter Bridge software

To install the LaserWriter Bridge software, you first select the EtherTalk or TokenTalk network in the Network control panel. You then update the AppleTalk software and other network and system software using the Easy Install option of the Network Software Installer program. Finally, you install the LaserWriter Bridge software using the Custom Install option of the Network Software Installer.

Selecting the EtherTalk or TokenTalk network

Follow these steps to select the EtherTalk or TokenTalk network:

1   **Turn on the Macintosh.**

2   **Choose Control Panels from the Apple (■) menu.**

3   **Open the Network control panel.**

The Network control panel appears. Your control panel may appear different from the one below depending on the type of network software you have.
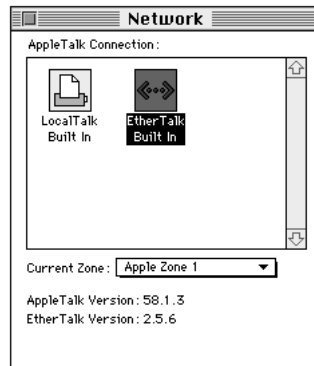
4   **Click the EtherTalk icon (or Built-in EtherTalk) or the TokenTalk icon and close the Network control panel.**

Updating AppleTalk and system software

To use the LaserWriter Bridge software, your Macintosh must have AppleTalk 58.1.5 or a later version. To make sure you have the proper system software, follow these steps:

1   Insert the *Apple Network Software Installer* disk in the floppy disk drive.

A window opens showing the contents of the disk.

2   Double-click the Installer icon.

An Installer welcome screen appears.

3   Click Continue.

The Installer window opens.
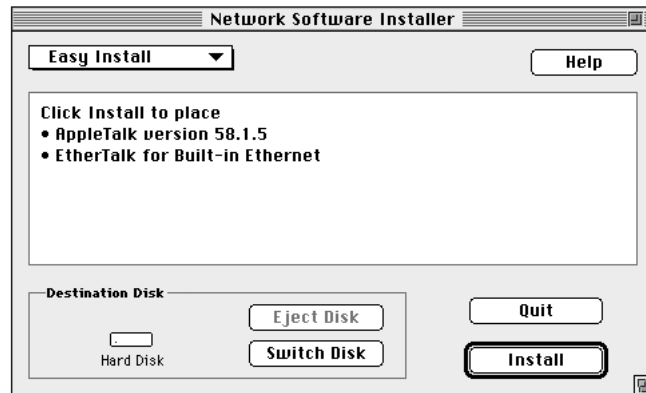
4   Make sure the Destination Disk is set to the hard disk which has your system software. If it is not, click Switch Disk until the correct disk appears.

5   Click Install.

Follow the instructions that appear on the screen.

When the installation is finished, a message appears asking you to restart your computer.

If you are installing on a system localized for a specific language, the installation software automatically installs the appropriate language version of the software.

6 **Click Restart.**

You've now installed the required version of AppleTalk and other system software. You'll next use the Installer again to install the LaserWriter Bridge software.

Installing the software

To install the LaserWriter Bridge software, follow these steps:

1 **Insert the *Apple Network Software Installer* disk in the floppy disk drive.**

A window opens showing the contents of the disk.

2 **Double-click the Installer icon.**

An Installer welcome screen appears.

3 **Click Continue.**

The Installer window opens.
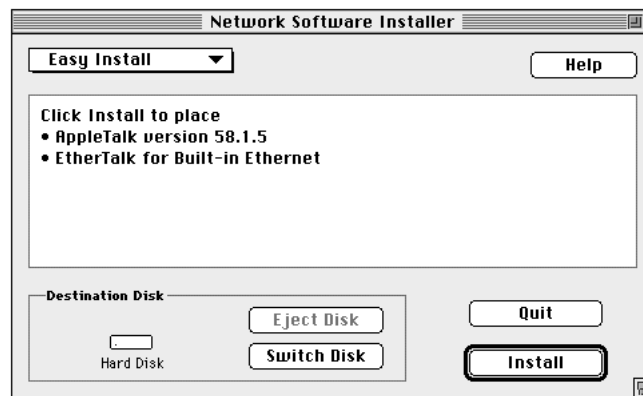
4 **Make sure the Destination Disk is set to the hard disk which has your system software. If it is not, click Switch Disk until the correct disk appears.**

5 **Choose Custom Install from the pop-up menu at the top of the window.**

The window changes to show you specific items you can install.

6 **Click the checkbox next to LaserWriter Bridge to select it.**

You may have to scroll the window to find it.

```
═════════════ Network Software Installer ═════════════
 ┌─────────────────────┐                    ┌──────────┐
 │ Custom Install    ▼ │                    │   Help   │
 └─────────────────────┘                    └──────────┘
 Check features to be installed
 ☐ EtherTalk for Ethernet Comm Slot cards              ⓘ ⬆
 ☐ EtherTalk for Apple Ethernet NuBus cards            ⓘ
 ☐ TokenTalk for Token Ring 4/16 NB Card               ⓘ
 ☐ TokenTalk for Token Ring NB/c Card                  ⓘ
 ☐ TokenTalk for TokenTalk NB Card                     ⓘ
 ☐ TokenTalk for Token Ring 4/16 NB Card w/SNA•ps      ⓘ

 ☒ LaserWriter Bridge                                  ⓘ ⬇
    Disk space available: 1,692K         Selected size: 36K
 ┌─Destination Disk────────────────────────────────────┐
 │                        ┌──────────────┐   ┌─────────┐│
 │                        │  Eject Disk  │   │  Quit   ││
 │      ▭                 └──────────────┘   └─────────┘│
 │   Hard Disk            ┌──────────────┐   ┌─────────┐│
 │                        │  Switch Disk │   │ Install ││
 │                        └──────────────┘   └─────────┘│
 └─────────────────────────────────────────────────────┘
```

7 **Click Install.**

Follow the instructions that appear on the screen.

When the installation is finished, a message appears asking you to restart your computer.

8 **Click Restart.**

You've now installed the LaserWriter Bridge software. The software is preset to be active after you restart the Macintosh so that other EtherTalk or TokenTalk users can use the printer automatically. You can also set the software to stop EtherTalk or TokenTalk users from using the printer. See "Starting or Stopping Access to the Printer" in the next section for more information.

IMPORTANT If the error message "Macintosh printer port already in use" or "LaserWriter Bridge cannot start because the printer port is in use" appears, open the Network control panel, select EtherTalk or TokenTalk, then restart your computer.

You can double-check that the correct version of AppleTalk was installed by opening the Network control panel and checking that the version is AppleTalk 58.1.5. When you open the Network control panel, you may notice additional EtherTalk or TokenTalk options that were installed when you installed AppleTalk. You can ignore items you don't use in the control panel.

Notify other EtherTalk or TokenTalk users about the printer, telling them its name and zone location on the network.

Starting and stopping access to the printer

You can set the LaserWriter Bridge to prevent access to the printer, or set the printer to be available to all users on the EtherTalk or TokenTalk network.

To change network access to printer:

1   Choose Control Panels from the Apple menu.

2   Open the LaserWriter Bridge control panel.

```
┌──────────────── LaserWriter Bridge ────────────────┐
│                                                     │
│  LaserWriter Bridge: ◉ On        ○ Off              │
│  LaserWriter Access: ◉ Public    ○ Private          │
│  ─────────────────────────────────────────────────  │
│  © 1995, Apple Computer, Inc.                       │
└─────────────────────────────────────────────────────┘
```
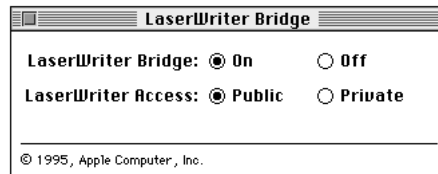
3   Click the On or Off button to activate or deactivate the LaserWriter Bridge Software.

If you turn the software on, you can click Public to share the printer with others on the EtherTalk or TokenTalk network

If you click Private, only you can use the printer. No other user on the LocalTalk, EtherTalk, or TokenTalk networks will have access to it.

If you turn the software off, only you and other users on the LocalTalk network will have access to printer.

4   Close the LaserWriter Bridge control panel.

5   Restart the Macintosh.

IMPORTANT If you open the Network control panel and change your network connection (for example, from an EtherTalk connection to AppleTalk), the LaserWriter Bridge software is deactivated. To reactivate the LaserWriter Bridge software, select the EtherTalk or TokenTalk connection in the Network control panel and restart your computer.

How the LaserWriter Bridge software works

Once you have installed and activated the LaserWriter Bridge software, the LocalTalk printer connected to the host Macintosh is available on the EtherTalk or TokenTalk network whenever the Macintosh is on. Network users can select the printer in the Chooser, just as if it were a part of the EtherTalk or TokenTalk network.

You can shut down your computer, stopping access to the printer, or leave your Macintosh on to allow users to access the printer over the network.

When the software is active, the printer is available to users of the EtherTalk or TokenTalk network only; it is not available to any users of the LocalTalk network. You can also have only one LaserWriter Bridge on a LocalTalk network. For example, you cannot have two computers on the same LocalTalk network both using LaserWriter Bridge software. You can, however, have many computers providing LaserWriter Bridge connections to an EtherTalk or TokenTalk network as long as the computers are not also connected to each other via LocalTalk.

Troubleshooting

This section offers some guidelines for handling common problems. For additional assistance, see your network administrator.

If a problem with the LaserWriter Bridge occurs, you may see an error message. Here are some common problems that messages may report:

Macintosh printer port already in use.

During startup, there are three ways in which the host computer's printer (serial) port can be in use:

■ You set the current AppleTalk port to LocalTalk in the Network control panel. You need to select EtherTalk or TokenTalk for the bridge to work.

■ You selected EtherTalk or TokenTalk in the Network control panel, but an error occurred while switching to the selected network, so the host computer used the default LocalTalk port instead. Check your network cable connections and then select EtherTalk or TokenTalk again in the Network control panel.

■ You installed a program that reserves the printer port before the LocalTalk Bridge is activated, causing the port to already be in use when the bridge starts up. Quit the program and restart the Macintosh to gain access to the port.

LaserWriter Bridge cannot start because AppleTalk is not active. Please use the Chooser to activate AppleTalk, then restart the Macintosh.

AppleTalk must be active on the host computer. Turn AppleTalk on by opening the Chooser and clicking the AppleTalk Active button. You may need to restart your computer for the change to take effect.

LaserWriter Bridge requires AppleTalk version 58 or later. Please Install AppleTalk version 58 or later, then try again.

The LaserWriter Bridge requires AppleTalk version 58.1.5 or later to function. Reinstalling system software or installing a card and third-party software might install an earlier version of AppleTalk that won't work with the LaserWriter Bridge. To install the correct version of the AppleTalk software, follow the installation instructions for installing the LaserWriter Bridge software earlier in this chapter.

LaserWriter Bridge cannot continue because of a network number conflict. Please restart the Macintosh.

The EtherTalk or TokenTalk network can have one or more active routers, and additional routers might become active on the network after the LaserWriter Bridge is turned on. If restarting the bridge computer doesn't fix the problem, contact your network administrator; the solution may involve network reconfiguration.

LaserWriter Bridge cannot start because of an AppleTalk error.

AppleTalk errors are rare, but may be caused by file or resource corruption. Check that network cables are securely attached and all devices are properly terminated. If the problem persists, you may need to reinstall both system software and the LaserWriter Bridge.

LaserWriter Bridge could not obtain a LocalTalk address because all addresses are in use by other network devices. Please contact your network administrator.

Try restarting the host computer. If restarting doesn't fix the problem, contact your network administrator. This message indicates there are no free node addresses available, and the solution may involve reconfiguring the network.

LaserWriter Bridge was unable to start because of an unspecified error.

Under some circumstances, the LaserWriter Bridge software may encounter a Macintosh operating system error during startup. Try restarting your Macintosh to clear the error. You can also check to see if system extensions are conflicting with the bridge software. If you think there's a conflict, remove that system extension and then restart the Macintosh.

Making AppleTalk inactive or switching network connections has stopped LaserWriter Bridge services.

Open the Chooser and turn AppleTalk on, then restart the host computer.

There is a router or a Macintosh running LaserWriter Bridge software on this LocalTalk network. LaserWriter Bridge cannot run on a LocalTalk network that has a router or another LaserWriter Bridge.

You can only use the LaserWriter Bridge on a LocalTalk network that doesn't already have an active router, LaserWriter Bridge, or LocalTalk Bridge running. If the LaserWriter Bridge software detects a router or another bridge on the LocalTalk network, the LaserWriter bridge won't start up. Remove either the router or other bridge software, or use a different Macintosh not connected to that LocalTalk network as your host Macintosh.

There is not enough memory available to start the LaserWriter Bridge.

The LaserWriter Bridge requires approximately 70K of RAM to run. You can try removing unnecessary system extensions or installing more memory.

Appendix C
Upgrading Your Printer's Memory

You can increase the memory size of the LaserWriter 4/600 PS. Upgrading the memory in your printer has several benefits:

■ It allows you to print documents that are more complex.

■ It may speed up the printing of complex documents.

Your LaserWriter 4/600 PS comes with 2 megabytes (MB) of random-access memory (RAM). An Apple-authorized dealer can install a 4 MB memory expansion card in your printer to increase its memory to 6 MB. Adding RAM allows more fonts to be downloaded to the printer at one time; provides more space to store the calculations needed for large or complex images; and increases the space available for font caching, or maintaining recently used fonts in memory for faster access to the next time they are needed.

You can purchase a LaserWriter 4/600 PS 4 MB memory expansion kit from Apple-authorized dealers (Apple part number M4l66G/A).

After the memory upgrade is installed, you must configure the printing software to use the additional memory. For instructions on configuring your software, see "Configuring Your Printer Software" in the next section.

Configuring your printing software

Once the upgrade is installed, you set up your Macintosh printing software to use the increased memory as follows:

1   Select the Chooser from the Apple (🍎) menu.

2   Select items in the Chooser as follows:

First, click this icon. (If necessary, use the scroll bar and arrows to find the icon.)

Second, if the network has zones, click one to select it.

Third, click the name of your printer.

Finally, click the Setup button, which opens the Setup dialog box.
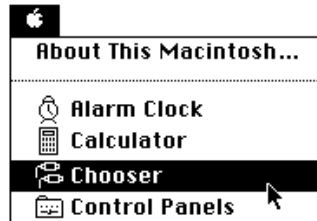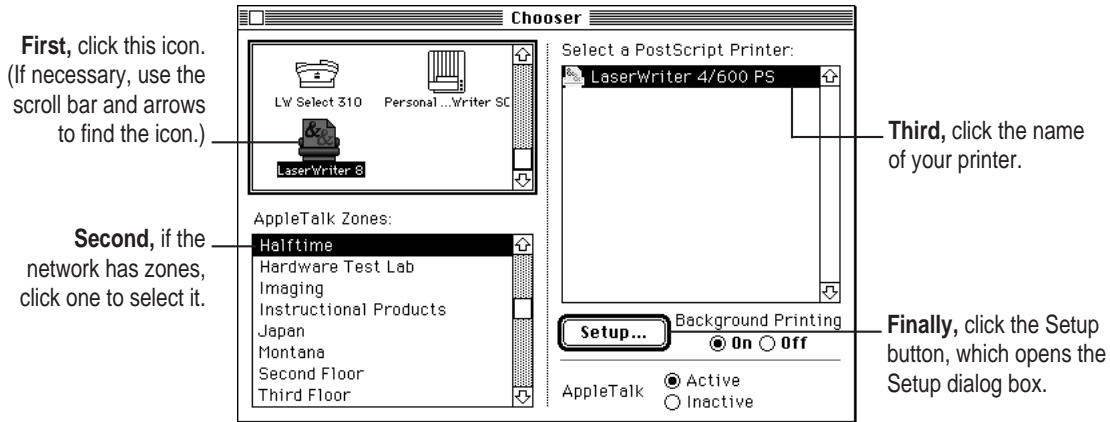
3   In the Setup dialog box, click Auto Setup.

The Macintosh displays messages on your screen while it selects the correct PostScript Printer Description (PPD) file for your LaserWriter.

4   If the Setup dialog box has only four buttons, click More Choices to see the rest of the buttons.

5 **Click Configure to see the Installable Options dialog box.**

6 **In the Installable Options dialog box, choose Upgrade to 6 MB from the pop-up menu.**

```
┌─────────────────────────────────────────────────────────────┐
│  ┌──┐    Current Printer Description File (PPD) Selected:     │
│  │&&│    "LaserWriter 4/600 PS"                               │
│  └──┘                                                          │
│  Installable Options:                                         │
│     Memory Configuration: │ Upgrade to 6 MB ▼ │              │
│                                                               │
│                                                               │
│                                                               │
│                           ┌──────────┐  ┌─────────────┐       │
│                           │  Cancel  │  ║     OK      ║       │
│                           └──────────┘  ┗━━━━━━━━━━━━━┛       │
└─────────────────────────────────────────────────────────────┘
```
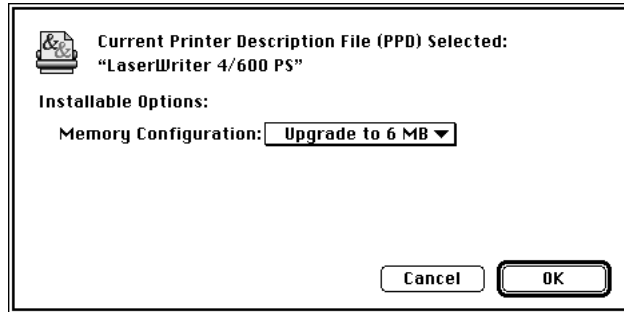
7 **Click OK to return to the Chooser.**

8 **Close the Chooser by clicking its close box (in the top-left corner).**

Appendix D
Removing the Desktop Printing Software

IMPORTANT If you are using QuickDraw GX on your computer, you cannot remove the desktop printer software as described in this appendix.

The printing software that is installed in Chapter 1 requires that you have at least one printer icon on your desktop. This desktop printer software requires from 300 to 500K of your computer's memory. If you use application programs that take up large amounts of memory, and your computer memory is low, you can remove the desktop printer software. When you remove the desktop printer software, your computer uses the original PrintMonitor supplied with your system software.

To remove the desktop printer software, follow the instructions below.

1 **Quit any programs you are running.**

2 **While holding down the Shift key on the keyboard, choose the Restart command from the Special menu. Hold the Shift key down until you see the "Extensions Off" message on your screen or until your normal desktop appears.**

3 **Open the System Folder and find the PrintMonitor Documents folder.**

4 **Open the PrintMonitor Documents folder and drag any files within it to the Trash.**

5 **Close the PrintMonitor Documents folder.**

6 **Open the Extensions folder in the System Folder.**

7 Drag the files Desktop Printer Extension, Desktop PrintMonitor, and Desktop Printer Spooler from the Extensions folder into another folder on your hard disk.

8 Choose Restart from the Special menu to restart your computer.

When the Macintosh desktop appears, an X appears through your desktop printer icons.

9 Drag the desktop printer icons to the Trash.

Your Macintosh will now use the PrintMonitor software when you print documents. See the next section for more information about using PrintMonitor.

If you want to use the desktop printer software later, you can restart your computer with the extensions off (see Step 2 of the previous instructions), drag the three desktop printer files (listed in Step 7) into your Extensions folder, and restart the computer.

The desktop printer software is also provided on the installation disks that came with your printer. You can reinstall the desktop printer software using the installation disks.

Monitoring and controlling print requests without desktop printers

If you don't have desktop printers, you must use the PrintMonitor program to monitor and control control background printing.

1 **While your document is printing, choose PrintMonitor from the Application menu at the far right of the menu bar.**

PrintMonitor is available only when background printing is on.

If you turn off background printing, messages on your screen keep you informed of printing status.

2 **In the PrintMonitor dialog box, review the status of documents that are printing (and make any changes you want).**

The document that's currently printing appears here.

To cancel the current print request, click here.

Comments about the status of the document being printed appear here.

Documents that are waiting to print are listed here.

To schedule a specific time for a document to print, click its name in the list, then click Set Print Time.
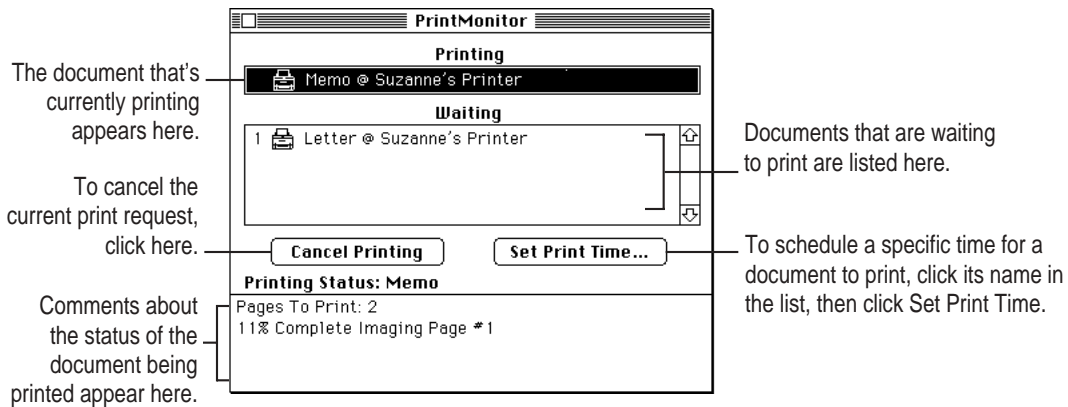
3 **When you finish, click the close box.**

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