EPSON®

Stylus® COLOR 500

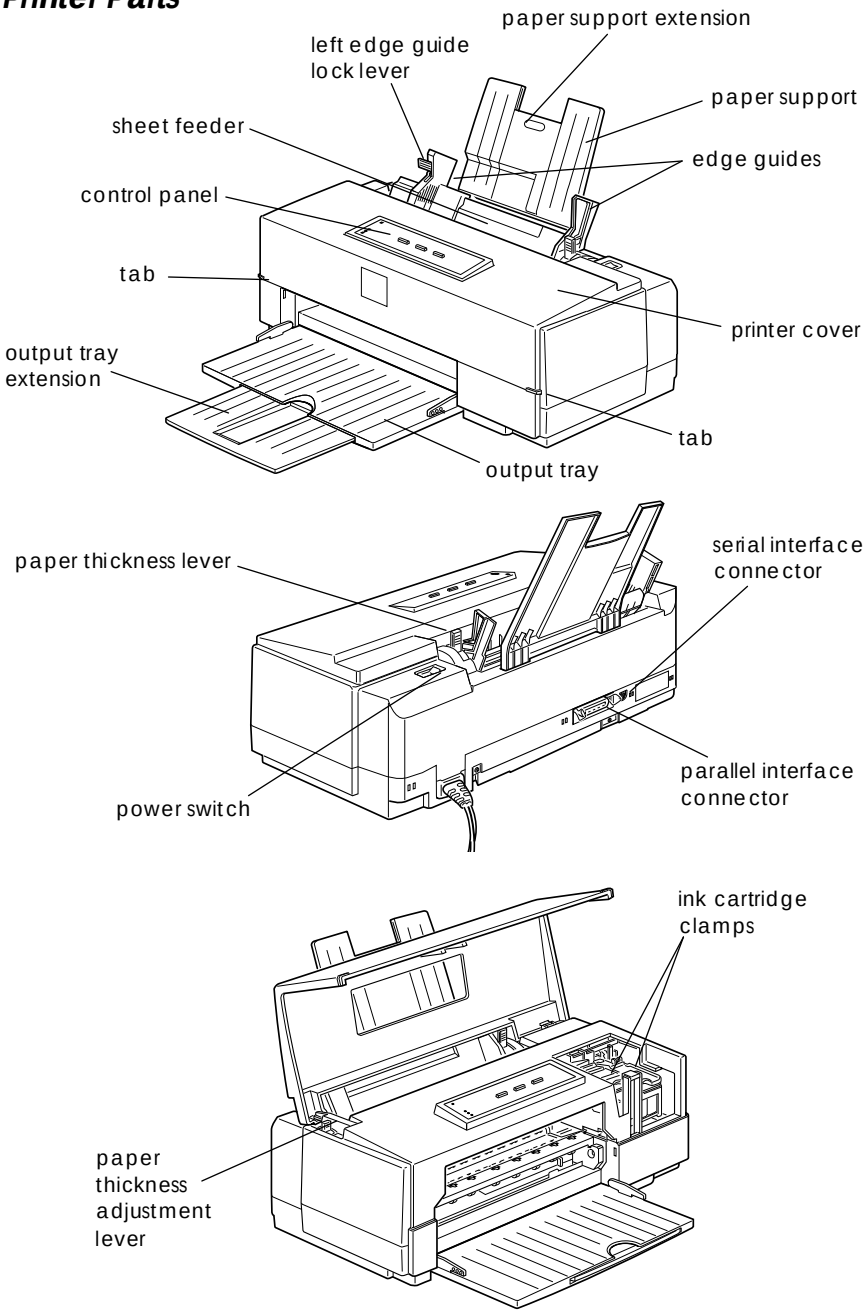
COLOR INK JET PRINTER

User's Guide

3/96

Printed on recycled paper with at least 10% post-consumer content

Printer Parts



FCC Compliance Statement
For United States Users

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio or television reception. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio and television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures.

- ❑ Reorient or relocate the receiving antenna.
- ❑ Increase the separation between the equipment and receiver.
- ❑ Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- ❑ Consult the dealer or an experienced radio / TV technician for help.

WARNING

The connection of a non-shielded equipment interface cable to this equipment will invalidate the FCC Certification of this device and may cause interference levels which exceed the limits established by the FCC for this equipment. It is the responsibility of the user to obtain and use a shielded equipment interface cable with this device. If this equipment has more than one interface connector, do not leave cables connected to unused interfaces. Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

For Canadian Users

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de Classe B prescrites dans le règlement sur le brouillage radioélectrique édicté par le Ministère des Communications du Canada.

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Introduction

The EPSON® Stylus® COLOR 500 is an affordable, high-quality ink jet printer that can print up to 16 million colors at a resolution of 720 × 720 dpi to produce full-color, photo-quality images. It also produces realistic grayscale images, laser-quality text, and line art. The printer's ink jet technology allows it to operate quietly, keeping your workspace peaceful.

The Stylus COLOR 500 is easy to install and use. You simply set it up and install the printer driver software as described in this book. The printer has built-in parallel and serial interfaces, so you can connect it to an IBM® PC compatible computer or an Apple® Macintosh.® You can even connect both simultaneously; the printer automatically switches between interfaces as it receives print data.

Your printer comes with software for both the PC and the Macintosh. This printer software includes a "driver" that controls printing and lets you choose from a wide variety of printer settings. You can change settings to improve print quality, speed up printing, or achieve special printing effects. And to make your selections easy, both printer drivers include an automatic setting which determines the best printer settings for the type of data you are printing.

Getting the Most Out of Your Printer

To achieve the highest quality printout, you should know a few of the elements that contribute to outstanding color printing:

- **Resolution** is a measure of the amount of detail that can be represented on the page. The higher the resolution, the more detailed and realistic the image, and the longer it takes to print. For printed images, resolution is measured in dots per inch (dpi). Your printer has three resolutions, or printing modes: 720 dpi, 360 dpi, and Economy (180 dpi).

  Use 720 dpi for the best possible images. For high-quality images in less time, use 360 dpi. When speed is important and draft quality is good enough, use Economy (180 dpi). For more information, see Chapter 2 (for Windows) or Chapter 3 (for Macintosh).

- **Paper type and quality** are very important. Although you get good results with plain bond paper, you will get better results by using coated or glossy papers because they do not absorb as much ink.

  To ensure the best possible quality, EPSON offers coated papers, glossy papers, and transparencies that are specially formulated for the inks used by the printer. You can order these products directly from EPSON Accessories at **(800) 873-7766** (U.S. sales only). In Canada call **(800) BUY-EPSON** for sales locations. For more information about special papers and other media, see Chapter 4.

- **EPSON ink cartridges** (black and color) are specially formulated to work with EPSON papers and the printer driver software to deliver the best looking output. Always use genuine EPSON ink cartridges and do not refill them. Other products may cause damage not covered by EPSON's warranty.

- **Printer driver settings** control every aspect of how your printer prints, so be sure to select settings that are appropriate for your images each time you print. If you are using Windows, see Chapter 2 for information about the printer driver software. If you have a Macintosh, see Chapter 3. Both drivers include online help to make using the driver as easy as possible.

If You Are New to Color Printing

Color printing with the EPSON Stylus COLOR 500 produces amazing images, whether you print text, graphics, line drawings, photographs, or documents containing many different image types. However you use your color printer, keep the following in mind:

- Leave a large amount of unused hard disk space on your computer to make room for your color images. A full-page color photographic image may require 40MB or more of disk space, depending on the resolution. To reduce file size, you can decrease the size and resolution of your images using your printer driver and application software.

- Color printing takes time because of the complex processing required to create a color image. How much time depends on the size and type of your image, the resolution you use, the speed of your computer, and the type of interface you are using. (Serial printing takes longer than parallel printing.) However, the fantastic results make the time spent well worth it.

- Your screen colors will not exactly match the printed colors because your computer monitor and printer use different methods to produce the colors you see. If you scan images using a scanner, the image goes through another interpretive process that also affects the color.

  Monitors and scanners produce colors by combining red, green, and blue—the RGB method. Monitors can produce up to 16 million colors by turning on and off the tiny red, green, and blue phosphors contained in each pixel on the screen. Colors produced this way differ from colors produced by your printer's cyan, magenta, yellow, and black ink—the CMYK method.

  Your printer driver settings help you closely match colors for your image type, resolution, and paper or other media. If you need extreme precision in matching colors, you can use a color calibration system available with many software applications. If you use a scanner, make sure your scanning software is set to the correct setting for ink jet printers to help you match colors. Also, your application may include image editing capabilities that let you adjust the colors.

Energy Star Compliance

As an Energy Star Partner, EPSON has determined that this product meets the Energy Star guidelines for energy efficiency.

The EPA estimates that if all desktop computers, printers, and other peripheral devices met Energy Star standards, energy cost savings would exceed $1 billion annually and carbon dioxide emissions would be reduced by 20 million tons.

All of EPSON's ink jet printers conform to Energy Star standards.

Energy-saving Tips

Here are a few tips you can use to be even more energy-wise:

- ❑ If your monitor isn't Energy Star compliant, turn it off when you're not using it.
- ❑ Turn off your computer, printer, and monitor each day when you are done using them.
- ❑ Use the print preview option in your application software before you print something so you can catch errors before you print.
- ❑ If you have an electronic mail system available to you, send e-mail rather than memos. Not only is this faster, but you'll save paper and storage space too.

How to Use This Manual

This manual contains all the information you need to set up and use your printer.

Chapter 1, "Setting Up the Printer," provides simple steps for setting up your printer, running a self test, and connecting the printer to your computer.

Chapter 2, "Installing and Using the Windows Printer Software," explains how you install and use the printer driver if you are running Windows on your IBM compatible PC.

Chapter 3, "Installing and Using the Macintosh Printer Software," describes installing and using the printer driver on a Macintosh computer.

Chapter 4, "Paper Handling," explains how to select the right paper or other media for your print job and load it in your printer.

Chapter 5, "Controlling the Printer," provides instructions for managing the printer's operation through its control panel, the printer software, and the printer's Default setting mode.

Chapter 6, "Maintenance," contains instructions for cleaning the print heads, replacing the ink cartridges, cleaning the printer, calibrating the printer, and transporting it.

Chapter 7, "Troubleshooting," contains guidelines for solving any print quality and printer operation problems you may have.

Appendix A, "Technical Specifications," gives the specifications for the Stylus COLOR 500 printer.

Appendix B, "Commands and Character Tables," lists the EPSON ESC/P 2™ and IBM® X24E emulation commands supported by the printer and shows the printer's built-in character tables.

A **Glossary** and **Index** are provided at the end of the manual.

Where to Get Help

If you purchased your printer in the United States or Canada, EPSON provides customer support and service through a network of Authorized EPSON Customer Care Centers. EPSON also provides the following services when you dial **(800) 922-8911**:

- ❑ EPSON fax-on-demand technical information library
- ❑ Product literature on current and new products
- ❑ Assistance in locating your nearest Authorized EPSON Reseller or Customer Care Center

- ❑ Technical information on the installation, configuration, and operation of EPSON products

- ❑ Customer relations.

You can purchase ink cartridges, paper, parts, printed manuals, and accessories for EPSON products from EPSON Accessories at **(800) 873-7766** (U.S. sales). In Canada, call **(800) BUY-EPSON** for sales locations.

If you purchased your printer outside the United States or Canada, contact your EPSON dealer or the marketing location nearest you for customer support and service.

If you need help with any software program you are using, see that program's documentation for technical support information.

Electronic Support Services

If you have a modem, the fastest way to access helpful tips, specifications, drivers, application notes, and bulletins for EPSON products is through the online services below.

World Wide Web

If you are connected to the Internet and have a Web browser, you can access EPSON's World Wide Web site at **http://www.epson.com**. EPSON's home page links users to What's New, EPSON Products, EPSON Connection,℠ Corporate Info, and EPSON Contacts. Link to the EPSON Connection for the latest drivers and FAQs (Frequently Asked Questions) and the EPSON Chat area. To get in touch with EPSON around the world, EPSON Contacts includes Contact Information for local EPSON subsidiaries.

EPSON Internet FTP Site

If you have access to the Internet and an FTP client, you can download drivers, FAQs, and sample files from EPSON's FTP site. Use your FTP client or Web browser to log onto **ftp.epson.com** with the user name **anonymous** and your e-mail address as the password.

EPSON Fax-on-Demand service

You can access the EPSON fax-on-demand technical information library by calling **(800) 922-891**1 or **(800) 442-2110**. To receive information, you must provide a fax number.

EPSON Download Service

You can call the EPSON Download Service at **(310) 782-4531**. Make sure your communications software is set to 8 data bits with 1 stop bit, no parity bit, and a modem speed up to 28.8 Kbps. See your communication software documentation for more information.

EPSON Forum on CompuServe

CompuServe® members can access the Epson America Forum on CompuServe. If you are already a member, simply type GO EPSON at the menu prompt to reach the Forum.

If you are not currently a member, you are eligible for a free introductory membership as an owner of an EPSON product. This membership entitles you to:

- ❑ An introductory credit on CompuServe
- ❑ Your own user ID and password
- ❑ A complimentary subscription to *CompuServe Magazine*, CompuServe's monthly publication.

To take advantage of this offer, call **(800) 848-8199** in the United States and Canada and ask for representative #529. In other countries, call the following U.S. telephone number: **(614) 529-1611**, or your local CompuServe access number.

Important Safety Instructions

Before using your printer, read the following safety instructions to make sure you use the printer safely and effectively.

- ❑ Turn off and unplug the printer before cleaning. Clean with a damp cloth only. Do not spill liquid on the printer.
- ❑ Do not place the printer on an unstable surface or near a radiator or heating vent.
- ❑ Do not block or cover the openings in the printer's cabinet or insert objects through the slots.
- ❑ Use only the type of power source indicated on the printer's label.
- ❑ Connect all equipment to properly grounded power outlets. Avoid using outlets on the same circuit as photocopiers or air control systems that regularly switch on and off.
- ❑ Do not let the power cord become damaged or frayed.
- ❑ If you use an extension cord with the printer, make sure the total ampere rating of the devices plugged into the extension cord does not exceed the cord's ampere rating. Also, make sure the total of all devices plugged into the wall outlet does not exceed 15 amperes.
- ❑ Except as specifically explained in this *User's Guide*, do not attempt to service the printer yourself.
- ❑ Unplug the printer and refer servicing to qualified service personnel under the following conditions:

If the power cord or plug is damaged; if liquid has entered the printer; if the printer has been dropped or the cabinet damaged; if the printer does not operate normally or exhibits a distinct change in performance. Adjust only those controls that are covered by the operating instructions.

Chapter 1

Setting Up the Printer

1

This chapter describes how to set up your printer, test it, and connect it to your computer. Refer to the illustrations on the inside front cover of this manual to identify the main components while setting up the printer.

System Requirements

See the appropriate section below (PC or Macintosh) to make sure your system meets the following minimum requirements.

For an IBM Compatible PC

To use your printer and its driver with your PC, we recommend you have these computer system components:

- ❑ 80386/25 MHz or faster processor
- ❑ Microsoft Windows 3.1, Windows for Workgroups 3.1, or Windows 95
- ❑ At least 8MB of available RAM (more for Windows 95)
- ❑ A minimum of 40MB of unused hard disk space for storing images
- ❑ A shielded, twisted-pair parallel cable (6 to 10 feet long) to connect your computer to the printer's parallel interface; the cable must have a D-SUB, 25-pin male connector for the computer and a 36-pin, Centronics® compatible connector for the printer.
- ❑ VGA or higher standard monitor.

For a Macintosh

To use your printer with a Macintosh, we recommend you have these computer system components:

- ❑ Any Macintosh or Power Macintosh model except the Macintosh +, Macintosh 512, or Macintosh PowerBook™ 100
- ❑ System 7.1 or later
- ❑ At least 8MB of available system RAM
- ❑ A hard disk with at least 40MB of unused space to store and print color images. The amount of space you need depends on the number and size of your color images.
- ❑ A standard Apple System / Peripheral-8 cable (part number M0197) or equivalent (RS-422, 8-pin, mini DIN male / male). You can purchase the following serial cables from EPSON Accessories: F2V024-06 (Macintosh to ImageWriter II, 6-foot cable, mini-din 8 to male) or F2V024-10 (Macintosh to ImageWriter II, 10-foot cable, mini-din, 8 to male).

Choosing a Location

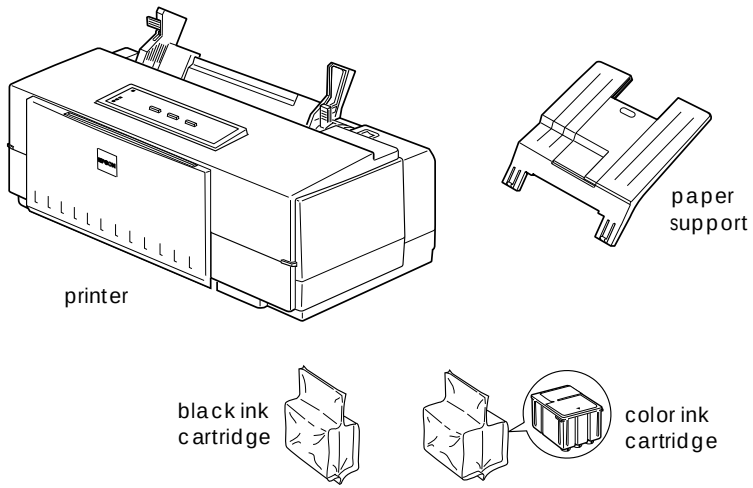
When choosing a location for the printer, use a surface that is flat, horizontal, and stable.

Avoid locations subject to rapid changes in temperature and humidity. Also keep the printer away from direct sunlight, heat sources, and sources of electromagnetic interference, such as the base units of cordless telephones.

Always leave adequate space around the printer to accommodate its cables.

Unpacking the Printer

In addition to this manual, your printer box should include four EPSON printer driver diskettes, a *Quick Setup Guide*, a Notice Sheet, a registration card, and these items:



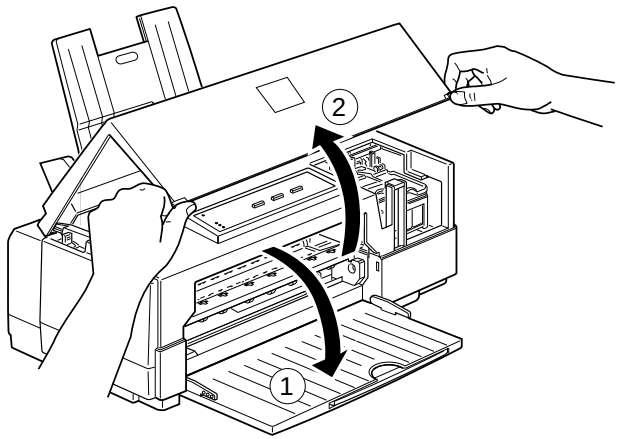
Removing the Protective Materials

You must remove all protective materials packed around and inside your printer before you set it up and turn on the power. Follow the directions on the Notice Sheet packed with the printer to remove all the protective materials. Save all packaging and protective materials in case you need to transport the printer in the future. It should always be transported in its original packaging or equivalent materials.

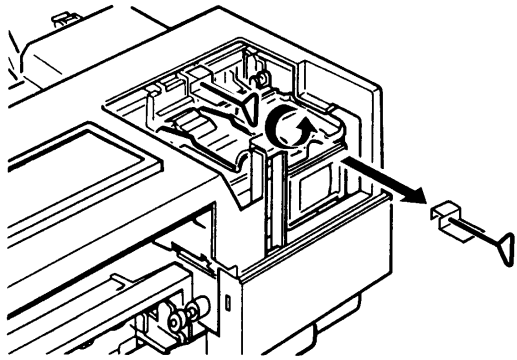
Removing the Transportation Screw

Inside the printer, there is a transportation screw securing the print head to the carriage, which you must remove before using your printer.

1. Lower the output tray at the front of the printer. Then lift up the printer cover.



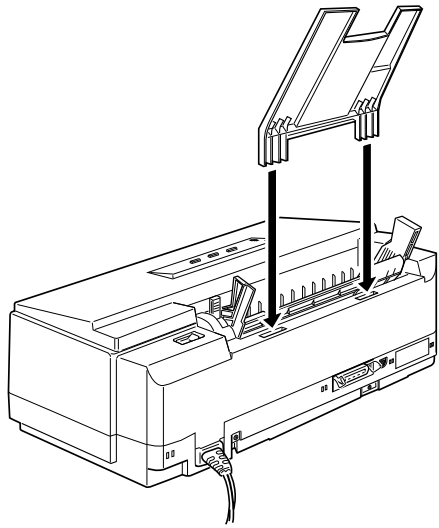
2. Loosen the transportation screw by turning its handle counterclockwise, as shown below. Then lift it off the carriage. Save the screw so you can reinstall it if you transport your printer later. (See Chapter 6 for more information on transporting the printer.)



3. Close the printer cover.

Attaching the Paper Support

Insert the tabs on the base of the paper support into the slots at the back of the printer.

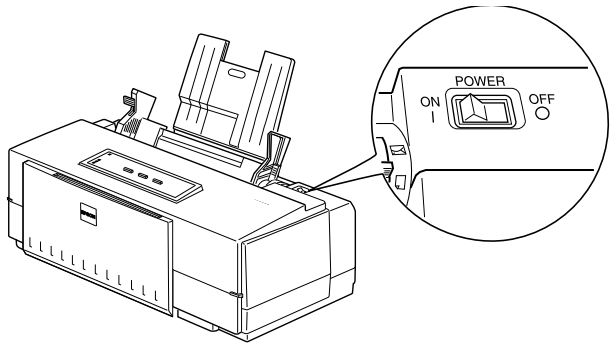


Plugging In and Turning On the Printer

Follow these steps to plug in and turn on the printer:

1. Make sure you have removed the transportation screw and all protective packing materials from around and inside the printer. (See page 1-4 for more information.)

2. Make sure the printer is turned off by checking the position of the POWER switch, as shown below.



3. Plug the power cord into a properly grounded electrical outlet.

4. Turn on the printer by pressing the POWER switch.

Installing the Ink Cartridges

Follow the steps in this section to install your printer's ink cartridges. Install both ink cartridges; if either the color or black cartridge is not installed, the printer will not work.

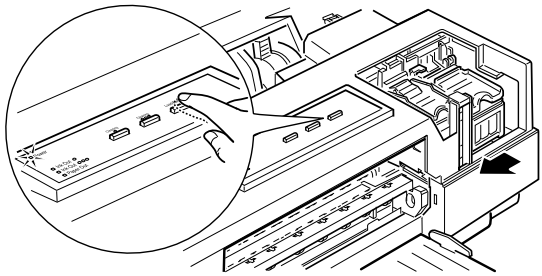
W ***Warning:***
The ink cartridges are self-contained units. Under ordinary use, ink will not leak from a cartridge. If ink gets on your hands, wash them thoroughly with soap and water. If ink gets into your eyes, flush them immediately with water.

C ***Caution:***
Do not open the ink cartridge packages until just before you install them or they may become too dry.

1. Make sure the printer is turned on.

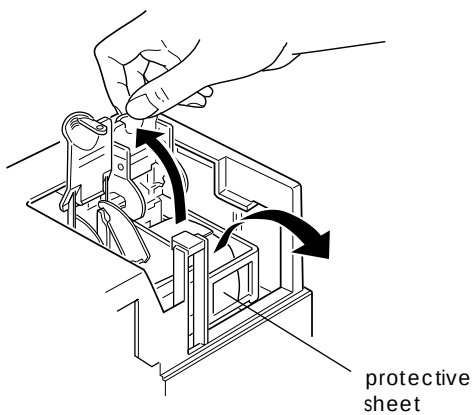
2. Lower the output tray and lift up the printer cover.

3. Hold down the Load/Eject button on the control panel for about five seconds until the print head moves slightly left, to the ink cartridge install position. The Power light begins flashing.



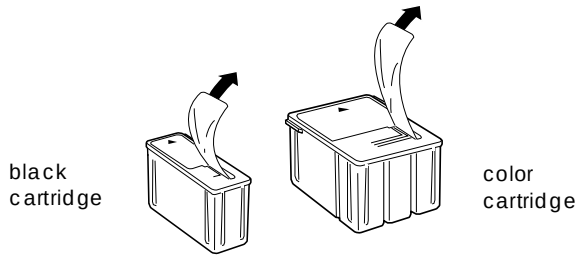
C ***Caution:***
Never move the print head by hand; always use the Load/Eject *button to move it.*

4. Pull up each of the ink cartridge clamps to open them. (If you don't do this within 30 seconds after pressing Load/Eject, the printer automatically moves the print head back to its home position, far right. If this happens, press Load/Eject again.)



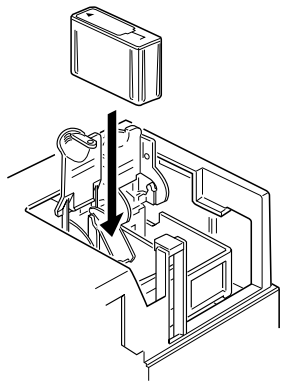
5. Remove the protective sheet from the color cartridge holder, on the right.

6. Open the foil ink cartridge packages and take out the cartridges. Remove the yellow tape seal from the top of each one.



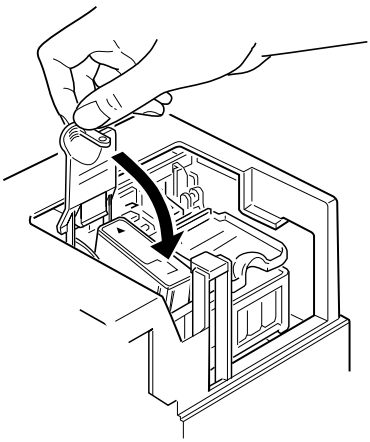
C ***Caution:***
You must remove the yellow tape seal from the top of each cartridge; leaving the tape on permanently damages an ink cartridge. However, do not remove the tape seal from the bottom of the cartridge; ink will leak out.

7. Lower the cartridges into their holders with the labels facing up and the arrow on the top pointing toward the back of the printer. The color cartridge, which is larger, goes on the right; the black ink cartridge on the left.



Be sure to install both ink cartridges. The printer will not work if only one cartridge is installed.

8. Push down the ink cartridge clamps until they lock in place.



C ***Caution:***
Once you install the ink cartridges, do not open the clamps or remove the cartridges except to replace them with new ones. Once you remove a cartridge, do not reuse it. Reusing a cartridge that has been removed may damage the print head.

9. Press the Load/Eject button again to return the print head to its home position. (Even if you do not press Load/Eject, the print head moves back to its home position about 30 seconds after you close the clamps.)

   After you install the ink cartridges, the printer charges the ink delivery system. This takes about two minutes, and the Power light flashes until the operation is done.

C ***Caution:***
Never turn off the printer when the Power *light is flashing.*

10. Make sure the Power light is no longer flashing, then close the printer cover.

To maintain optimum print quality, the printer periodically performs a cleaning cycle on the print heads. You may notice the cleaning cycle being performed when the printer has been on for awhile without being used or when you turn it on after it has been off for awhile.

You may need to manually activate a cleaning cycle if you notice a decline in print quality; see Chapter 6.

The number of pages you can print with a single cartridge depends on the amount of text and color graphics you print. You need to replace an ink cartridge when the Ink out O or Ink out NNN lights are flashing or remain on. See Chapter 6 for instructions.

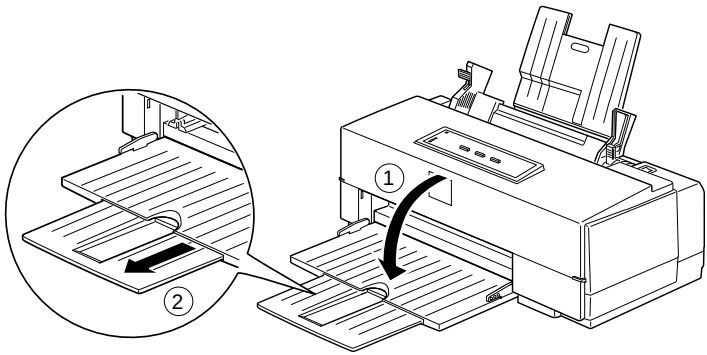
C ***Caution:***
When you need to replace ink cartridges, be sure to use only genuine EPSON ink cartridges and do not refill them. Other products may cause damage not covered by EPSON's warranty.

Loading Paper

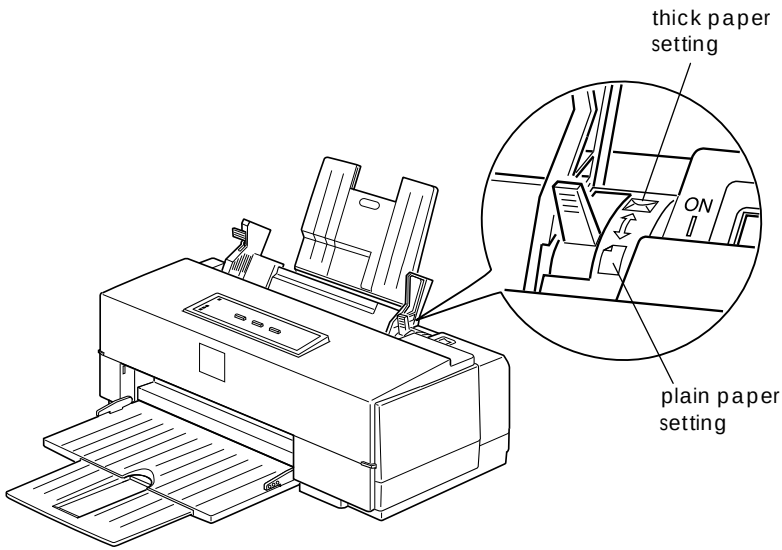
The following procedure explains how to load plain bond paper. For instructions on loading coated or glossy paper, envelopes, and transparencies, see Chapter 4.

You can load up to 100 sheets of plain paper. Always load plain paper with the printable surface facing up. The printable surface is marked with an arrow on most paper packaging. (For paper specifications, see Appendix A.)

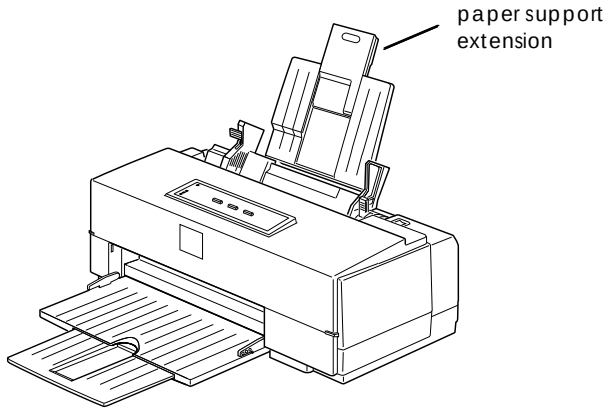
1. Lower the output tray at the front of the printer and slide out the extension.



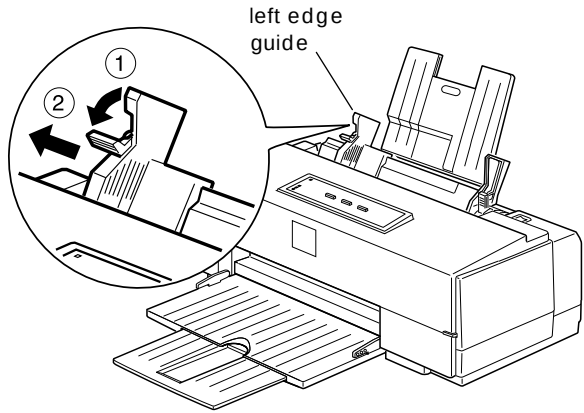
2. Before you load paper, make sure that the paper thickness lever, which controls the distance between the paper and the printer carriage, is set correctly. If necessary, move the lever to the plain paper setting.



3. If you are going to load long paper (for example, legal size paper), pull up the paper support extension.

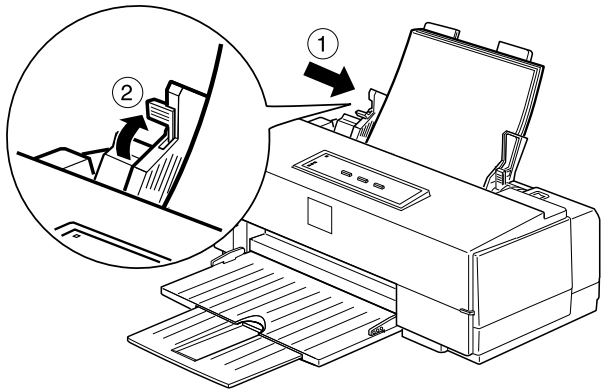


4. Make sure the left edge guide lock lever is in the down (unlocked) position and slide the left edge guide to the left as far as it will go.



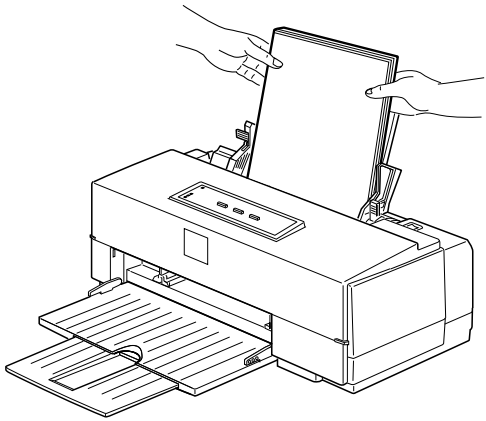
5. Load a stack of paper to set the edge guides to the correct width. Make sure that the right edge of the paper rests against the right side of the sheet feeder.

6. Slide the left edge guide against the left edge of the paper; then move the lock lever up to secure the left edge guide.



7. Remove the stack of paper and fan it. Then tap it on a flat surface to even the edges.

8. Reinsert the stack of paper, printable side toward you (face up), straight into the printer and then rest it against the paper support. This ensures that the paper is properly loaded.



You can load up to 100 sheets of plain paper. Do not load paper above the arrow printed on the inside of the left edge guide on the sheet feeder.

Now you are ready to run the printer's self test.

Testing the Printer

Before continuing, test the printer to ensure it is functioning properly. For the self test, use paper that is at least 8.25 inches (210 mm) wide.

1. Press the POWER switch to turn off the printer.

C ***Caution:***
Never turn off the printer by unplugging it or turning off a power strip. Always turn off the printer by pressing the POWER *switch.*

2. Hold down the Cleaning NNN button on the control panel while pressing the POWER switch to turn on the printer.

   The self test begins by printing in black ink on the first and last lines of the first sheet of paper to measure the page length. Then it prints character samples on the next sheet using the available fonts and colors.

3. The printer prints the test one page at a time and pauses between pages. While it is paused, press the Load/Eject button to print the next page.

4. To end the self test, turn off the printer while it is paused.

If the quality of the test output is not good, clean the print heads as described in Chapter 6.

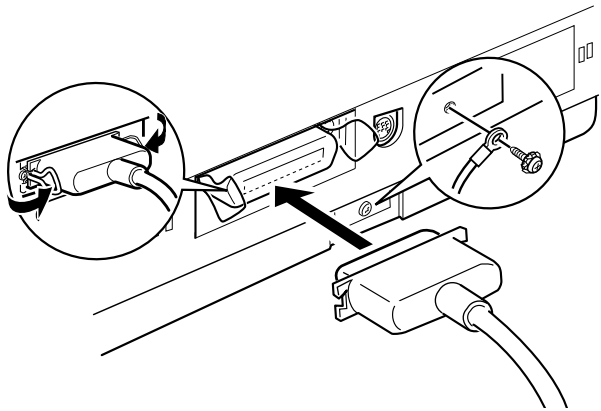
Connecting the Printer to a PC

If you are connecting the printer to an IBM PC compatible computer, follow the steps in this section.

You need a shielded, twisted-pair parallel cable (6 to 10 feet long) to connect your computer to the printer's built-in parallel interface. The cable must have a D-SUB, 25-pin male connector for your computer and a 36-pin, Centronics compatible connector for the printer.

1. Make sure both the printer and computer are turned off.

2. Plug the 36-pin end of the cable securely into the printer's interface connector. Then squeeze the wire clips together until they lock in place on both sides.



If your cable has a ground wire, attach it to the ground connector below the interface connector.

3. Plug the 25-pin end of the cable into the computer's parallel interface. (If necessary, see your computer manual for more information.)

4. Turn on the printer by pressing the POWER switch and then turn on your computer.

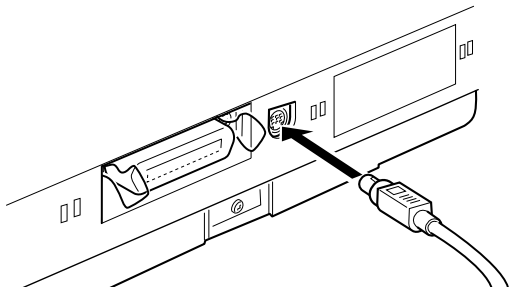
Now see Chapter 2 for instructions on installing and using the printer software.

Connecting the Printer to a Macintosh

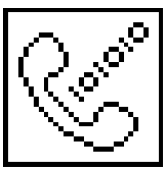
To connect the printer to a Macintosh using the serial interface, you need an Apple System / Peripheral-8 cable (part number M0197) or equivalent. Do not use an AppleTalk™ cable; it will not work.

1. Make sure both your printer and Macintosh are turned off.

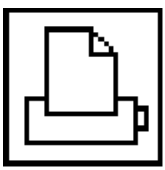
2. Connect one end of the interface cable to the serial connector on the back of the printer, as shown.



3. Connect the other end of the cable to either the modem or printer port on the Macintosh, marked with these icons:



modem port



printer port

4. Turn on the printer by pressing the POWER switch.

5. Turn on your Macintosh.

Now see Chapter 3 for instructions on installing and using the printer software.

Chapter 2

Installing and Using the Windows Printer Software

This chapter describes how to install and use the Stylus COLOR 500 Windows printer software on your PC. If you have a Macintosh, see Chapter 3 instead.

The printer software includes a printer driver, which allows your computer to control the printer; you must install it to use the printer. The printer driver lets you choose from a wide variety of settings to customize the appearance of your printed documents.

The printer software also includes the Spool Manager, which manages your printing, and the Calibration utility, which you can use to adjust the vertical alignment of your printouts. See Chapter 5 for information on the Spool Manager and Chapter 6 for instructions on using the Calibration utility.

Note:
Be sure to make backup copies of your software diskettes.

Installing the Printer Software

If you are using Windows 3.1, follow the steps in the next section to install the printer software. If you are running Windows 95, see page 2-5 for instructions.

Installing the Software for Windows 3.1

1. Make sure your printer and computer are turned on and Windows is running.

2. Insert the Windows Setup Disk 1 in a diskette drive.

3. In the File menu, select Run. You see the Run dialog box.

4. In the Command Line box, type A:SETUP (or B:SETUP if you inserted the diskette in drive B). Press Enter or click OK.

5. When you see the Printer Utility Setup dialog box, highlight Epson Stylus COLOR 500 and click OK. The installation program begins copying the files. You see a screen showing the progress of the installation as it proceeds.

6. When you see the prompt to insert Setup Disk 2, remove Disk 1 and insert Disk 2. Click OK.

   After a few moments, the installation program creates the EPSON program group in Windows containing these icons:

   Spool Manager 3
   EPSON Printer Calibration
   EPSON Stylus COLOR 500 Help
   EPSON Stylus ReadMe

7. When you see the message that the installation is complete, click OK to exit Setup.

The installation program automatically selects the EPSON Stylus COLOR 500 printer as your default printer for Windows applications. It also assigns the printer driver to port LPT1. If this configuration matches your system, go on to page 2-9 for information on accessing the driver. If you need to change the default printer driver or the port assignment, see the next section.

Note:
If you installed the printer software using Windows 3.1 and will upgrade to Windows 95 later, you will need to reinstall it using the steps beginning on page 2-5 after you install Windows 95. This sets up the driver correctly for Windows 95.

Changing the default printer or printer port

If you do not want to use the EPSON Stylus COLOR 500 printer driver as your default printer in Windows or if you want to use it on a different printer port, follow these steps:

1. In the Main window, double-click the Control Panel icon.
2. Double-click the Printers icon. The Printers dialog box appears.
3. To change the default printer, select the printer you want to use as your default printer from the Installed Printers drop-down list. Then click the Set As Default Printer button.

   If you do not need to change the printer port assignment for the EPSON Stylus COLOR 500 printer, go to step 8.
4. To change the port assignment, select EPSON Stylus COLOR 500 in the Installed Printer drop-down list.
5. Click the Connect button. You see the Connect dialog box.
6. In the Ports drop-down list, select the port to which you want to assign the EPSON Stylus COLOR 500 printer. (Click Help for instructions on selecting other options in the Connect dialog box.)
7. Click OK to close the Connect dialog box.
8. Click Close to exit the Printers dialog box.
9. Close the Control Panel window.

See page 2-11 for instructions on using the printer driver.

Installing the Software for Windows 95

Follow these steps to install the printer driver using the Windows 95 plug-and-play capabilities:

1. Make sure the printer is connected to the computer's parallel port.

2. Turn off the printer and your computer, if they are on.

3. Turn on the printer first; then turn on the computer. Your computer begins loading Windows 95.

4. If you defined a password, enter it at the prompt. You see the New Hardware Found screen.

   Note:
   If you do not see the New Hardware found screen, follow the procedure under "Installing the driver while running Windows 95" on page 2-7 instead.

5. Your printer model name is displayed on the screen. Click the Driver from disk provided by hardware manufacturer button (if not already selected). Do not select any of the other buttons.

6. Click OK. You see the Install From Disk screen.

7. Insert the Windows Setup Disk 1 in a diskette drive.

8. If you inserted the diskette in drive A, click OK. Otherwise, change the drive letter in the Copy manufacturer's files from box and click OK.

9. At the next screen you can give the printer a unique name. We recommend that you keep the model name, but you can type a new one in the Printer name box, if desired.

   To use the printer as the default printer for all Windows 95 applications, select Yes (No is the default).

10. Click the Finish button. The program copies the files from Disk 1 to your hard disk.

11. When you see the prompt to insert Disk 2, remove Disk 1 and insert Disk 2. Then click OK.

    After the program has installed all the files, it creates the Epson group containing the following icons:

    Spool Manager 3
    EPSON Printer Calibration
    EPSON Stylus COLOR 500 Help
    EPSON Stylus ReadMe

12. When the installation is complete, click OK.

The Setup program adds an icon to the Windows 95 Printers group using the printer name you selected.

Your printer driver is now installed. Go to page 2-9 for information on accessing and using the driver.

Installing the driver while running Windows 95

If you had trouble installing the printer driver using the plug-and-play feature, follow these steps to install the printer driver:

1. Make sure Windows 95 is running.
2. Insert the Windows Setup Disk 1 disk in a diskette drive.
3. Double-click the My Computer icon.
4. Double-click the appropriate drive icon: 3½ Floppy [A:] or 3½ Floppy [B:].
5. Double-click the Setup icon. The EPSON Printer Utility Setup dialog box appears.
6. Select Stylus COLOR 500 in the Printer Model tab; then click OK to start the printer driver installation.
7. The program starts copying files from Disk 1. When you see the prompt to insert Disk 2, remove Disk 1 and insert Disk 2. Click OK.

   After the program has installed all the files, it creates the Epson group containing the following icons:

   Spool Manager 3
   EPSON Printer Calibration
   EPSON Stylus COLOR 500 Help
   EPSON Stylus ReadMe

8. When the installation is complete, click OK.

For information on accessing the driver, see "Accessing the Driver From Windows 95" on page 2-10.

Installing a Driver for DOS Programs

Most DOS software programs include drivers for EPSON ESC/P 2™ printers. If the Stylus COLOR 500 driver is not listed in your software, choose the first printer available in the lists below. Also check with your software manufacturer to see if a Stylus COLOR 500 driver is available or is included with a new version of your software.

When printing in color as well as black and white, select:

LQ-860
LQ-2550

When printing black and white only, select:

LQ-870/1170
LQ-570(+)/1070(+)
SQ-870/1070
LQ-850
LQ-500

Note:
These drivers let you use your printer but do not support some features, such as 720 dpi and MicroWeave.

Accessing the Printer Driver

You can access the driver in different ways, depending on how you want to use the settings you select:

- ❑ If you want the changes to apply only to the document(s) you will print in a particular Windows application, see the following section.

- ❑ If you want the settings to apply to all Windows applications, access the driver as described on page 2-10 for either Windows 3.1 or Windows 95.

Accessing the Driver From Windows Applications

If you want to change the driver settings only for the software application you are currently using, you can access the driver by choosing Print or Print Setup from the File menu of your application. If you choose Print Setup, you access the printer driver directly and see the Main menu tab shown on page 2-11.

If you choose Print, you first see a Print dialog box. The Print dialog box contains the settings you change most often, including the number of copies and the print range. To access the printer driver settings, choose the Printer, Setup, Properties, or Options button. (You may need to select another option, depending on your software application.)

Note:
The printer driver settings you select through your Windows application apply only for the duration of your session with that application. Once you exit the application, the driver settings return to the default values selected through the Windows 3.1 Control Panel or Windows 95 (or the driver's defaults).

Accessing the Driver From Windows 3.1

Follow these steps to access the driver from the Windows Control Panel:

1. Double-click the Control Panel icon in the Main program group.
2. Double-click the Printers icon.
3. Choose EPSON Stylus Color 500 from the list of Installed Printers.
4. Choose Setup. You see the Main menu tab, shown on page 2-11.

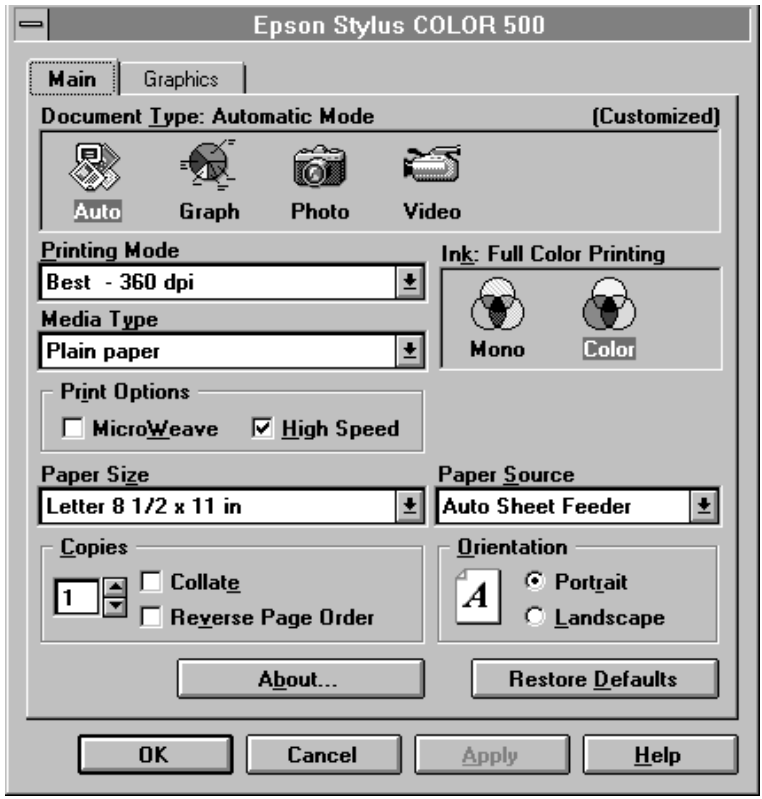
Accessing the Driver From Windows 95

Follow these steps to access the driver from the Windows 95 My Computer group:

1. Double-click the My Computer icon.
2. Double-click the Printers icon.
3. Right-click the EPSON Stylus COLOR 500 icon (or double-click the icon and then pull down the Printer menu).
4. Select Properties.
5. Click the Main tab. You see the Main menu tab, shown on page 2-11.

Using the Printer Driver

However you accessed the printer driver, you see the Main menu tab:



There are two menu tabs of printer driver settings: Main (shown above) and Graphics. These settings, which are listed in the tables on pages 2-13 and 2-14, let you control the appearance of your printed documents. All the driver settings are preset to default values which produce good quality output for the most common types of documents.

The printer driver includes an Auto (Automatic) setting for Document Type. When Auto is selected, the driver automatically chooses the best print settings for your document by analyzing the different types of data to be printed. It adjusts the Ink, Color Matching, and Halftoning settings for each object on the page to produce the best printed results. It is a good idea to try printing your document with the Document Type set to Auto before changing any other settings in the driver.

You should always check the following settings before printing to make sure the driver selections are appropriate for the media you are using:

- **Document Type–**the type of image to be printed: business graphics, photographs, text, etc.
- **Printing Mode–**resolution: 720 dpi, 360 dpi, or Economy-180 dpi
- **Ink–**whether you are printing in color or monochrome
- **Media Type–**the type of paper or other media you are using
- **Paper Size–**the size of paper you have loaded.

The best way to learn about your printer driver is to use the driver's extensive online help. It explains all the options available for each setting and also describes how to use the printer driver. See "Using Online Help" on page 2-15.

For general information on changing settings, see page 2-14.

The following tables summarize the settings available in each menu tab (with default values in bold type). Because the driver software is updated periodically, some of your options may be slightly different than the ones shown here.

Main menu settings

Setting	Options
Document Type	**Auto (Automatic mode)** Graph (Business Graphics) Photo (Photographic Images) Video (Video/Digital Camera) Economy (Monochrome)
Ink	Mono (Monochrome Printing) **Color (Full Color Printing)**
Printing Mode	Super - 720 dpi **Best - 360 dpi** Economy-180 dpi
Media Type	**Plain paper** Special coated paper - 360 dpi Special coated paper - 720 dpi High-quality glossy paper Transparency
Print Options	MicroWeave (On, **Off**) High Speed (**On**, Off)
Paper Size	A4 210 x 297 mm A4 (Centered) 210 x 297 mm B5 182 x 157 mm **Letter 8 1/2 x 11 in** Letter (Centered) 8 1/2 x 11 in Legal 8 1/2 x 14 in Legal (Centered) 8 1/2 x 14 in Envelope #10 4 1/8 x 9 1/2 in Envelope DL 110 x 220 mm Statement 5 1/2 x 8 1/2 in Executive 7 1/2 x 10 in A6 Index card (not used) User Defined
Copies	Number (**1**-99) Collate (On, **Off**) Reverse Page Order (On, **Off**)
Orientation	**Portrait** or Landscape
Paper Source	**Auto Sheet Feeder**

Graphics menu settings

Setting	Options
Color Matching*	Disabled Use Windows' matching **Use Driver's matching** Match for business graphics Match for photo images Match for logo
Color Balance*	Saturation –50% - **0%** - +50% Red Strength –50% - **0%** - +50% Green Strength –50% - **0%** - +50% Blue Strength –50% - **0%** - +50%
Halftoning**	No halftoning Error diffusion Dithering A Dithering B

* These options work as toggles, so only one appears in the menu at a time.

** There is no default setting for Halftoning; the setting is determined automatically depending on the Document Type setting.

Changing Settings

To change a setting in the printer driver, click the menu tab you want to see and click the setting you want to change. Use the scroll arrows or click the appropriate radio button to choose the desired option. Do this for each setting you want to change and then click the Apply button at the bottom of the screen to save your settings. Go to the other tab (if necessary) and do the same.

If you make one or more changes but then decide you want to go back to the default settings, select Restore Defaults. You can do this before or after applying your changes.

When you finish making changes, click OK to save the settings and close the driver.

If you make changes before selecting Apply, and you want to cancel them, click the Cancel button. This closes the printer driver.

Using Online Help

For complete information about using the printer driver, you can easily access the driver's online help any time. It provides detailed descriptions of the different settings and options.

Note:
Online help is not available for DOS applications.

Accessing Online Help From Windows 3.1

To access online help from the printer driver menus while you are in a Windows application, click the Help button at the bottom of the menu tab. Then select the topic you want help with.

To access online help from Program Manager, open the EPSON program group and click the EPSON Stylus Help icon. You see the help contents window.

If you need instructions on how to use help, click the Help button in the help screens.

Accessing Online Help From Windows 95

To access online help from the printer driver menus while you are in a Windows application, click the Help button at the bottom of the menu tab. Then select the topic you need help with.

For specific help related to any item in the menus, right-click the item, then click the What's This? prompt.

To access online help from Start, click the Start button, point to Programs, Epson, and then click EPSON Stylus Help. You see the help contents window.

If you need instructions on how to use help, click the Help button in the help screens.

Chapter 3

Installing and Using the Macintosh Printer Software

3

This chapter describes how to install and use the Stylus COLOR 500 printer software on your Macintosh. If you have a PC, see Chapter 2 instead.

The printer software includes a printer driver, which allows your computer to control the printer; you must install it to use the printer. The driver lets you control printer settings such as resolution, media type, and halftoning. The Macintosh diskettes that came with your printer contain the printer driver software and the Epson Monitor2 and Bi-D Calibration utilities.

Note:
Be sure to make backup copies of your software diskettes.

Installing the Printer Driver Software

Follow the steps below to install the Macintosh printer driver and other utilities:

1. Turn on your printer.

2. To turn off all virus protection programs before you install the printer software, hold down the Shift key while you turn on or restart your Macintosh. (After installation, you can restart the computer without pressing Shift to use the virus protection programs.)

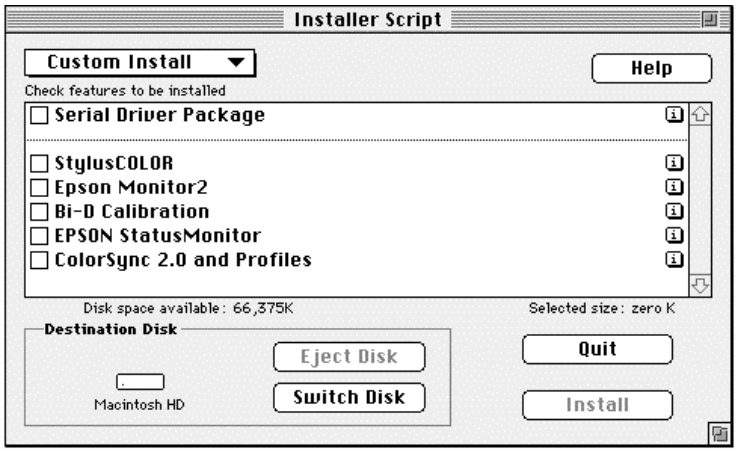
3. Insert the EPSON Macintosh Disk 1 into a diskette drive.

4. If necessary, double-click the Disk 1 icon to open the driver disk window.

   Note:
   For the latest information on your printer and its driver, double-click the README *icon in the driver disk window.*

5. Double-click the Installer icon to start installing the printer software.

6. When you see the initial screen, click Continue. You see the following screen:



7. Click the Serial Driver Package check box to select the printer driver and all its components. (Although the driver lets you install them individually, it is better to install the package.) The driver and its components are described below.

   - **StylusCOLOR** is the printer driver that lets you use the serial interface to connect the printer directly to your Macintosh.

   - **Epson Monitor2** manages print jobs that have been sent to the printer. You must turn on background printing in the Chooser to use this utility. For more information, see "Managing Print Jobs on the Macintosh" in Chapter 5.

- **Bi-D Calibration** calibrates the printer so vertical and horizontal lines are aligned. For more information, see "Calibrating the Printer" in Chapter 6.

- **EPSON StatusMonitor** keeps track of the current status of your printer, and alerts you when printer errors occur. For more information, see "Using the StatusMonitor Utility" in Chapter 5.

- **ColorSync™ 2.0 and Profiles** automatically matches the colors in your printout with the colors displayed on your monitor. Use this when printing scanned photographs or computer graphics.

  To use this feature, you may need to set the system profile for your monitor. Access the ColorSync System Profile utility through the Control Panel and click the Set Profile button. Select your monitor from the list of monitors that appears, and then click Select. Close the dialog box.

Note:

- *Custom Remove in the pull-down menu is not available.*

- *Click the*  *icon to get more information on each component.*

8. Click Install to start installing the software on your hard disk. Follow the prompts on the screen to remove Disk 1 and insert Disk 2, etc.

9. After the installation is completed, click Restart to exit the installer and restart your Macintosh.

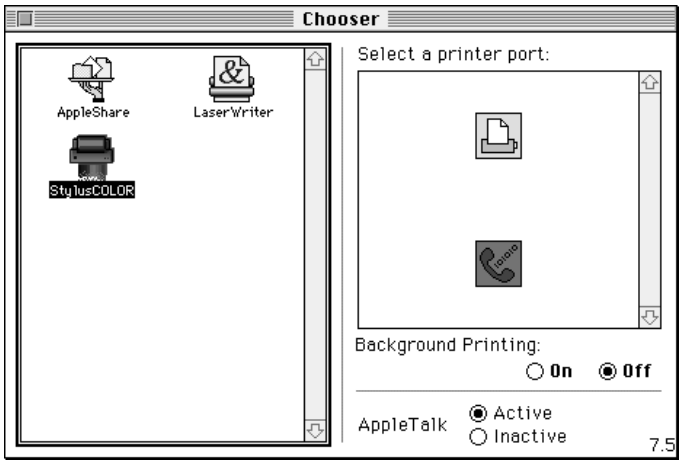
The Installer places the Bi-D Calibration utility and the EPSON Status Monitor on the hard disk. Now follow the instructions in the next section to select the printer using the Chooser.

Using the Chooser to Select the Printer

After you install the printer driver, follow the steps below to select the printer before you begin printing. You need to choose the printer only the first time you use it or whenever you want to use another printer. (Your Macintosh always prints using the last printer selected.)

Follow these steps to choose the printer:

1. Open the Chooser under the Apple menu. You see the Chooser window:



2. Click the StylusCOLOR icon. You see a dialog box asking you to confirm the current port and the connected printer.

3. Click the Confirm button. You see a message reminding you that you are selecting a new printer.

4. Click OK. You see a dialog box asking you to confirm your printer name.

5. If the Stylus COLOR 500 is shown, click OK.

   If the wrong printer is shown, the printer may be turned off or not connected properly. Turn on the printer, if necessary, and check the connections; then click RETRY. If the printer name is still wrong, change the port selection in the Chooser window and repeat steps 2 through 5.

6. Turn on background printing by clicking the On button so you can print in the background while using your Macintosh for other tasks. (You must turn on background printing to use the Epson Monitor utility to manage print jobs, as described in Chapter 5.)

   Note:
   Your system must have at least 8MB of RAM to use background printing. Background printing slows the print speed and may also slow down any software program you use while printing in the background.

7. If you are using the printer's serial connection on the printer port of your computer, you must make AppleTalk inactive by clicking the Inactive button. (You'll need to restart the Macintosh after closing the Chooser.)

   If you used the modem port, you can leave AppleTalk active.

8. Close the Chooser. You may see a reminder message to change the printer in your applications; click OK.

Now you can use the driver as described in the next section.

Using the Printer Driver

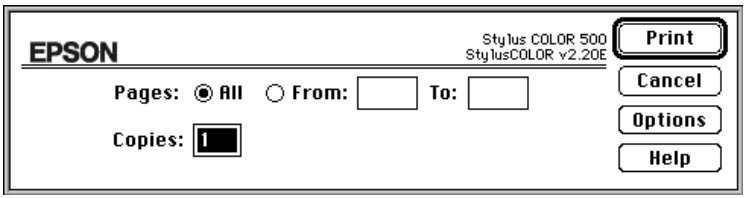
The printer driver comes with default values for all the settings, as listed in the table on page 3-9. The driver also includes an Automatic option (default) for the Method setting. This option lets the printer driver analyze each page of the document you will print and then select the appropriate halftoning settings automatically.

Accessing the Driver

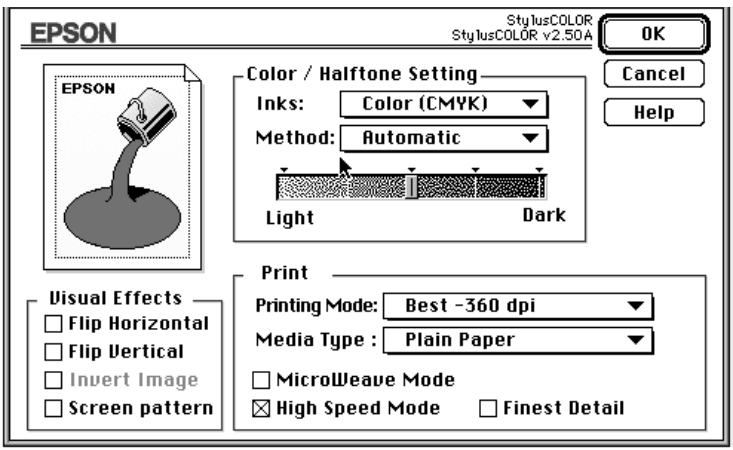
You can access the printer driver settings from two dialog boxes within your application: Print and Page Setup. Most settings are available from the Print dialog box; however, to change the paper size or orientation, use the Page Setup dialog box as described on page 3-15.

The driver settings are saved when you save your image or document. However, each time you close an application and open a new one, the default settings take effect.

To display the Print dialog box, choose Print from the file menu of your application program. You see a dialog box similar to the one shown below. (The dialog box you see depends on your software application.)



To access the printer driver settings, choose the Options button. You see the following dialog box.



The following table summarizes the printer driver settings, with factory defaults in bold type. Detailed descriptions of each setting follow the table.

Box title	Setting	Options
Color/Halftone Setting	Inks	**Color (CMYK)** Monochrome
	Method	No halftoning Dithering A Dithering B Error Diffusion **Automatic** ColorSync Video/Digital Camera
	Light/Dark slider	Light – **Medium** – Dark
Print	Printing Mode	Super -720 dpi **Best -360 dpi** Economy (180 dpi)
	Media Type	**Plain Paper** Transparency Coated Paper - 360 dpi Coated Paper - 720 dpi HQ Glossy Paper
	MicroWeave Mode	On, Off
	High Speed Mode	**On**, Off
	Finest Detail	On, **Off**
Visual Effects	Flip Horizontal	On, **Off**
	Flip Vertical	On, **Off**
	Invert Image	On, **Off**
	Screen pattern	On, **Off**

Color/Halftone Setting

The following settings control the ink the printer uses and the halftone method.

Inks

This setting specifies color (CMYK) or monochrome printing. CMYK refers to the printer's colored inks: cyan (blue-green), magenta, yellow, and black (K). These colors are combined to create any of 16 million colors. When you select Monochrome, the printer prints only black ink. If you are printing a color image and Monochrome is selected, the printer converts color data to grayscale values. When you want to print in color, select Color (CMYK).

Note:
If you select color printing and print a black and white image, the printer uses the CMYK colors to create black. For true black, select Monochrome. *This produces black and white images with higher detail.*

Method

This setting lets you select one of seven options: Automatic, No halftoning, Error Diffusion, Dithering A, Dithering B, ColorSync, and Video/Digital Camera (Error Diffusion).

To take advantage of EPSON's intelligent color correction feature, select Automatic so your printer driver can analyze the data for each page of your document and automatically adjust the settings. If you prefer to set the halftone method manually, follow these guidelines:

- Use No Halftoning to speed printing for text or monochrome line art. Do not use it when printing in color.
- Dithering A and Dithering B arrange dots in orderly patterns. Printing dithered images is relatively fast and is best suited for printing charts, graphs, and other images that require precise, solid areas of bright colors. Use Dithering A for images with limited detail and shading. Select Dithering B for images with significant detail but limited shading.

- Error Diffusion is best for photographic images. It creates colors by randomly distributing dots, making edges and colors softer. Printing these images takes longer, but it produces the best print quality for photographs.

- ColorSync automatically adjusts the color range to better match printing results with the colors displayed on your monitor. Select ColorSync when printing scanned photographs or computer graphics. You must have ColorSync 2.0 installed on your computer and it must be enabled. Additionally, the application you are using must support ColorSync 2.0.

  The ColorSync 2.0 feature is available only with the settings shown below.

Media Type	Printing Mode
Coated Paper - 360 dpi	Best - 360 dpi
Coated Paper - 720 dpi	Super - 720 dpi
HQ Glossy Paper	Super - 720 dpi

  If your software lets you create your own color profile, you can use it instead of the one of the three driver profiles. The driver profiles are in the System Preferences ColorSync Profiles folder. They are named as follows: StylusCOLOR500 720C_ED_720 (for 720 dpi coated paper with Error Diffusion); StylusCOLOR500 360C_ED_360 (for 360 dpi coated paper with Error Diffusion); and StylusCOLOR500 HQG_ED_720 (for high-quality glossy paper with Error Diffusion).

  To use one of your own profiles instead, you need to save it with one of the driver profile names above. However, since you do not want to permanently replace the driver profile, first rename it with another name or move it to another folder so you can restore it later. Then save your profile with the appropriate driver profile filename.

- Select Video/Digital Camera (Error Diffusion) when printing images you took with a video or digital camera. This feature increases the brightness and sharpness to make printed images clearer.

Light/Dark slider

The slider has five settings that allow you to apply more or less ink on the paper; the more ink, the darker the colors. Move the slider to the right for more ink and darker colors; slide it to the left for less ink and lighter colors. Note that increasing the amount of ink means it will take longer for the ink to dry. The slider is not accessible for monochrome printing, ColorSync printing, or when No Halftoning is selected.

Print Settings

The Print settings let you control print quality.

Printing Mode

With Printing Mode, you can select a resolution of 720 dpi, 360 dpi, or Economy (180 dpi). Resolution is the amount of detail used to create an image. The higher the resolution, the sharper and finer the image.

For the best possible resolution, choose Super -720 dpi. When you select this printing mode, MicroWeave is automatically turned on and High Speed mode is turned off. For best results at 720 dpi, load EPSON special coated paper for 720 dpi or high-quality glossy paper.

For most color printing, select Best -360 dpi. This printing mode produces good-quality, full-color images using less memory and in less time than 720 dpi. For best results at 360 dpi, use EPSON special coated paper for 360 dpi.

When speed is important and draft quality is good enough, use Economy (180 dpi).

Note:
Printing at lower resolutions conserves ink.

Media Type

Selecting the media type sets up the printer for the type of paper you loaded. Depending on your Printing Mode setting, Media Type can be one of the following:

Plain Paper
Transparency
Coated Paper - 360 dpi
Coated Paper - 720 dpi
HQ Glossy Paper

The available media type is determined by the printing mode you select, as shown in the following table. Be sure to select the printing mode before you select the media type.

Printing Mode	**Media Type**
Super - 720 dpi	Plain Paper Coated Paper - 720 dpi HQ Glossy Paper
Best - 360 dpi	Plain Paper Coated Paper - 360 dpi Coated Paper - 720 dpi (color printing only) Transparency
Economy	Plain Paper

For specific information on when to use each media type, see Chapter 4.

MicroWeave Mode

MicroWeave reduces the possibility of banding, the light horizontal lines that can mar an image. When you turn on MicroWeave, the printer produces superior output because graphics data is reordered and printed in fine increments. It slows the print speed but is recommended for printing color and grayscale images. Because it does not improve the print quality for text and line art, turn it off to print these kinds of images faster.

Note:
MicroWeave is switched on automatically whenever the Super - 720 dpi *printing mode is selected and is switched off automatically for* Economy *printing.*

High Speed Mode

When you turn on High Speed mode, the printer uses bidirectional printing, reducing the time it takes to print an image. Bidirectional printing is fast, but for the best quality, turn off High Speed mode.

Note:
If the vertical lines appear misaligned when you print using High Speed mode, calibrate the printer as described in Chapter 6.

Finest Detail

When you select the Super - 720 dpi printing mode, you can turn on Finest Detail mode to print text, solid graphics, and line art with very sharp edges. It may take considerably longer to print using this mode and it will increase your Macintosh memory requirements. Additionally, you may not be able to print some larger images and some patterns may not print correctly. Before you select Finest Detail, make sure that Super - 720 dpi is the selected printing mode. If you experience problems printing in this mode, turn it off or add more memory.

Visual Effects Settings

The following settings allow you to manipulate the printed image to achieve special effects.

Flip Horizontal and Flip Vertical rotate the image 180° along the horizontal or vertical axis. Text then appears backwards or upside down.

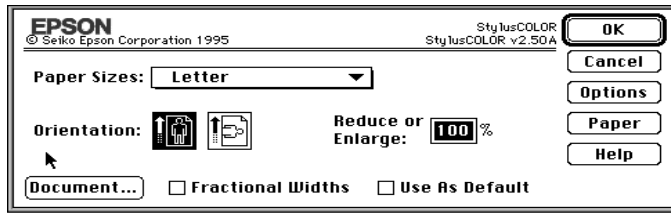
Invert Image changes black areas to white and white areas to black. This option is available only when you select Monochrome ink and No Halftoning.

Screen pattern determines how shaded patterns are printed. When Screen pattern is on, the printer prints shaded areas as they appear on your computer screen. If you turn it off (the default setting), shaded patterns are converted to halftones. Normally you should turn off Screen pattern when printing.

Selecting Paper Size and Orientation Using Page Setup

By default, the printer expects letter-size (8.5 × 11 inches) paper. To select a different paper size, choose Page Setup in the File menu of your application program.

You see a dialog box similar to the following:

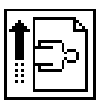


You can select one of the following predefined paper sizes:

Letter (8½ × 11 inches)	Legal (Centered)
Letter (Centered)	Statement (5½ × 8½ inches)
A4 (210 × 297 mm)	Executive (7½ × 10 inches)
A4 (Centered)	Envelope #10 (4⅛ × 9½ inches)
Legal (8½ × 14 inches)	Envelope DL (110 × 220 mm)

Use one of the centered paper sizes only if you have problems centering the image on the page using your software application. Centered images have a slightly smaller printable area.

Select the orientation of the image on the page by clicking one of the following buttons:

 Portrait  Landscape

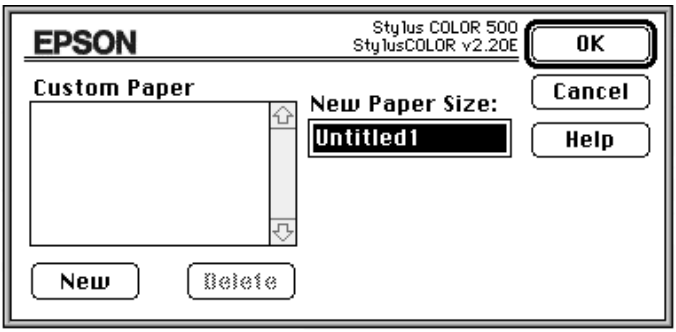
In portrait orientation, the top of the page is parallel with the short edge of the paper. In landscape orientation, the top of the page is parallel with the long edge of the paper.

Note:
Print speed varies depending on the orientation setting in the driver. It is best to select the image orientation using your application, not the driver.

To reduce or enlarge the image, click the Reduce or Enlarge box and enter a percentage.

Defining custom paper sizes

To define a custom paper size, click the Paper button in the Page Setup dialog box. You see the following dialog box:



Click New to create a new paper size. Enter a new name for the paper size in the New Paper Size box. Then enter the correct values in the Width and Height boxes. Click Inches or cm (centimeters) to change the measurement units, if necessary. Click OK to save the new paper size and return to the Page Setup dialog box.

Chapter 4

Paper Handling

4

Read this chapter for information about choosing the best paper or other media for your printing needs and for instructions on loading them in your printer.

Choosing Paper and Other Media

You can use most plain paper with your printer and achieve good results. Coated and glossy papers give you better results because they reduce the amount of ink that is absorbed. However, if the coated or glossy paper does not absorb enough ink, the ink can smear.

To ensure the best results, EPSON provides special papers and transparencies that are formulated for the inks used in EPSON ink jet printers. These papers include the following:

- **EPSON special coated paper for 360 dpi**. Use this paper for best results when printing at 360 dpi.
- **EPSON special coated paper for 720 dpi**. Use this paper for best results when printing at 720 dpi.
- **EPSON high-quality glossy paper**. Use this paper with 720 dpi to produce camera-ready composites. When printing on glossy paper, use only EPSON high-quality glossy paper. For best results, use glossy paper within six months of opening the package.
- **EPSON transparency film**. When printing transparencies, use only EPSON transparencies. For best results, use transparencies within six months of opening the package. Do not use 720 dpi when printing transparencies.

To order EPSON papers and transparencies, contact your dealer or call EPSON Accessories at **(800) 873-7766** (U.S. only). In Canada, call (800) BUY-EPSON for sales locations. Use the following part numbers when ordering.

Paper or other media	Size	Part number
Special coated paper for 720 dpi	Letter (8.5 × 11 inches) Legal (8.5 × 14 inches)	S041062 S041048
Special coated paper for 360 dpi	Letter (8.5 × 11 inches)	S041060
High-quality glossy paper	Letter (8.5 ×11 inches)	S041072
Transparency film	Letter (8.5 ×11 inches)	S041064

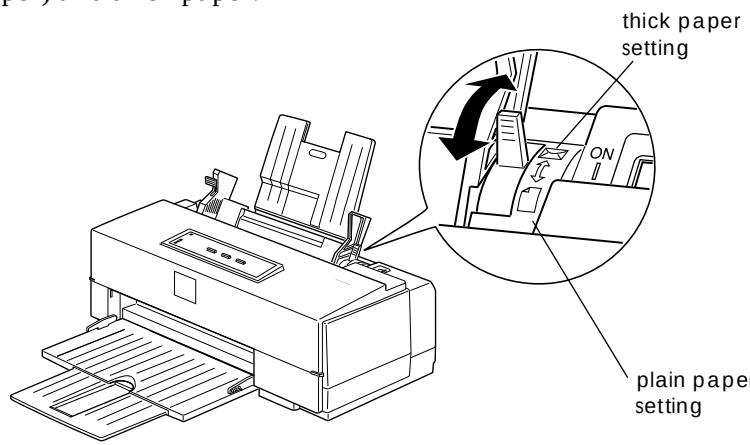
Setting the Paper Thickness and Adjustment Levers

Before you start printing, you should check the paper thickness and adjustment levers to make sure they are set correctly for the type of paper or other media you are loading.

C ***Caution:***
Before you change the lever settings, make sure the printer is not loading paper, printing, or ejecting paper.

Setting the Paper Thickness Lever

The paper thickness lever on the right side of the sheet feeder has two settings: plain paper (including coated and glossy paper) and thick paper.

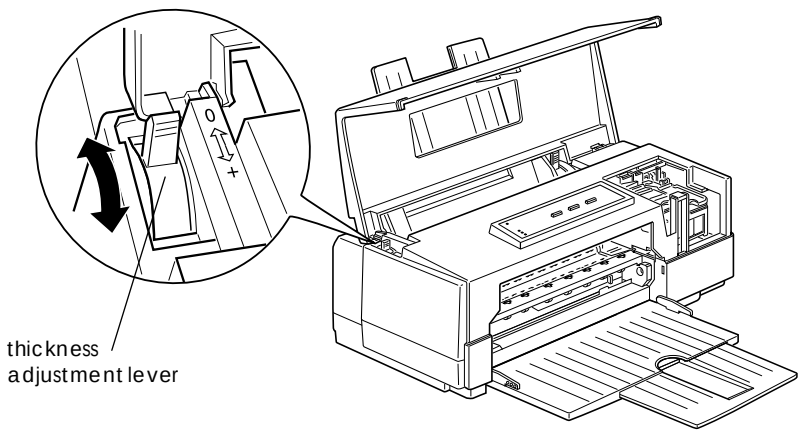


Set the lever to the position that best suits the paper or other media you plan to use, as shown in the following table.

Paper type	Paper thickness lever position
Standard (plain, coated, or glossy) paper	Plain paper
Transparency film	Plain paper
Envelopes or labels	Thick paper

Setting the Thickness Adjustment Lever

You need to change the position of the thickness adjustment lever when you print on thick paper (such as envelopes or labels) or if your documents smear. To access the lever, open the printer cover; the lever is in the left back corner.



If a document is smeared, set the thickness adjustment lever to the + position (regardless of the paper type) and print it again.

Set the thickness adjustment lever to the position that best suits the paper or other media you plan to use, as shown in the following table.

Paper type	Thickness adjustment lever position
Standard paper (plain, coated, or glossy)	0
Transparencies	0
Envelopes or labels	+
Previously smeared documents	+

Loading Special Papers and Other Media

This section describes how to load coated paper, glossy paper, transparencies, and envelopes. (For instructions on loading plain paper, see Chapter 1.) When using special coated paper, glossy paper, transparencies, or envelopes, keep the following in mind:

- ❑ Make sure the printable side of the paper is face up.
- ❑ Do not touch the printable surface of the paper; hold the sheets by their edges. The moisture and oils on your hands can reduce print quality.
- ❑ Use special coated paper within one year of purchase. Use high-quality glossy paper and transparencies within six months.
- ❑ Make sure the paper thickness and adjustment levers are in the correct position for the paper you are using. See page 4-3.

- ❑ After printing on high-quality glossy paper or transparencies, remove each sheet from the output tray immediately. Make sure each sheet is dry before stacking.

- ❑ You can print on sheets of labels in your printer; just follow the instructions for loading plain paper in Chapter 1.

- ❑ Return unused sheets and envelopes to their original package as soon as possible after you finish printing. Unfavorable storage conditions—especially high temperature, humidity, and direct sunlight—can damage the media.

- ❑ Follow any other special loading procedures identified in the following sections.

Loading Special Papers and Transparencies

The following procedure explains how to load coated papers, glossy paper, and transparencies. You can load up to the following number of sheets in the sheet feeder:

- ❑ 70 sheets of special coated paper

  Note:
  If you load legal-size special coated paper for 720 dpi, do not load it more than halfway to the arrow on the left edge guide of the sheet feeder.

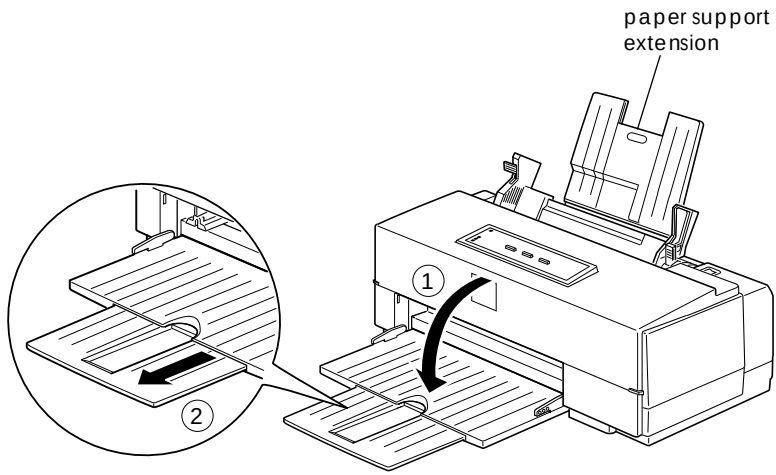
- ❑ 50 sheets of transparency film with one sheet of plain paper beneath the last transparency in the stack

- ❑ 30 sheets of high-quality glossy paper with a sheet of plain paper beneath the last sheet in the stack; to avoid printing on the plain paper, print your document one page at a time. If you load a single sheet of glossy paper, place a sheet of plain paper beneath it and print one page at a time.

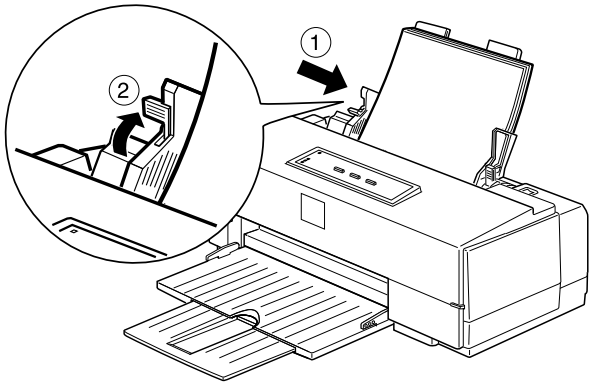
Note:
If you load multiple sheets of glossy paper, the minimum top margin is 1.2 inches (30 mm). To print with a smaller top margin, load and print glossy paper one sheet at a time.

Follow these steps to load special paper or transparency film:

1. Lower the output tray at the front of the printer and slide out the extension. If you are going to load long paper (legal size, for example), pull up the paper support extension.

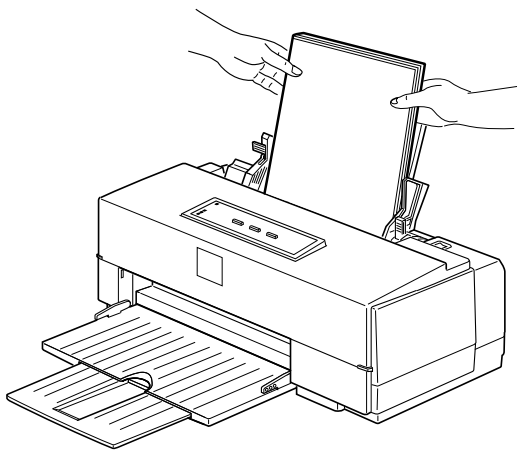


2. Insert the stack of paper into the printer and adjust the left edge guide to the paper's width while the lock lever is in the down position; then set the lock lever up to secure the left edge guide.

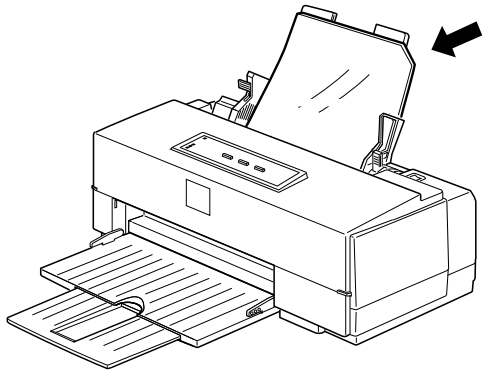


3. Remove the stack of paper and fan it. Then tap it on a flat surface to even the edges.

4. Reinsert the stack of paper gently straight up and down, and then rest it against the paper support. This ensures that the paper is properly loaded in the paper path.



Make sure the printable surface faces up. For coated papers, the printable side is whiter than the other side. For glossy paper and transparencies, the printable side is face up when the cut corner is positioned as shown in the illustration below.



5. Change the Media Type and other printer driver settings so they are appropriate for the paper or transparency film you loaded. (For instructions, see Chapter 2 for Windows or Chapter 3 for Macintosh.)

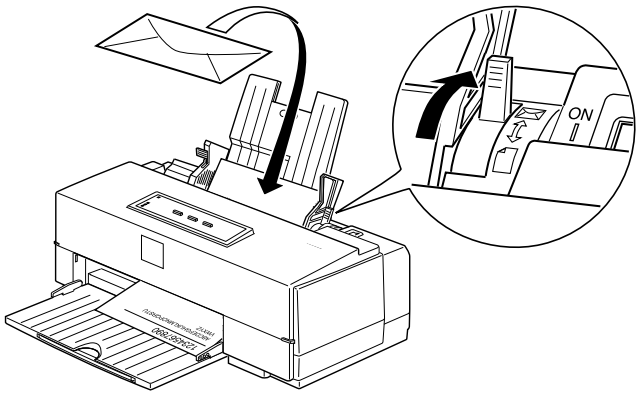
Loading Envelopes

For detailed specifications on the thickness and weight of the envelopes you can load, see Appendix A. Do not use envelopes that are curled or folded, or ones that are too thin; they may curl during printing. Also, do not choose 720 dpi resolution for envelope printing.

Follow these steps to load envelopes:

1. Make sure you set the paper thickness and thickness adjustment levers to the correct positions for envelope printing, as described on page 4-3.

2. You can load up to 10 envelopes in the sheet feeder with the front (printable) side facing up as shown.



3. Adjust the left edge guide so the envelopes feed straight into the paper path.

4. Change the Media Type and other printer driver settings so they are appropriate for the envelopes you loaded. (See Chapter 2 for Windows or Chapter 3 for Macintosh.)

Chapter 5

Controlling the Printer

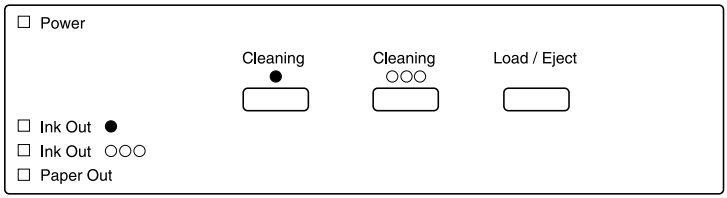
5

This chapter explains how to do the following:

- ❑ Control the printer using the control panel
- ❑ Manage printing in Windows and on the Macintosh
- ❑ Control additional printer functions using the Default setting mode.

Using the Printer's Control Panel

The printer's control panel contains lights for displaying the printer status and buttons for controlling certain functions, as described in this section.



Since most printer settings can be controlled from your software, you do not often need to use the control panel. Use your software to select printing functions whenever possible. (Software settings usually override control panel settings.)

Lights

Power — On when the printer is on. Flashes during ink cartridge installation or replacement and print head cleaning and certain error conditions.

Ink Out 0 — Flashes when the black ink cartridge is low on ink. On when the black ink cartridge is empty or not installed. The printer will not work if the black ink cartridge is empty or not installed.

Ink Out NNN — Flashes when the color ink cartridge is low on ink. On when the color ink cartridge is empty or not installed. The printer will not work if the color ink cartridge is not installed.

If color ink runs out during printing, the printer stops. You can continue to print with the black ink cartridge by switching to monochrome printing. To do this, turn off the printer, turn it on again, and resend your print job.

Paper Out — On when the printer runs out of paper. Flashes rapidly if there is a paper jam.

Buttons

In addition to the button functions explained below, you can perform additional functions using certain button combinations while turning on the printer, as described on page 5-4.

Cleaning 0 — Starts the black print head cleaning cycle. See Chapter 6 for instructions.

Cleaning NNN — Starts the color print head cleaning cycle. See Chapter 6 for instructions.

Load/Eject — Loads or ejects a sheet of paper. The printer normally loads and ejects paper automatically.

Power-on functions

The button combinations below perform additional functions to control your printer. Paper must be loaded in the printer for all these operations.

Cleaning NNN + POWER switch

Checks the paper length and performs a printer self test. See "Testing the Printer" in Chapter 1 for more information.

Cleaning 0 + Cleaning NNN + POWER switch

When connected to a PC, prints a page containing a hexadecimal representation (hex dump) of the data sent to the printer for troubleshooting use; see Chapter 7. Continue holding down Cleaning 0 and Cleaning NNN for a few seconds after turning on the printer. Then send a print job. To exit hex dump mode, press Load/Eject to clear the paper path. Then turn off the printer.

Cleaning 0 + POWER switch

Prints a demonstration page of the printer's fonts and colors. Continue holding down the Cleaning 0 button for a few seconds after turning on the printer. To exit demonstration mode, wait until the printer is done printing, and then turn it off.

Load/Eject + POWER switch

Enters the printer's Default setting mode and prints an instruction page. Continue holding down the Load/Eject button for a few seconds after turning on the printer. To exit Default setting mode, turn off the printer. See page 5-12 for more information.

Cleaning 0 + Load/Eject + POWER switch

Enters printer adjustment mode and prints a multilingual instruction sheet on calibrating the printer. (Use this mode only if you are printing from DOS applications.

Managing Print Jobs in Windows

When you print a document from a Windows application, the computer uses the EPSON Spool Manager to send data to the printer. This allows you to continue working in your software application while printing.

When you send a print job to the printer, the Spool Manager assigns the document to the apropriate print queue and then uses the EPSON despooler to send it to the printer. The despooler status box appears on your screen. In Windows 3.1, an icon for the EPSON Spool Manager 3 appears in the lower left corner; in Windows 95, a button for EPSON Spool Manager appears in the task bar. The Spool Manager 3 icon is also included in the EPSON group so you can manage print queues or perform other operations when you are not sending a print job.

Note:
In Windows 3.1, you may not see the EPSON Spool Manager icon in the bottom portion of your screen if the Windows Program Manager window or an application window is maximized. Reduce the window size to reveal the icon.

The Despooler status box, which is similar to the one shown below, allows you to monitor the progress of the print job and Stop ■, Pause ❚❚, or Reprint ◀◀ the print job. The Stop button cancels the print job; Pause holds the print job until you press the button again; and Reprint lets you restart printing from the current page, reprint the whole document, or hold the document for printing later.

Note:
If you do not want the Despooler status box to appear each time you print, you can turn it off using Spool Manager. Open the Spool Manager, open the View menu, and select Show Despool Popup *to turn it off; the check mark next to the option disappears.*

Other options in the EPSON Spool Manager allow you to hold and cancel print jobs, choose what information to display in the Spool Manager window, and manage print queues and print jobs on a network. Click Help for more information.

Note:
If you get an error message while trying to print, the problem may be caused by conflicts with other temporary files or directories. See Chapter 7 for more information.

Using the Status Monitor in Windows 95

If you are using Windows 95, the Status Monitor box appears inside the Despooler Status box (as shown below) each time you send a print job. It includes a gauge representing the amount of ink left in the cartridge and an icon that reports the current status of your printer. The icon alerts you to any printer error conditions.

The Status Monitor reports the operating condition of your printer by changing the appearance of the printer icon in the lower right corner, as shown below.

Checking the printer status

An error has occurred. Your printer cannot print. Check your printer.

The printer is ready.

The printer is printing.

The ink level is low or out.

The level of ink in your ink cartridges is displayed graphically as a sliding scale next to the printer icon.

Managing Print Jobs on the Macintosh

If you have a Macintosh, you can use the Epson Monitor utility to check the status of print jobs that are queued for printing. The utility also allows you to cancel any print job in the queue.

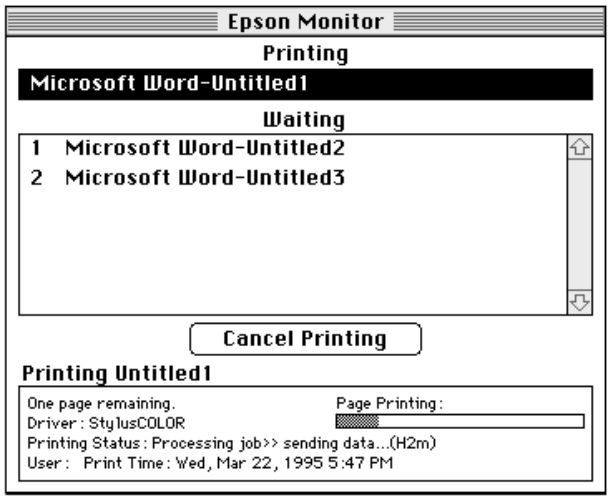
Follow these steps:

1. Before using Epson Monitor, select background printing using the Chooser (if you have not done so already). See “Using the Chooser to Select the Printer” in Chapter 3 for instructions.

2. Start a print job.

3. Click the icon in the upper right corner of the display and pull down the menu that appears. (The shape of the icon depends on the software you are using.)

4. Select Epson Monitor2 from the menu. You see a dialog box similar to the following:



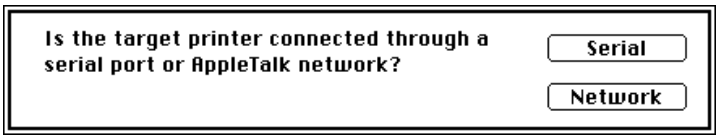
The print job listed under Printing is currently being printed. Jobs listed under Waiting are queued to begin when the current job is completed. To cancel a print job, click the name of the job and then click Cancel Printing.

Using the StatusMonitor Utility

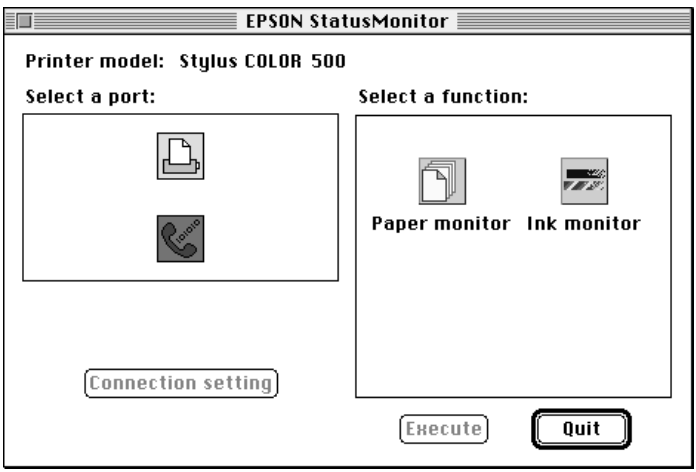
The StatusMonitor utility monitors the printer's operating status. If it detects a printer error, it displays an error message. You can also use this utility to check how much ink is remaining in the ink cartridges before or during printing.

Follow these steps.

1. Double-click the EPSON StatusMonitor icon on your hard disk. You see the following dialog box.



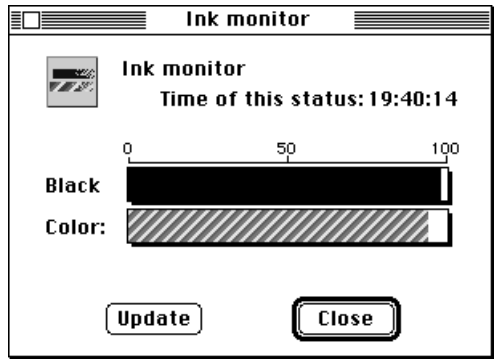
2. Click Serial and then specify whether your printer is connected to the printer port or modem port of your Macintosh.



If a printer error occurs while the StatusMonitor window is active, an error message appears. If an error occurs when the StatusMonitor window is inactive, an alert tone sounds and the StatusMonitor icon flashes at the top of the Applications menu. Pull down the Applications menu and select EPSON StatusMonitor to view the error message.

Note:
The StatusMonitor checks the printer status once every three minutes as a default. However, you can specify the time in the Interval menu. To change the interval, click Interval*; then choose your time.*

If you want to check the remaining amount of black or color ink, select the Ink monitor icon; then click Execute. The following window appears. When you are finished, click the Close button.



Note:

- ❑ *While the printer is receiving data, a busy message may appear on the screen. Click* OK*. After the printer finishes receiving data, click* Execute *to start the Ink monitor.*

- ❑ *The Paper monitor is not available with this printer.*

To close the StatusMonitor, click the Quit button in the EPSON StatusMonitor window.

Using the Default Setting Mode

Additional printer functions are available through the Default setting mode. Because the printer's factory defaults are designed to meet the needs of almost all users, you rarely need to change the printer functions listed below. If necessary, however, you can turn on the Default setting mode and change the settings using the control panel buttons.

The table below lists the settings and available options, with default settings in bold type. Detailed descriptions follow the table.

Setting	Options
Print direction	**Auto**, Bi-D, Uni-D
Font	**Courie**r, Roman, Sans Serif, Prestige, Script, Roman T, Sans Serif H
Pitch	**10 cpi**, 12 cpi, 15 cpi, 17.1 cpi, 20 cpi, Proportional
Interface mode	**Auto**, Parallel, Serial
Auto interface wait time	**10 seconds**, 30 seconds
Software	**ESC/P 2**, IBM X24E
Auto CR (IBM mode only)	**Off**, On
AGM (IBM mode only)	**Off**, On
Character table	**PC437**, PC850, PC860, PC861, PC863, PC865, Abicomp, BRASCII, Italic U.S.A., Italic France, Italic Germany, Italic U.K., Italic Denmark, Italic Sweden, Italic Italy, Italic Spain I
Auto line feed	**Off**, On
Network interface mode	**Off**, On
Loading position	**3 mm**, 8.5 mm
Thick paper	**Envelope**, Index card (portrait)
Economy	**Off**, On

- **Print direction**. Specifies how the print head moves across the page. The options are Uni-D, Bi-D, and Auto (default). When Uni-D is on, the print head prints in only one direction to provide the most precise alignment for graphics and text. In Bi-D printing, the print head prints in both directions. Bi-D is faster but the vertical alignment may not be as precise as Uni-D. When Auto is selected, the printer switches automatically between bidirectional (for text data) and unidirectional (for graphics data).

- **Font and Pitch**. Select the built-in printer font and character pitch used as the default. Normally you use your software to select the font and pitch. The default Font and Pitch is Courier 10 cpi (characters per inch).

- **Interface mode**. Selects the active interface. The default setting, Auto, allows the printer to automatically switch as needed between the parallel and serial interfaces. However, if you experience communication problems, you might want to set the interface mode to either Parallel or Serial.

- **Auto interface wait time**. Sets the time period for the printer to wait for data from the current interface (and accept no data from the other interface) when you're using the Auto interface mode. You can select a 10-second (default) or 30-second wait time.

- **Software**. Specifies the printer control language to use: EPSON ESC/P 2 (default) or IBM X24E. If your software allows you to select EPSON ESC/P 2, choose it for the most advanced fonts and graphics.

- **Auto CR**. Specifies that the printer perform a carriage return and line feed operation if the print positions exceed the right margin of the paper. (Used in IBM X24E mode only.)

- **AGM (Alternate Graphics Mode)**. Specifies that the printer use high-resolution, 24-pin graphics commands. (Used in IBM X24E mode only.)

- **Character table**. Selects the set of characters and symbols that can be printed. The default is the Italic U.S.A. character table. If you commonly use a language containing accents, symbols, or other characters not available in the Italic U.S.A. character table, change to a different character table. For a list of the character tables, see Appendix B.

- **Auto line feed**. Specifies that a carriage return character encountered in the print file be accompanied by a line feed command. By default, auto line feed is off. If text lines print on top of one another, turn on auto line feed.

- **Network interface mode**. If your printer is connected to a single computer, leave this setting off (the default). If you're having trouble printing when the printer is connected to multiple computers, turn on Network interface mode.

- **Loading position**. Determines the top margin by defining how close to the paper edge the first line can print. The loading position can be 3 mm (default) or 8.5 mm. Normally you should use your software to adjust the top margin of your paper.

- **Thick paper**. Select Index card (portrait) or Envelope (default) if you print on these media.

- **Economy**. When Economy mode is on, the printer uses less ink by printing fewer dots per character. Use this mode for rough drafts only. (The default setting is off.)

Changing the Default Settings

To change the printer's default settings, you use the control panel buttons; the control panel lights show your selections.

1. Make sure the printer is turned off and paper is loaded.

2. Hold down the Load/Eject button and turn on the printer, continuing to hold down the button until the printer starts printing an instruction sheet.

3. Use the instructions to change the settings from the control panel.

4. After making your changes, wait until the printer stops printing, and then turn off the printer to exit the Default setting mode.

Note:

- ❑ *You can exit the Default setting mode any time by turning off the printer. Any changes you have made remain in effect until you change them again.*

- ❑ *If you want to check the current default settings, enter the Default setting mode again and print the current settings.*

Chapter 6

Maintenance

Instructions in this chapter tell you how to do the following to maintain and care for your printer:

- ❑ Clean the print heads
- ❑ Replace the ink cartridges
- ❑ Clean the printer
- ❑ Calibrate the printer
- ❑ Transport the printer.

Cleaning the Print Heads

The printer periodically cleans its print heads automatically, so normally you should not need to manually activate a cleaning cycle. However, if print quality diminishes, you can run a cleaning cycle to unclog the print head nozzles so they deliver ink properly. To avoid wasting ink, do not run a cleaning cycle unless necessary.

You can clean one or both print heads, on at a time. (You cannot clean them both simultaneously.) Each cleaning cycle takes about one minute, during which the carriage moves and you hear the printer recharging the print heads. The Power light flashes throughout the cleaning cycle and then stays on when the cycle is finished.

To clean the color print head, make sure the printer is turned on but is not printing. Press the Cleaning NNN button. The cleaning cycle begins. When the cleaning cycle is over the Power light stops flashing.

To clean the black print head, press the Cleaning 0 button. The cleaning cycle is over when the Power light stops flashing.

After you clean the print heads, turn off the printer; then hold down the Cleaning 0 button as you turn the printer back on. (Continue holding it down for a few seconds after turning on the printer.) This prints a demonstration page so you can see if your print quality has improved. If the print quality is not improved, repeat the cleaning cycle. (Be sure to always print at least a few lines between cleaning cycles to reset the printer's cleaning mechanism.)

If the print quality does not improve after you clean the print heads three times (printing a demonstration page to check after each cleaning), and you are sure the cartridges are not low on or out of ink (as described in the next section), contact your dealer or authorized EPSON servicer.

Replacing Ink Cartridges

The printer's Ink Out 0 (black) and Ink Out NNN (color) lights tell you when your ink cartridges are low on ink and when you need to replace them. If one of these lights flashes, the indicated cartridge is low on ink; if it remains on, you need to replace the cartridge.

Do not replace an ink cartridge unless its Ink Out light tells you to. If you replace a cartridge before its light flashes, the ink sensor will not work with the new cartridge.

C ***Caution:***

- *Leave the old cartridge installed in the printer until you are ready to replace it with a new one. Attempting to print without a cartridge installed can damage the printer.*
- *If you need to replace a cartridge in the middle of a print job, you must turn off your printer and then turn it back on. This erases the data received by the printer and you must resend your print job.*

- ❑ *Once you install the ink cartridges, do not open the clamps or remove the cartridges except to replace them with new ones. Once you remove a cartridge, you cannot reuse it.*

When the color ink cartridge is empty, you can continue printing with the black ink cartridge by switching to monochrome mode. To do this, turn the printer off, then back on. Then resend your data.

Note:
Even though you use the printer in the monochrome printing mode, the empty color ink cartridge must be installed.

To switch back to color printing, you must install the color ink cartridge as described in this chapter, and then turn your printer off and back on again. Any data sent to the printer will be lost, and you will have to resend it.

If the black ink cartridge is empty, you cannot continue printing, even if the color cartridge still contains ink.

Selecting the Correct Ink Cartridges

Use only these EPSON ink cartridges:

Black ink cartridge	S020093
Color ink cartridge	S020097

When you need new ink cartridges, contact your dealer or call EPSON Accessories at **(800) 873-7766** (U.S. only). In Canada, call **(800) BUY-EPSON** for sales locations.

C ***Caution:***
Use only genuine EPSON ink cartridges and do not refill them. Other products may cause damage not covered by EPSON's warranty.

Removing and Installing Ink Cartridges

Follow these steps to replace either or both ink cartridges:

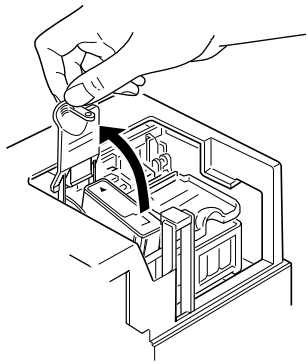
1. Make sure the printer is on and not printing, and that one of the Ink Out lights is flashing or turned on.

2. Lower the output tray on the front of the printer (if necessary) and then lift up the printer's cover.

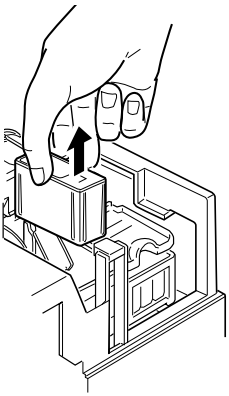
3. Hold down the Load/Eject button for about five seconds until the print head moves slightly left to the ink cartridge install position. The Power light begins flashing.

   C ***Caution:***
   Do not move the print head with your hand. Always use the Load/Eject *button to move it.*

4. Pull up the cartridge clamp to open it. The cartridge rises partially out of the printer. (If you do not do this within 30 seconds after pressing Load/Eject, the carriage returns to its home position, far right. If this happens, press Load/Eject again.)

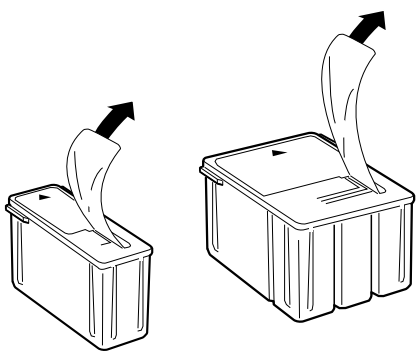


5. Lift the cartridge out of the printer and dispose of it carefully so any excess ink does not spill out. Do not take the used cartridge apart or try to refill it.



W ***Warning:***
If ink gets on your hands, wash them thoroughly with soap and water. If ink gets into your eyes, flush them immediately with water.

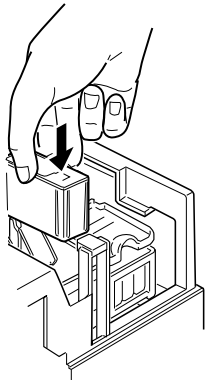
6. Open the package containing the ink cartridge and remove the cartridge from its protective bag. Remove the yellow tape seal from the top of the cartridge.



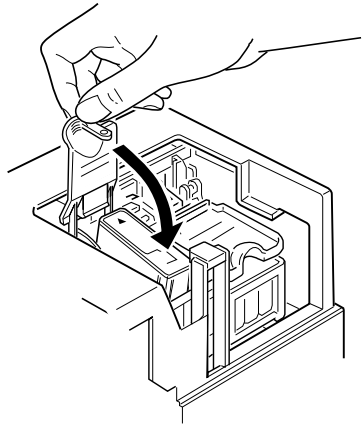
C

Caution:
You must remove the tape seal from the top of the cartridge; leaving the tape on will permanently damage it. Do not remove the tape seal from the bottom of the cartridge; ink will leak out.

7. Lower the ink cartridge into its holder with the label facing up and the arrow pointing to the back of the printer.



8. Push down the ink cartridge clamp until it locks in place.



C ***Caution:***
Once you install an ink cartridge, do not open the ink cartridge clamp again or remove the cartridge except to replace it with a new one. Once you remove a cartridge, do not reuse it; this may damage the print head.

9. Press the Load/Eject button again. The printer moves the print head to its home (far right) position and the Power light flashes as the printer charges the ink delivery system.

C ***Caution:***
The Power *light continues to flash while the printer performs the ink charging operation. Never turn off the printer while the* Power *light is flashing, as this can result in incomplete charging of printer ink.*

Note:
Even if you do not press the Load/Eject *button, the printer moves the print head back to its home position about 30 seconds after you replace the cartridge.*

10. When the charging cycle is finished (the Power light stops flashing), close the printer cover. Now the printer is ready for your next print job.

Cleaning the Printer

If you want to clean the printer, follow these steps:

1. Turn off the printer and disconnect any cables connected to it. Be sure to keep the printer cover closed as you clean it.

2. Remove any paper or other media from the sheet feeder.

3. Carefully clean away loose dust and dirt with a soft brush.

4. Clean the exterior of the printer with a soft cloth dampened in mild detergent. Keep the printer cover closed to prevent water from getting inside.

5. To clean ink out of the printer's interior, wipe it gently with a damp cloth.

C ***Caution:***

- ❑ *Never use alcohol or thinner to clean the printer; these chemicals can damage the components and the printer case.*
- ❑ *Do not use a hard or abrasive brush; these can scratch the printer surfaces.*
- ❑ *Do not allow water to get on the printer mechanism or any electronic components.*
- ❑ *Do not spray inside the printer with lubricants or oils; they can damage the printer mechanisms.*

Calibrating the Printer

Your printer has been calibrated at the factory so that vertical lines in your text and graphics are properly aligned. If you notice misaligned images in printouts, however, you can calibrate the printer as described in the following sections. You may need to do this after moving the printer to a new location, for example.

Before calibrating, verify that your printer needs it by printing a demonstration page. Turn off your printer; then hold down the Cleaning 0 button as you turn the printer back on. Continue holding down the Cleaning 0 button for a few seconds after turning on the printer. Examine the demonstration printout; if vertical lines are truly misaligned, calibrate your printer. Do not calibrate your printer too often.

Calibrating the Printer Using Windows

If you are using Windows on your PC, follow the steps below to calibrate the printer. If you installed the Windows printer driver, the Calibration utility is installed on your hard disk.

1. If you are using Windows 3.1, select the EPSON Printer Calibration icon in the EPSON program group to start the utility.

   If you are using Windows 95, first make sure the Spool Manager despooler is closed (not just minimized). Then click Start. Point to Programs, Epson, and then click EPSON Printer Calibration to start the utility.

2. When you see the Printer Calibration Utility screen, select OK.

3. Make sure your printer is selected in the drop-down menu. Under Calibration Item, click the radio button for the print head you want to calibrate. The default is Black.

4. Click Next. Make sure the selected printer port is correct. If you are not sure which port the printer is connected to, check your print manager utility. Then click Next.

   C ***Caution:***
   Make sure that the printer name you selected and the actual printer to be calibrated are the same, and confirm that this printer is connected to the port you selected. Otherwise, the printer will be damaged.

5. Make sure the printer is on and paper is loaded. Then click Next to print the Current Alignment Sheet.

6. Click the misaligned pattern. (If more than one pattern is misaligned, click a misaligned pattern now. After you finish the steps in this section, repeat steps 1 through 9 to select and calibrate each remaining misaligned pattern.)

7. Click Next twice to print the misaligned pattern's Test Alignment Sheet. This printout contains numbered line groups with varying alignment.

8. Highlight the number of the line group with the best appearance and click Next to calibrate the printer. Click Next to go to the next screen.

9. To check the calibration results, click Print Current Alignment Sheet and click Finish.

Calibrating the Printer Using DOS

If you need to calibrate the printer from DOS on your PC, follow the steps below. This utility is designed to be run in DOS with or without a mouse; these steps are witten for use without a mouse.

1. If you did not install the Windows printer software on your hard disk, insert the Windows Setup Disk 1 in a diskette drive.

2. Type A:\SETUP (or B:\SETUP) at the DOS prompt and press Enter.

3. Follow the directions on the screen to install the software, removing Disk 1 and inserting Disk 2 when prompted.

4. After running the Setup program, change to the drive and directory that contain the Calibration utility (or set the path to the directory). The default directory is C:\CALIBRAT. Then type ECALIB and press Enter. You see the EPSON Printer Calibration screen.

5. Make sure your printer is selected. If not, follow the instructions on the screen to select the correct printer from the list shown.

6. Follow the instructions on the screen to choose the print head you want to calibrate. Then select Next.

7. Make sure the printer is on and paper is loaded. Then select Next to print the Current Alignment Sheet.

8. Select the misaligned pattern. (If more than one pattern is misaligned, select a misaligned pattern now. After you finish the steps in this section, repeat steps 4 through 11 to select and calibrate each remaining misaligned pattern.)

9. Select Next twice to print the pattern's Test Alignment Sheet. This printout contains numbered line groups with varying alignment.

10. Select the number of the line group with the best appearance and then select Next to calibrate the printer.

11. To check the calibration results and exit the Calibration utility, select Print.

Calibrating the Printer Using a Macintosh

If you have a Macintosh, follow the steps below to calibrate your printer.

Note:
If the Status Monitor utility is running, click Quit *to close it before you start the calibration utility.*

1. Double-click the Bi-D Calibration icon on your hard disk to start the utility.

2. When you see the screen to select a printer type, choose your printer name from the list and click OK.

3. Select the port to which your printer is connected.

C ***Caution:***
Make sure that the printer name you selected and the actual printer to be calibrated are the same, and confirm that this printer is connected to the port you selected. Otherwise, the printer will be damaged.

4. In the next screen, click the Preview button to print the calibration patterns in the Choose pattern pull-down menu. Use this printout to select the pattern(s) that need to be calibrated.

5. Look at the printed patterns, and select the misaligned pattern in the Choose pattern pull-down menu. For example, if the lines shown under Pattern 2 need to be aligned, select Pattern 2; then click Start.

   The printer prints some alignment patterns. Each pattern is associated with an offset value. Look for the alignment pattern that is most closely aligned.

6. After the pages have printed, you see a dialog box requesting the number of the pattern that is most closely aligned. Enter the appropriate number and click OK.

7. Repeat steps 5 and 6 until you are satisfied that all of the patterns are aligned.

8. To close the calibration utility, click Quit.

9. Turn off the printer to save the settings.

Note:
The settings made with the Bi-D Calibration utility are saved only when you turn off the printer.

Calibrating the Printer From the Control Panel

If for some reason you cannot use any of the calibration utility programs that came with your printer, you can calibrate the printer from the control panel. This is called the Printer adjustment mode. Follow these steps:

1. Make sure the printer is turned off and paper is loaded.
2. Hold down the Cleaning 0 and Load/Eject buttons and turn on the printer to enter the Printer adjustment mode.

   The printer prints an instruction sheet in English, French, German, Italian, and Spanish that shows you how to calibrate your printer. Follow these instructions.
3. After calibrating the printer, exit the Printer adjustment mode by turning off the printer.

Transporting the Printer

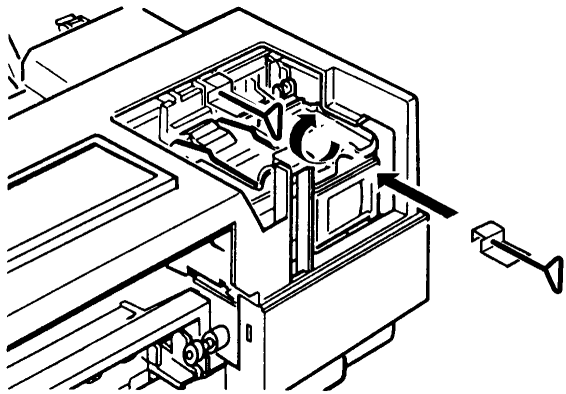
If you need to transport your printer, follow these steps:

1. Make sure the printer is turned off.
2. Open the printer cover and make sure that the print heads are locked in the far right position. If not, turn on the printer, wait about 10 seconds, and turn it off.

   C ***Caution:***
   Do not remove the ink cartridges when transporting the printer. Transporting the printer without the cartridges installed can damage the printer.
3. Unplug the power cord from the electrical outlet.
4. Disconnect the interface cable from the printer.

5. Remove any paper from the sheet feeder and remove the paper support.

6. Install the transportation screw to secure the print head to the carriage as shown below.



7. Push in the output tray extension and close the tray.

8. Attach any other protective materials to the printer. See the Notice Sheet that was packed with the printer.

9. Repack the printer and attachments in the original box.

Be sure to keep the printer flat as you transport it. If you notice problems with your printed output after transporting the printer, clean the print heads as described on page 6-2. If the image is misaligned, calibrate the printer as described in this chapter.

Chapter 7

Troubleshooting

7

This chapter describes what you can do if you are having problems printing. It is divided into these sections:

- **Error Indicators.** This section explains errors indicated by the control panel lights.
- **Print Quality Problems**. See this section if the print quality is not good or not what you expect.
- **Problems With Printing**. See this section if your printer is having trouble printing.
- **Paper Handling Problems**. See this section if you have paper jams or other problems with paper handling.

Check the appropriate section and follow all suggestions that apply to your problem. Be sure to check the ReadMe icon in the Windows EPSON group or the README icon on the Macintosh for the latest information. Also check the driver's online help. If none of the suggested solutions solve your problem, see "Where to Get Help" in the Introduction.

Error Indicators

Certain problems are identified by the control panel lights. When your printer stops operating or the lights are on or flashing unexpectedly, see the following descriptions of panel light patterns and the corrective actions you should take.

The Paper Out *light is on.*

No paper is loaded in the printer. Load paper in the sheet feeder; then press the Load/Eject button to turn off the Paper Out light. The printer resumes printing.

If paper is loaded in the printer, it may not be loaded properly; remove it and reinsert it gently straight up and down.

The Paper Out light *is flashing.*

Paper may have jammed in the printer. Turn off the printer and gently pull all the paper out of the printer. If it tears and pieces remain inside the printer, open the printer cover and remove the pieces of paper. See "Paper Handling Problems" on page 7-13.

The Ink Out (O *or* NNN) *light is flashing.*

When the Ink Out O light is flashing, the black ink cartridge is nearly empty. When the Ink Out NNN light is flashing, the color ink cartridge is nearly empty. Replace the ink cartridge indicated by the flashing light as described in Chapter 6.

Printing stops and the Ink Out (O *or* NNN) *light is on.*

If the Ink Out O light is on, replace the black ink cartridge with a new one (S020093).

If the Ink Out NNN light is on, replace the color ink cartridge with a new one (S020097).

When the color ink cartridge is empty, the printer can continue to work using only black ink. However, you must switch to monochrome printing; turn the printer off and back on; then resend the data.

Printing stops; the Power *light is flashing; and the* Ink Out O, Ink Out NNN, *and* Paper Out lights *are on.*

Turn off the printer. After a few seconds turn it on and try printing again. If the error is not cleared, contact your dealer or authorized EPSON servicer.

Printing stops and all lights are flashing.

Contact your dealer or authorized EPSON servicer.

The Power *light is on but nothing prints.*

The interface cable may not be plugged in securely. Check both ends of the cable between the printer and the computer. Make sure your interface cable meets both the printer's and computer's specifications.

Make sure your software is properly set up for your printer.

The ink cartridge may be too old. It is too old if it has been used longer than six months or beyond the date on its packaging. First try cleaning the print heads as described in Chapter 6. If printing still does not appear, you may need to replace the cartridge. See Chapter 6.

Print Quality Problems

To help you determine the nature of a print quality problem, you may want to print a demonstration page and analyze elements on it. See Chapter 5 for instructions.

Print quality problems can often be solved by cleaning the print heads as described in Chapter 6. (Be sure to print something, such as a demonstration page, between cleaning cycle to reset the printer's cleaning mechanism.) If cleaning the print heads several times does not improve print quality, try the following:

- ❑ Check the status of the Ink Out 0 and Ink Out NNN lights to see whether the ink cartridges are low on ink. If so, replace the cartridges as described in Chapter 6.
- ❑ For color or complex grayscale images, turn on MicroWeave and turn off High Speed mode.
- ❑ Use a higher quality paper. For best print quality, use EPSON special coated papers for 360 and 720 dpi or EPSON high-quality glossy paper (720 dpi only).

Note:
Do not use high-quality glossy paper when you print at 360 dpi.

- ❑ Make sure the Media Type setting matches the type of paper or other media loaded in the printer.

- ❑ If you're printing a scanned image and the colors are not right, first try to fix the problem using your scanning software program.

If print quality does not improve, see the following specific problems.

Printed output is not what you expect or is faint or blurred.

You may not be printing on the correct side of the paper. On coated paper, print only on the white coated side; on glossy paper or transparencies, print only with the cut corner in the upper right of the sheet feeder and remove each sheet as it is printed to prevent smearing by the next sheet.

Check that the paper thickness and thickness adjustment levers are set correctly for the media type. (See Chapter 4 for more information.) Faint or blurred printouts can result if you print with these levers in incorrect positions.

Use a higher quality paper. Also, check that the Media Type setting in the driver is set for the type of paper or other media in the printer. If you are using 720-dpi resolution, you get better results when you use EPSON special coated paper for 720 dpi or EPSON high-quality glossy paper.

Check whether Economy mode has been selected in the Default setting mode. See "Using the Default Setting Mode" in Chapter 5.

Check whether your paper is moist or damp. Ink jet printers are sensitive to moisture absorbed by paper. Do not store paper in damp or humid places.

If you are printing color graphics at 360 or 720 dpi, make sure MicroWeave is on and High Speed mode is off. Also check that the Brightness and Contrast settings (Windows driver) or Light/Dark setting (Macintosh driver) are appropriate for the image.

Try using the printer driver's Auto (Automatic) option to let the driver determine the appropriate image settings.

Your Windows video driver may not be compatible with the printer. Use the standard Windows VGA driver or contact the manufacturer of your video card for an updated driver. For information on changing the video driver, see your Windows documentation.

Clean one or both print heads as described in Chapter 6.

Replace one or both ink cartridges as described in Chapter 6.

Vertical or horizontal lines do not align.

Calibrate your printer as described in Chapter 6.

You see light banding in your printouts.

Turn on MicroWeave in the printer driver.

If you still see light banding, clean the print heads as described in Chapter 6.

The printout contains incorrect or garbled characters.

Make sure EPSON Stylus COLOR 500 is selected as the default Windows printer driver (Windows driver) or is the last printer selected in the Chooser (Macintosh driver).

If you are running Windows, make sure the Print Manager is turned off in the Control Panel Printers utility; see your Windows documentation or online help for instructions.

Print jobs may be held in the EPSON Spool Manager (Windows) or the Epson Monitor2 utility (Macintosh). Select any print jobs marked pending, waiting, or held; then select Delete or Cancel Printing.

If you still see incorrect or garbled characters, print a demonstration page to see if the problem is with your printer; see Chapter 5 for instructions. If the demonstration page prints, you may have a problem with your application software or your printer cable. Make sure your cable is connected securely and see your program's documentation for troubleshooting information. If no demonstration page prints, you may have a problem with your printer; contact your EPSON dealer or an authorized EPSON servicer.

You see incorrect colors in your printout.

Make sure EPSON Stylus COLOR 500 is selected as the default Windows printer driver or is the last printer selected in the Chooser (Macintosh driver).

If colors are faint or do not appear at all, make sure you selected Color in the printer driver Ink box.

Make sure you did NOT select No halftoning in the Macintosh printer driver Method setting.

Check that the printer driver's Brightness and Contrast settings (Windows driver) or Light/Dark setting (Macintosh driver) are appropriate for the image.

If you scanned the image, the different color interpretation technologies used by your scanner, monitor, and printer can never produce an exact color match with the original image. However, check your scanner documentation for utilities you can use to calibrate your scanner to your monitor and printer to more closely match colors.

If you are printing from a DOS application using Economy mode, black text or graphics will appear gray on your printout; turn off Economy mode using the printer's Default setting mode to achieve deeper blacks. See Chapter 5 for instructions.

Clean the color print head as described in Chapter 6.

The printed image is light or faint or has many gaps.

The paper thickness lever may not be set correctly. The position for envelopes or thick paper may cause faint printouts if used for plain paper. See Chapter 4.

You may have selected Economy printing in the Default setting mode. Turn this mode off in the Default setting mode. See "Using the Default Setting Mode" in Chapter 5 to turn it off.

The print head nozzles may need cleaning. Clean one or both print heads up to three times.

Printing starts too high or too low on the page, or the page length or margins are not what you expect.

Make sure you selected the correct Paper Size option in the printer driver; see Chapter 2 or 3.

Use your software program to adjust the margins, change the number of lines per page, or change the page length setting to match the paper you are using.

Change the loading position of the paper using Default setting mode as described in Chapter 5.

Problems With Printing

If you cannot get the printer to print, first check that paper is loaded in the printer. Then check that the printer is plugged into a working electrical outlet that is not controlled by a switch or timer. Verify that the interface cable is securely connected to the printer and computer. If all this is correct, see the following specific problems.

Printing stops and the Paper Out *light is on.*

No paper is loaded in the printer or it is loaded incorrectly. Load paper in the sheet feeder correctly; then press the Load/Eject button to turn the Paper Out light off and resume printing.

Printing stops and the Paper Out *light is flashing.*

Paper may have jammed in the printer. Turn off the printer and gently pull out the paper. If it tears off inside the printer, open the printer cover and remove the paper. See "Paper Handling Problems" later in this chapter for more information.

You see a system memory error message on your PC and the printer does not print.

The Copies options in the Windows printer driver require additional system memory. If you see an error message or are unable to print using these options, try closing any unnecessary applications, reducing the size of your print job, turning off the Copies options, or increasing system memory.

The Windows printer driver installed with Windows 3.1 does not work correctly after you upgrade to Windows 95.

You need to reinstall the printer driver after upgrading to Windows 95 so the driver is set up correctly for Windows 95. See Chapter 2 for instructions.

The printer sounds like it is printing, but nothing prints.

The print heads may need cleaning. See Chapter 6 for instructions.

One or both ink cartridges are empty or too old. A cartridge is too old if it has been used longer than six months or beyond the date on its packaging. First clean the print heads as described in Chapter 6. If this does not solve the problem, replace the ink cartridges.

You see error messages on your PC because of printing conflicts.

Before sending print jobs to the printer, the EPSON Spool Manager stores them in a temporary directory. If you see conflict error messages or printing is very slow, the problem may be caused by other temporary files in this directory. To change the Spool Manager default directory, follow these steps:

1. Make a directory on your hard disk to store the Spool Manager files, for example, C:\SPLTEMP.

2. Open the EPSON program group or folder and double-click the Spool Manager icon.

3. Make sure Epson Stylus COLOR 500 is selected, and then open the Queue menu.

4. Select Setup. In the Queue Setup dialog box, change the spool directory to the one you created in step 1.

5. If you are using Windows 3.1, also make sure the Use Print Manager for this port checkbox is checked. (It should not be checked if you are using Windows 95.) Then select OK.

6. Open the Options menu and select Default Spool Directory.

7. In the dialog box, change the spool directory to the one you created in step 1. Then select OK.

8. Close the Spool Manager.

The printer prints blank pages.

Make sure EPSON Stylus COLOR 500 is selected as the default Windows printer driver or is the last printer selected in the Chooser (Macintosh driver).

Make sure you selected the correct Paper Size option in the printer driver; see Chapter 2 or 3 or your driver's online help for instructions. Also make sure the margins you selected in your application software fit the paper size you're using.

Print speed is slow.

Print speed is directly influenced by the volume of data contained in a given document. Because high resolution and color printing significantly increase the amount of data to be processed, these two factors have the greatest effect on print speed. Carefully considering your use of color and resolution can help you optimize your printing times.

You may be using printer driver settings that are more suitable for graphics printing and unnecessarily slowing down text printing. To speed up text printing only, turn off MicroWeave mode and turn on High Speed mode. You can also select Economy mode (180 dpi) in the printer driver for printing draft copies. Some combinations of Printing Mode (resolution) and Media Type do not allow you to select these settings; if this is the case for your settings, select a lower resolution, possibly using Economy for drafts and 360 dpi for your final output. However, do not turn off MicroWeave when printing final copies of high-quality graphics or photographs.

Ink cartridges do not last as long as expected.

The ink cartridge life depends on the amount of ink used in printing. If you often print pages with large graphics and dense text with little white space, you will use up cartridges faster than if you print pages with lots of white space. The printer also uses ink during a print head cleaning cycle, so do not perform cleaning cycles unless necessary.

If you replace an ink cartridge before its Ink Out light flashes, the sensor that tells you when ink is out will not work correctly with the new cartridge.

In Windows 95, the Status Monitor box does not appear with the Despooler.

The Windows Print Manager may be interfering with the Status Monitor. Double-click Spool Manager in the EPSON folder. Open the Queue menu and select Setup. Make sure the Use Print Manager for this port checkbox is not checked.

Then check your bidirectional spool settings. Click Start, open Settings, and select Printers. Double-click the EPSON Stylus COLOR 500 icon, open the Printer menu, and select Properties. Click the Details tab, select Spool Settings, and make sure the Enable bi-directional support for this printer option is turned on. Click OK. The Status Monitor should now appear when you send your next print job.

The printer does not seem to receive print jobs.

On a PC, release any print jobs that may be held in the EPSON Spool Manager. Start Spool Manager and click any job marked pending or held. Then open the Document menu and select Delete. To verify that the print queue is not held, open the Queue menu and click Hold if there is a check mark beside the option.

On a Macintosh, release any print jobs that may be held in the Epson Monitor2 utility. Click the upper right corner of the screen and select Monitor2 from the menu. Click any print job shown under Waiting and click Cancel Printing.

Make sure EPSON Stylus COLOR 500 is selected as the default Windows printer driver or is the last printer selected in the Chooser (Macintosh driver).

If you still get no output, try printing a demonstration page to see if the problem is with your printer; see Chapter 5 for instructions. If no demonstration page prints, you may have a problem with your printer; contact your EPSON dealer or an authorized EPSON servicer.

If the demonstration page prints, you may have a problem with your application software or your printer cable. Make sure your cable is connected securely and see your program's documentation for troubleshooting information. On a PC, you can use the printer's hex dump mode to pinpoint communication problems between the printer and a software program. To turn on hex dump mode, first turn off the printer. Then hold down the Cleaning 0 and Cleaning NNN buttons while you turn on the printer. Now send a print job. The printer prints the exact codes it receives from the computer in hexadecimal format. Report the codes to your support technician.

Paper Handling Problems

This section describes how to prevent paper jams and ensure that paper feeds properly.

Paper Jam Problems

Use a higher quality paper that is suitable for ink jet printers and is not too thin, too thick, or rough. For best quality, use EPSON special coated and high-quality glossy papers. See Appendix A for paper specifications.

Fan the stack of paper before you load it.

If you loaded plain paper, try turning the stack over. The printable side may have been facing down.

Do not load too many sheets in the sheet feeder. You can load up to 100 sheets of plain paper, 70 sheets of special coated paper, 10 envelopes, 50 sheets of transparency film (with one sheet of plain paper beneath the stack), or 30 sheets of high-quality glossy paper (with one sheet of plain paper beneath the stack).

Paper Feeding Problems

The paper was not installed properly. Remove it, fan the paper and tap it on a flat surface. Insert the stack into the printer straight up and then rest it against the paper support.

Paper is curled or folded. Use flat, undamaged paper.

The paper is of poor quality; use a better quality paper.

The paper is too thin or thick; see Appendix A for paper size and type specifications.

The paper was exposed to excess humidity, over 60%. See Appendix A for specifications on required environmental conditions.

The left edge guide is too tight or too loose; adjust it for the size of the paper.

Too many sheets are loaded in the sheet feeder. You can load up to 100 sheets of plain paper, 70 sheets of special coated paper, 10 envelopes, 50 sheets of transparency film (with one sheet of plain paper beneath the stack), or 30 sheets of high-quality glossy paper (with one sheet of plain paper beneath the stack).

Other Paper Handling Problems

If you still have paper handling problems, see the following suggestions.

The printer loads more than one sheet at a time.

Remove the stack of paper and fan it. Tap it on a flat surface to even the edges. Then reload the paper.

The paper is too thin or thick, or was exposed to excess humidity; see Appendix A for exact specifications.

Make sure the paper thickness and thickness adjustment levers are set correctly for your media type; see Chapter 4 for instructions.

Make sure the printer driver's Copies setting and the copies setting in your application software are set to print one copy at a time. Also verify that you have selected the correct paper size in the driver and in your application software.

Paper does not fully eject.

Use the Load/Eject button to eject the page.

The paper may be too long. Use paper that is within the specified size. See “Technical Specifications” in Appendix A.

Ejected paper is wrinkled.

The paper is too thin or damp. Do not store paper in damp or humid places.

Paper is feeding crooked.

The paper is old or creased. Use only new, smooth sheets of paper.

Too much paper is loaded in the sheet feeder. Remove a few sheets.

The paper is not the proper size and quality; see Appendix A for exact specifications.

The left edge guide is too tight or too loose. Adjust it correctly for the width of your paper.

Appendix A

Technical Specifications

A

Printing

Printing method: On-demand ink jet

Nozzle configuration: 64 monochrome (black) nozzles
60 color (cyan, magenta, yellow) nozzles
(20×3; 20 for each color)

Printable columns and printing speed: *

Character pitch (characters per inch)	Printable columns	Printing speed (characters per second)
10	80	200
12	96	240
15	120	300
17 (10 condensed)	137	343
20 (12 condensed)	160	400

* Print speeds vary depending on system configuration, software application, resolution, and amount of page covered. Figures based on letter-size paper with color printing.

Resolution: Maximum 720×720 dpi

Paper feed speed: 92 milliseconds per 1/6-inch line

Input buffer: 56KB

Print direction: Bidirectional with logic seeking for text and graphics; unidirectional and autodirectional modes available in Default setting mode

Control code: ESC / P 2 and expanded raster graphics code
IBM X24E emulation code

Paper feeding: Auto sheet feeder

Line spacing: 1/6-inch (default), 1/8-inch, or programmable in 1/360-inch increments

Character tables: 1 Italic and 8 graphics character tables

Character sets: 1 legal and 14 International character sets

Paper

Note:
Since the quality of any particular brand or type of paper may be changed by the manufacturer at any time, EPSON cannot guarantee the use of any particular brand or type of paper. Always test samples of paper stock before purchasing large quantities or printing large jobs.

Paper path:	Sheet feeder, top entry
Sheet feeder capacity:	100 sheets of plain paper at 17 lb (64 g / m^2) 70 sheets of EPSON special coated paper 30 sheets of EPSON high-quality glossy paper (with one sheet of plain paper beneath the stack or each single sheet loaded) 50 sheets of transparency film (with one sheet of plain paper at bottom of stack) 10 envelopes
Paper sheets:	
Size	Letter (8.5 × 11 inches) A4 (210 × 297 mm) Legal (8.5 × 14 inches) B5 (176 × 250 mm) A6 (105 × 148 mm) Statement (8.5 × 5.5 inches) Executive (7.5 × 10 inches)
Paper types	Plain paper, EPSON's coated paper, high-quality glossy paper, and transparencies
Thickness	0.003 to 0.004 inch (0.08 to 0.11 mm)
Paper weight	17 to 24 lb (64 to 90 g / m^2) Use 24 lb (90 g / m^2) paper under normal temperature and humidity conditions.

Envelopes:

Size	No. 10	9.5 × 4.1 inches (240 × 104 mm)
	DL	8.7 × 4.3 inches (220 × 110 mm)
Paper types	Plain, bond, or airmail paper	
Thickness	0.006 to 0.02 inch (0.16 to 0.52 mm)	
Paper weight	12 to 24 lb (45 to 90 g / m^2)	

Transparencies:

Size	A4	(210 × 297 mm)
	Letter	(8.5 × 11 inches)
Thickness	0.003 to 0.0033 inch (0.075 to 0.085 mm)	

Note:

- ❑ *Poor quality paper may reduce print quality and cause paper jams and other problems. If you encounter problems, switch to a higher grade of paper.*
- ❑ *Print on special coated paper, high-quality glossy paper, envelopes, and transparencies only under these normal conditions:*

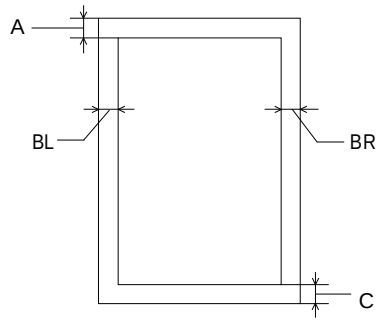
  Temperature: 59 to 77°F (15 to 25°C)
  Humidity: 40 to 60% RH

  (High-quality glossy paper can be stored at 20 to 60% relative humidity.)
- ❑ *Do not load folded or curled paper, envelopes, and transparencies.*
- ❑ *The following EPSON genuine papers are available:*

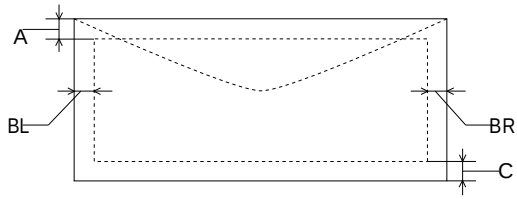
  S041062 Special coated paper for 720 dpi printing (Letter)
  S041048 Special coated paper for 720 dpi printing (Legal)
  S041060 Special coated paper for 360 dpi printing (Letter)
  S041072 High-quality glossy paper (Letter)
  S041064 Transparency film (Letter)

Printable area:

Single sheets



Envelopes



A The minimum top margin is 0.12 inch (3.0 mm).

Note: When printing multiple sheets of glossy paper, the minimum top margin is 1.2 inches (30 mm).

BL The minimum left margin is 0.12 inch (3.0 mm).

BR The minimum right margin is:
0.12 inch (3.0 mm) for Statement and Executive paper
0.38 inch (9.7 mm) for Letter and Legal paper and transparencies
0.15 inch (3.8 mm) for A4 paper
0.54 inch (13.8 mm) for DL envelopes
1.38 inches (35.1 mm) for #10 envelopes

C The minimum bottom margin is 0.54 inch (14.0 mm).

Ink Cartridges

Black ink cartridge (S020093):

Color	Black
Print capacity*	620 pages (A4 paper; text)
Cartridge life*	2 years from production date and up to 6 months after opening the package at 77°F (25°C)
Temperature	Storage: –4 to 104°F (–20 to 40°C) 1 month at 104°F (40°C) Transit: –22 to 140°F (–30 to 60°C) 1 month at 104°F (40°C) 120 hours at 140°F (60°C) Freezing:** 24.8°F (–4°C)
Dimensions	.78 inches (W) × 2.1 inches (D) × 1.5 inches (H) 19.8 mm (W) × 52.7 mm (D) × 38.5 mm (H)

Color ink cartridge (S020097):

Colors	Cyan, magenta, and yellow
Print capacity*	320 pages (A4; 360 dpi; 5% of each color)
Cartridge life*	2 years from production date and up to 6 months after opening the package at 77°F (25°C)
Temperature	Storage: –4 to 104°F (–20 to 40°C) 1 month at 104°F (40°C) Transit: –22 to 140°F (–30 to 60°C) 1 month at 104°F (40°C) 120 hours at 140°F (60°C) Freezing:** 24.8°F (–4°C)
Dimensions	1.8 inches (W) × 2.2 inches (D) × 1.7 inches (H) 45.9 mm (W) × 56.5 mm (D) × 43.2 mm (H)

* Print capacity and ink cartridge life may vary. If you often print large graphics and dense text with little white space, you use ink faster than if you print pages with lots of white space. Excessive print head cleaning also consumes ink.

** The ink thaws in approximately 3 hours at 77°F (25°C).

C

Caution:

- ❑ *Use only genuine EPSON ink cartridges and do not refill them. Other products may cause damage not covered by EPSON's warranty.*
- ❑ *Do not use an ink cartridge after the expiration date on the package.*

Mechanical

Paper feed method:	Friction with auto sheet feeder, top entry
Total print volume:	75,000 pages (A4 paper; text)
Dimensions and weight:	Storage Width 17.0 inches (433 mm) Depth 9.8 inches (248 mm) Height 7.8 inches (198 mm) Weight 11.3 lb (5 kg), without ink cartridges Printing Width 17.0 inches (433 mm) Depth 22.9 inches (582 mm) Height 11.7 inches (297 mm) Weight 11.3 lb (5 kg), without ink cartridges

Electrical

Input voltage range:	103.5 to 132 V
Rated frequency range:	50 to 60 Hz
Input frequency range:	49.5 to 60.5 Hz
Rated current:	0.5 A
Power consumption:	Approx. 18 W (ISO 10561 letter pattern)

Environmental

Temperature:	Operation	50 to 95°F (10 to 35°C)
	Storage*	–4 to 140°F (–20 to 60°C) 1 month at 104°F (40°C) 120 hours at 140°F (60°C)
Humidity:	Operation	20 to 80% RH
	Storage*	5 to 85% RH (without condensation)

* Stored in shipping container

Safety Approvals

Safety standards:	UL 1950 with D3, CSA 22.2 950 with D3
RFI:	FCC part 15 subpart B class B

Fonts

The printer comes with an installed set of fonts, which are selectable using the Default setting mode. However, the printer always uses the fonts you select with your software program. The only time you need to select the printer's installed fonts is when your software program does not allow you to select fonts.

You can select other font and pitch combinations using ESC / P 2 commands, as described in Appendix B.

Bitmap fonts

Fonts	10 cpi	12 cpi	15 cpi	Proportional
EPSON Roman	√	√	√	√
EPSON Sans Serif	√	√	√	√
EPSON Courier	√	√	√	—
EPSON Prestige	√	√	√	—
EPSON Script	√	√	√	—

Scalable fonts

Fonts	Minimum point size	Maximum point size	Increments
EPSON Roman	8	32	2
EPSON Sans Serif	8	32	2
EPSON Roman T	8	32	2
EPSON Sans Serif H	8	32	2

Font samples

EPSON Roman-T ABCDEFGhijklmn0123456789

EPSON Sans Serif H ABCDEFGhijklmn0123456789

EPSON Roman ABCDEFGhijklmn0123456789

EPSON Courier ABCDEFGhijklmn0123456789

EPSON Sanserif ABCDEFGhijklmn0123456789

EPSON Prestige ABCDEFGhijklmn0123456789

EPSON Script *ABCDEFGhijklmn0123456789*

Interface Specifications

This printer is equipped with an 8-bit parallel interface and a serial interface.

Parallel Interface

Data format:	8-bit parallel, IEEE-1284 compatible mode
Synchronization:	$\overline{\text{STROBE}}$ pulse
Handshake timing:	BUSY and $\overline{\text{ACKNLG}}$ signals
Signal level:	TTL compatible
Connector:	36-pin, Centronics compatible connector

Pin assignments

Signal Pin	Return Pin	Signal	Direction	Description
1	19	$\overline{\text{STROBE}}$	IN	$\overline{\text{STROBE}}$ pulse to read data.
2 3 4 5 6 7 8 9	20 21 22 23 24 25 26 27	DATA 0 DATA 1 DATA 2 DATA 3 DATA 4 DATA 5 DATA 6 DATA 7	IN IN IN IN IN IN IN IN	These signals represent information in bits 0 to 7 of parallel data respectively. Each signal is at HIGH level when data is logical 1 and LOW when it is logical 0.
10	28	$\overline{\text{ACKNLG}}$	OUT	About a 5-µs pulse. LOW indicates data has been received and the printer is ready to accept more data.
11	29	BUSY	OUT	A HIGH signal indicates the printer cannot receive data. The signal goes HIGH in the following cases: 1) During data entry (for each character) 2) During initialization 3) During self test, demonstration, and default-setting printing 4) During a printer-error state
12	28	PE	OUT	A HIGH signal indicates the printer is in a paper-out state or in an error state
13	28	SLCT	OUT	Always at high when printer is on
14	30	$\overline{\text{AUTO}}$ $\overline{\text{FEED}}$ $\overline{\text{XT}}$	IN	Not used
15	—	NC	—	Not connected
16	—	GND	—	Logic ground level
17	—	CHASSIS GND	—	Printer's chassis ground, which is connected to the logic ground

Signal Pin	Return Pin	Signal	Direction	Description
18	—	Logic H	OUT	Pulled up to +5 V through 3.9 KΩ resistance
19-30	—	GND	—	Twisted-pair return signal ground level
31	30	$\overline{\text{INIT}}$	IN	When this signal goes LOW, the printer controller is reset to its state when the power is first turned on and the print buffer is cleared. This level is normally HIGH; its pulse width must be more than 50 µs at the receiving terminal.
32	29	$\overline{\text{ERROR}}$	OUT	This signal level goes LOW when the printer: 1) Is out of paper 2) Is in an error state 3) Has no ink cartridges installed
33	—	GND	—	Same as for Pins 19-30
34	—	NC	—	Not connected
35	—	+5 V	OUT	Pulled up to +5 V through 3.3 KΩ resistance
36	30	SLIN	IN	Not used

Note:

- *The column heading "Direction" refers to the direction of signal flow as viewed from the printer.*
- *"Return Pin" denotes the twisted-pair return pin to be connected at signal ground level. For the interface wiring, be sure to use a twisted-pair cable for each signal and to complete the connection on the return side.*
- *All interface conditions are based on TTL level. Both the rise and fall times of each signal must be less than 0.2 microseconds.*
- *Data transfer must be carried out by observing the $\overline{\text{ACKNLG}}$ or BUSY signal. Data transfer to this printer can be carried out only after receipt of the $\overline{\text{ACKNLG}}$ signal or when the level of the BUSY signal is LOW.*

Reverse channel

Transmission mode:	IEEE-1284 Nibble mode
Adaptable connector:	57-30360 (Amphenol) or equivalent
Synchronization:	Refer to the IEEE-1284 specification
Handshaking:	Refer to the IEEE-1284 specification
Signal level:	IEEE-1284 level 1 device
Data transmission timing:	Refer to the IEEE-1284 specification
Extensibility request:	The printer responds to the extensibility request in the affirmative when the request is 00H or 04H, which means: 00H: Request nibble mode of reverse channel transfer 04H: Request device ID in nibble mode of reverse channel transfer

The following table lists the parallel connector pin assignments and describes their respective interface signals.

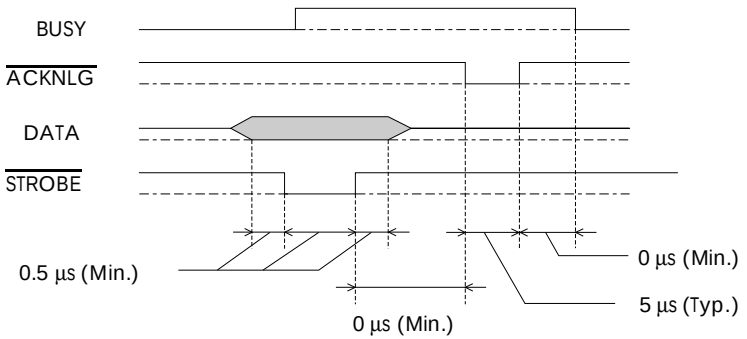
Pin no.	Signal name	GND	In/Out	Description
1	HostClk	19	In	Strobe pulse. Input data is latched at falling edge of the signal.
2	DATA1	20	In	Bit 0: LSB Parallel input data to the printer.
3	DATA2	21	In	These signals represent information in bits 0 to 7 of parallel data respectively. Each signal is at HIGH level when data is logical 1 and LOW when it is logical 0. These signals are used to transfer the 1284 extensibility request values to the printer.
4	DATA3	22	In	
5	DATA4	23	In	
6	DATA5	24	In	
7	DATA6	25	In	
8	DATA7	26	In	
9	DATA8	27	In	

Pin no.	Signal name	GND	In/Out	Description
10	PtrClk	28	Out	Used to qualify data being sent to the host. Set LOW then HIGH to cause an interrupt indicating to host that data is available.
11	PtrBusy/ DataBit-3,7	29	Out	Data bits 3 then 7 indicate forward channel busy status.
12	ACkDataReq/ DataBit-2,6	28	Out	Data bits 2 then 6. Set HIGH until host requests data transfer, then follows nData Avail (nFault).
13	Xflag/ DataBit-1,5	28	Out	X-flag signal and reverse channel transfer data bit 1 then 5
14	HostBusy	30	In	Set LOW to indicate that host can receive peripheral device to host data. Then set high to acknowledge receipt of that nibble. Set high in response to PtrClk (nAck) low pulse to re-enter reverse data transfer phase.
31	$\overline{\text{INIT}}$	30	In	Not used.
32	$\overline{\text{DataAvail}}$/ DataBit-0,4	29	Out	This signal is LOW when the printer is in an error state.
36	1284-Active	30	In	1284 active signal
18	Logic H	-	Out	Pulled up to +5V through 3.9 kΩ resistance.
35	+5V	-	Out	Pulled up to +5V through 3.3 kΩ resistance.
17	Chassis	-	-	Chassis GND.

Pin no.	Signal name	GND	In/Out	Description
16, 33, 19-30	GND	-	-	Signal GND.
15 ,34	NC	-	-	Not connected.

Note:
The column heading "In/Out" refers to the direction of signal flow as viewed from the printer.

Timing chart



Transition time (the rise and the fall) of every signal must be less than 0.2 µs.

Serial Interface

The printer's built-in serial interface is based on the RS-422 standard so you can connect the printer to an Apple Macintosh.

Standard:	Based on RS-422
Synchronization:	Asynchronous
Bit rate:	57.6 Kbps / 230.4 Kbps
Handshaking:	DTR protocol

Word format:

Data bit	8 bits
Parity bit	None
Start bit	1 bit
Stop bit	1 bit

Connector: 8-pin mini-circular connector

Recommended cable: Apple System Peripheral-8 cable (M0197)

Initialization

The printer can be initialized (returned to a fixed set of conditions) in these ways:

Hardware initialization	* The printer is turned on. * The printer receives an $\overline{\text{INIT}}$ signal from the parallel interface: pin 31 goes LOW
Software initialization	* Software sends the ESC @ (initialize the printer) command; the last panel settings are kept

Each initialization method resets the font according to the default settings selected using the control panel. However, ESC @ does not initialize the printer mechanism, clear the input data buffer, or clear the user-defined character set.

Default Settings

The table below shows the default settings that take effect when the printer is initialized.

Item	Default setting
Top-of-form position	Current paper position
Page length	Single sheets: measured by self-test printing
Left and right margins	Cancelled
Line spacing	1/6-inch line spacing
Character pitch	Last font selected in Default setting mode
Vertical tab position	Cleared
Horizontal tab positions	Every eight characters
Font selection	Last font selected in Default setting mode
Special printing effects	Cancelled (except condensed and economy printing)
User-defined character set	Hardware/control panel initialization: cleared Software initialization: deselected only

In addition, hardware initialization erases any text in the data buffer.

Appendix B

Commands and Character Tables

B

Command List

This printer works with the two sets of commands described in this section.

EPSON ESC/P 2 Commands

Select the EPSON ESC/P 2 printer commands in your software programs for the most advanced fonts and graphics available. If you need more information about using printer commands, you can purchase the *ESC/P 2 Reference Manual* (ESCP2REF) from EPSON Accessories by calling **(800) 873-7766** (in the U.S. only). In Canada, call **(800) BUY-EPSON** for sales locations.

General operation:
ESC @, ESC U, ESC EM

Paper feeding:
CR, FF, LF, ESC 0, ESC 2, ESC 3, ESC +

Page format:
ESC (C, ESC C, ESC C 0, ESC Q, ESC l, ESC (c, ESC N, ESC O

Print position motion:
ESC $, ESC \, ESC (V, ESC (v, ESC D, HT, ESC B, ESC J, VT

Font selection:
ESC k, ESC x, ESC X, ESC P, ESC M, ESC g, ESC p, ESC 4, ESC 5, ESC E, ESC F, ESC !

Font enhancement:
ESC W, DC 4, SO, DC2, SI, ESC w, ESC G, ESC H, ESC T, ESC S, ESC -, ESC (-, ESC q

Spacing:
ESC Space, ESC c, ESC (U

Character handling:
ESC t, ESC (t, ESC R, ESC %, ESC &, ESC :, ESC 6, ESC 7, ESC (^

Bit image:
ESC *

Graphics:
ESC (G, ESC ., ESC (i

Color:
ESC r

Printing mode:
ESC (K

IBM X24E Emulation Codes

This printer emulates the IBM Proprinter™ with the following commands. (For detailed information, see the IBM X24E reference manual.)

General operation:
NUL, DC3, ESC j, BEL, CAN, DC1, ESC Q, ESC [K, ESC U

Paper feeding:
FF, LF, ESC 5, ESC A, ESC A (AGM*), ESC 0, ESC 1, ESC 2, ESC 3, ESC 3 (AGM*), CR

Page format:
ESC C, ESC X, ESC N, ESC O, ESC 4

Print position motion:
ESC d, ESC R, ESC D, HT, ESC B, VT, ESC J, ESC J (AGM*)

Font selection:
DC2, ESC P, ESC :, ESC E, ESC F, ESC I

Font enhancement:
DC4, SO, ESC SO, ESC W, ESC [@, SI, ESC SI, ESC G, ESC H, ESC T, ESC S, ESC -, ESC _

Spacing:
BS, SP, ESC [\

Character handling:
ESC 6, ESC 7, ESC [T, ESC ^, ESC \

Bit image:
ESC K, ESC L, ESC Y, ESC Z, ESC [g, ESC * (AGM*)

* Alternate Graphics Mode

Character Tables

The printer comes with an installed set of character tables. However, when printing from Windows and most DOS software programs, the printer prints the characters you see on screen and does not use its built-in character tables. Unless you're printing from a DOS program, and cannot print the character you need, you should never have to change the character table.

Note:
You never need to select the printer's character tables or fonts when using the printer with a Macintosh.

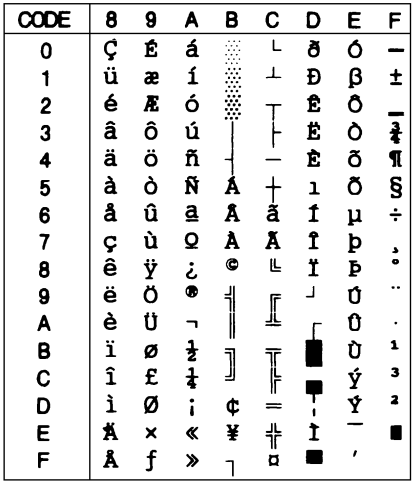
These character tables are selected using the printer's Default setting mode or by using software commands.

All tables except the italic are the same as the PC437 table for hex codes 00 through 7F, so only the PC437 table is shown completely. The rest of the tables show only the characters for hex codes 80 through FF.

PC437 (U.S., Standard Europe)

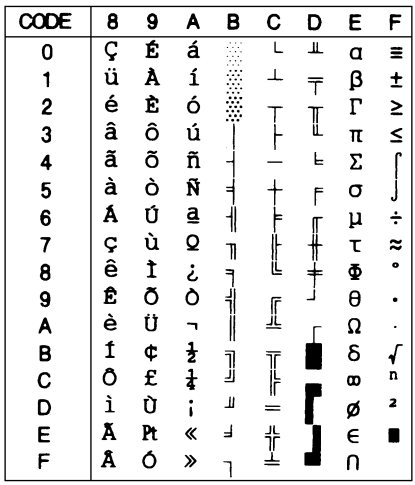
CODE	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	NUL			0	@	P	`	p	Ç	É	á	▒	└	╨	α	≡
1			!	1	A	Q	a	q	ü	æ	í	▒	┴	╤	β	±
2		DC2	"	2	B	R	b	r	é	Æ	ó	▒	┬	╥	Γ	≥
3			#	3	C	S	c	s	â	ô	ú	▒	├	╙	π	≤
4		DC4	$	4	D	T	d	t	ä	ö	ñ	▒	─	╘	Σ	⌠
5		§	%	5	E	U	e	u	à	ò	Ñ	▒	┼	╒	σ	⌡
6			&	6	F	V	f	v	å	û	ª	▒	╞	╓	µ	÷
7			'	7	G	W	g	w	ç	ù	º	▒	╟	╫	τ	≈
8			(	8	H	X	h	x	ê	ÿ	¿	▒	╚	╪	Φ	°
9	HT	EM	)	9	I	Y	i	y	ë	Ö	⌐	▒	╔	┘	θ	∙
A	LF		*	:	J	Z	j	z	è	Ü	¬	▒	╩	┌	Ω	·
B	VT	ESC	+	;	K	[	k	{	ï	¢	½	▒	╦	█	δ	√
C	FF		,	<	L	\	l	¦	î	£	¼	▒	╠	▌	∞	ⁿ
D	CR		-	=	M	]	m	}	ì	¥	¡	▒	═	▐	ø	²
E	SO		.	>	N	^	n	~	Ä	₧	«	▒	╬	▀	∈	■
F	SI		/	?	O	_	o		Å	ƒ	»	▒	╧	▀	∩	

PC850 (Multilingual)



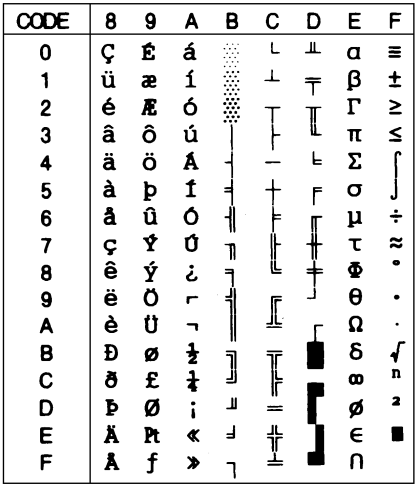
CODE	8	9	A	B	C	D	E	F
0	Ç	É	á	▒	└	ð	Ó	―
1	ü	æ	í	▒	┴	Ð	ß	±
2	é	Æ	ó	▒	┬	Ê	Ô	‗
3	â	ô	ú	▒	├	Ë	Ò	¾
4	ä	ö	ñ	▒	─	È	õ	¶
5	à	ò	Ñ	Á	┼	ı	Õ	§
6	å	û	ª	Â	ã	Í	µ	÷
7	ç	ù	º	À	Ã	Î	þ	¸
8	ê	ÿ	¿	©	└	Ï	Þ	°
9	ë	Ö	®	╣	╔	┘	Ú	¨
A	è	Ü	¬	║	╩	┌	Û	·
B	ï	ø	½	╗	╦	█	Ù	¹
C	î	£	¼	╝	╠	▄	ý	³
D	ì	Ø	¡	¢	═	¦	Ý	²
E	Ä	×	«	¥	╬	Ì	¯	■
F	Å	ƒ	»	┐	¤	▀	´	

PC860 (Portuguese)



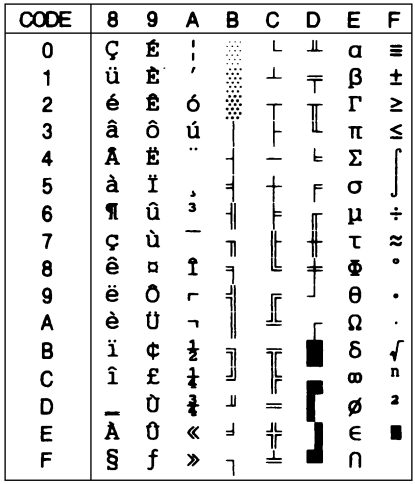
CODE	8	9	A	B	C	D	E	F
0	Ç	É	á	▒	└	╨	α	≡
1	ü	À	í	▒	┴	╤	β	±
2	é	È	ó	▒	┬	╔	Γ	≥
3	â	ô	ú	▒	├	╚	π	≤
4	ã	õ	ñ	▒	─	╒	Σ	⌠
5	à	ò	Ñ	╡	┼	╓	σ	⌡
6	Á	Ú	ª	╢	╞	╫	µ	÷
7	ç	ù	º	╖	╟	╪	τ	≈
8	ê	Ì	¿	╕	╚	┘	Φ	°
9	Ê	Õ	Ò	╣	╔	┌	θ	•
A	è	Ü	¬	║	╩	█	Ω	·
B	í	¢	½	╗	╦	▄	δ	√
C	Ô	£	¼	╝	╠	▌	∞	ⁿ
D	ì	Ù	¡	¢	═	▐	ø	²
E	Ã	₧	«	╜	╬	▀	∈	■
F	Â	Ó	»	┐	╧	▀	∩	

PC861 (Icelandic)



CODE	8	9	A	B	C	D	E	F
0	Ç	É	á	▒	└	╨	α	≡
1	ü	æ	í	▒	┴	╤	β	±
2	é	Æ	ó	▒	┬	╔	Γ	≥
3	â	ô	ú	▒	├	╚	π	≤
4	ä	ö	Á	▒	─	╒	Σ	⌠
5	à	þ	Í	╡	┼	╓	σ	⌡
6	å	û	Ó	╢	╞	╫	µ	÷
7	ç	Ý	Ú	╖	╟	╪	τ	≈
8	ê	ý	¿	╕	╚	┘	Φ	°
9	ë	Ö	⌐	╣	╔	┌	θ	•
A	è	Ü	¬	║	╩	█	Ω	·
B	Ð	ø	½	╗	╦	▄	δ	√
C	ð	£	¼	╝	╠	▌	∞	ⁿ
D	Þ	Ø	¡	¢	═	▐	ø	²
E	Ä	₧	«	╜	╬	▀	∈	■
F	Å	ƒ	»	┐	╧	▀	∩	

PC863 (Canadian-French)



CODE	8	9	A	B	C	D	E	F
0	Ç	É	¦	▒	└	╨	α	≡
1	ü	È	´	▒	┴	╤	β	±
2	é	Ê	ó	▒	┬	╔	Γ	≥
3	â	ô	ú	▒	├	╚	π	≤
4	À	Ë	¨	▒	─	╒	Σ	⌠
5	à	Ï	¸	╡	┼	╓	σ	⌡
6	¶	û	³	╢	╞	╫	µ	÷
7	ç	ù	¯	╖	╟	╪	τ	≈
8	ê	¤	Î	╕	╚	┘	Φ	°
9	ë	Ô	⌐	╣	╔	┌	θ	•
A	è	Ü	¬	║	╩	█	Ω	·
B	ï	¢	½	╗	╦	▄	δ	√
C	î	£	¼	╝	╠	▌	∞	ⁿ
D	‗	Ù	¡	¢	═	▐	ø	²
E	À	Û	«	╜	╬	▀	∈	■
F	§	ƒ	»	┐	╧	▀	∩	

PC865 (Nordic)

CODE	8	9	A	B	C	D	E	F
0	Ç	É	á	▒	└	╨	α	≡
1	ü	æ	í	▒	┴	╤	β	±
2	é	Æ	ó	▒	┬	╥	Γ	≥
3	â	ô	ú	▒	├	╙	π	≤
4	ä	ö	ñ	▒	─	╘	Σ	⌠
5	à	ò	Ñ	▒	┼	╒	σ	⌡
6	å	û	ª	▒	╞	╓	µ	÷
7	ç	ù	º	▒	╟	╫	τ	≈
8	ê	ÿ	¿	▒	╚	╪	Φ	°
9	ë	Ö	⌐	▒	╔	┘	θ	∙
A	è	Ü	¬	▒	╩	┌	Ω	·
B	ï	ø	½	▒	╦	▉	δ	√
C	î	£	¼	▒	╠	▐	∞	ⁿ
D	ì	Ø	¡	▒	═	▌	ø	²
E	Ä	Pt	«	▒	╬	▀	∈	■
F	Å	ƒ	¤	▒	╧	▀	∩	

Abicomp

CODE	8	9	A	B	C	D	E	F
0	NUL			Ò	¡	ò		
1			À	Ó	à	ó		
2		DC2	Á	Ô	á	ô		
3			Â	Õ	â	õ		
4		DC4	Ã	Ö	ã	ö		
5			Ä	Œ	ä	œ		
6			Ç	Ù	ç	ù		
7			È	Ú	è	ú		
8			É	Û	é	û		
9	HT	EM	Ê	Ü	ê	ü		
A	LF		Ë	Ÿ	ë	ÿ		
B	VT	ESC	Ì	¨	ì	ß		
C	FF		Í	£	í	ª		
D	CR		Î	·	Î	º		
E	SO		Ï	§	ï	¿		
F	SI		Ñ	°	ñ	±		DEL

BRASCII

CODE	8	9	A	B	C	D	E	F
0	NUL			°	À	Ð	à	ð
1			¡	±	Á	Ñ	á	ñ
2		DC2	¢	²	Â	Ò	â	ò
3			£	³	Ã	Ó	ã	ó
4		DC4	¤	´	Ä	Ô	ä	ô
5			¥	µ	Å	Õ	å	õ
6			¦	¶	Æ	Ö	æ	ö
7			§	·	Ç	Œ	ç	œ
8			¨	¸	È	Ø	è	ø
9	HT	EM	©	¹	É	Ù	é	ù
A	LF		ª	º	Ê	Ú	ê	ú
B	VT	ESC	«	»	Ë	Û	ë	û
C	FF		¬	¼	Ì	Ü	ì	ü
D	CR			½	Í	Ý	í	ý
E	SO		®	¾	Î	Þ	î	þ
F	SI		¯	¿	Ï	ß	ï	ÿ

Italic

CODE	8	9	A	B	C	D	E	F
0	NUL			*0*	*@*	*P*	`	*p*
1			*!*	*1*	*A*	*Q*	*a*	*q*
2		DC2	"	*2*	*B*	*R*	*b*	*r*
3			*#*	*3*	*C*	*S*	*c*	*s*
4		DC4	*$*	*4*	*D*	*T*	*d*	*t*
5			*%*	*5*	*E*	*U*	*e*	*u*
6			*&*	*6*	*F*	*V*	*f*	*v*
7			'	*7*	*G*	*W*	*g*	*w*
8			*(*	*8*	*H*	*X*	*h*	*x*
9	HT	EM	*)*	*9*	*I*	*Y*	*i*	*y*
A	LF		***	*:*	*J*	*Z*	*j*	*z*
B	VT	ESC	*+*	*;*	*K*	*[*	*k*	*{*
C	FF		*,*	*<*	*L*	\	*l*	*¦*
D	CR		*–*	*=*	*M*	*]*	*m*	*}*
E	SO		*.*	*>*	*N*	^	*n*	~
F	SI		*/*	*?*	*O*	_	*o*	

No characters are available for hex code 15 in the italic character table.

International Character Sets

You can select one of the following international character sets using the printer's Default setting mode or the ESC R command. For example, when you select "Italic France," the characters in the "France" row on the table below are used in the italic character table.

The following eight international character sets can be selected using Default setting mode or the ESC R command.

Country	ASCII code hex											
	23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E
USA	#	$	@	[	\	]	^	`	{	¦	}	~
France	#	$	à	°	ç	§	^	`	é	ù	è	¨
Germany	#	$	§	Ä	Ö	Ü	^	`	ä	ö	ü	ß
UK	£	$	@	[	\	]	^	`	{	¦	}	~
Denmark	#	$	@	Æ	Ø	Å	^	`	æ	ø	å	~
Sweden	#	¤	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü
Italy	#	$	@	°	\	é	^	ù	à	ò	è	ì
Spain	Pt	$	@	¡	Ñ	¿	^	`	¨	ñ	}	~

The following seven additional sets can be selected only with the ESC R command.

Country	ASCII code hex											
	23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E
Japan	#	$	@	[	¥	]	^	`	{	¦	}	~
Norway	#	¤	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
Denmark II	#	$	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
Spain II	#	$	á	¡	Ñ	¿	é	`	í	ñ	ó	ú
Latin America	#	$	á	¡	Ñ	¿	é	ü	í	ñ	ó	ú
Korea	#	$	@	[	₩	]	^	`	{	¦	}	~
Legal	#	$	§	°	′	″	¶	`	©	®	†	™

Characters Available With the ESC (^ Command

To print the characters in the table below, use the ESC (^ command.

CODE	0	1	7
0		▶	
1	☺	◀	
2	☻	↕	
3	♥	‼	
4	♦	¶	
5	♣		
6	♠	▁	
7	•	↨	
8	◘	↑	
9	○	↓	
A	◙	→	
B	♂	←	
C	♀	∟	
D	♪	↔	
E	♫	▲	
F	☼	▼	⌂

Glossary

auto line feed
When this feature is selected in the printer's Default setting mode, each carriage return code (CR) is automatically followed by a line feed (LF) code.

bidirectional printing
Printing in which the print head prints in both directions (bidirectionally). This increases print speed but may reduce precise vertical alignment. Also called *high speed printing*.

brightness
The lightness or darkness level of an image.

character table
The collection of letters, numbers, and symbols that constitute the set of characters used in a particular language.

CMYK
A method of specifying and creating colors using cyan (blue-green), magenta, yellow, and black (K).

contrast
The range of difference between the darkest and lightest colors in an image. The greater the difference, the higher the contrast.

control code
A special code used to control a printer function such as performing a carriage return or line feed.

default
A value or setting that takes effect when the equipment is turned on, reset, or initialized.

dithering
A way of arranging dots on a page to simulate a shade or tone. See also *halftoning*.

dpi
Dots per inch. The dpi measures the resolution. See also *resolution*.

driver
See *printer driver*.

economy mode printing
Printing in which images are printed with fewer dots to save ink. Economy mode printing is faster, too.

error diffusion
A halftoning method where dot patterns are randomly distributed in an image to create soft edges.

ESC/P®
EPSON Standard Code for Printers. The system of commands sent by the computer to control the printer. It is standard for all EPSON printers and supported by most application software for personal computers.

ESC/P 2
Enhanced version of the ESC/P printer command language, including scalable fonts and enhanced graphics.

font
A style of type designated by a family name, such as Courier or Helvetica.™

grayscale
An image consisting of multiple shades of gray, ranging from white to black.

halftoning
Method of repeating tiny dot patterns to represent images.

hex dump
A troubleshooting feature that helps advanced users find the cause of communication problems between the printer and the computer. When the printer is in hex dump mode, it prints each code it receives in hexadecimal notation and ASCII characters. Also called data dump.

high speed printing
Printing in which images are printed in both directions for the purpose of printing faster. Also called *bidirectional printing*.

initialization
The process of restoring the printer's default settings (fixed set of conditions).

ink jet
A non-impact method of printing in which the printer produces each character by precisely spraying ink onto paper.

interface
The connection (via a cable) between the computer and the printer over which print data is transmitted to the printer.

media
Materials upon which data is printed such as envelopes, plain paper, coated paper, glossy paper, and transparency film.

MicroWeave
A printing method in which images are printed in finer increments to reduce the possibility of banding and to produce laser-like images.

printable area
The area of a page on which the printer can print. It is smaller than the physical size of the page due to margins.

printer driver
A software program that sends commands for using the features of a particular printer.

printing mode
A driver setting that assigns the number of dots per inch used to represent an image.Your printer has three printing mode settings: Super - 720 dpi, Best - 360 dpi, and Economy (180 dpi). See also *resolution*.

reset
To return a printer to its default settings.

resolution
A measure of the amount of detail that can be represented. Resolution of printed images is measured in number of dots per inch (dpi). Your printer has three resolution settings: 720 × 720, 360 × 360, and 180 × 180 dpi. See also *printing mode*.

RGB
A method of specifying color by its component proportion of red, green, and blue. Computer monitors use this method to represent colors.

unidirectional printing
Printing in which the print head prints in one direction only. Unidirectional printing is useful for printing graphics because it allows precise vertical alignment.

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