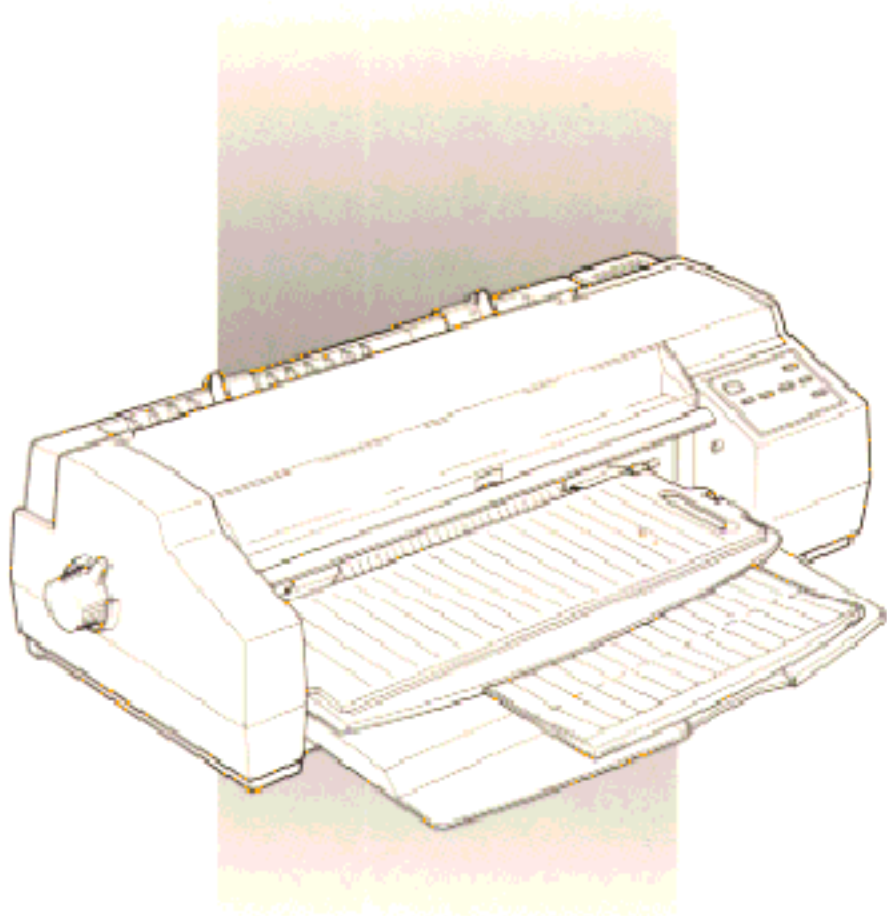


EPSON

Ink Jet Printer

EPSON *Stylus*™ COLOR 1520



User's Guide

Where to Find Information

This User's Guide

Provides you with all the information you need to use your EPSON Stylus Color 1520 and consumable products, from setting up to troubleshooting.

Online Help

Provides you with detailed information and instructions on the Windows printer software that controls your printer. See Chapter 3 for information on accessing online help.

Color Guide

Explains the ABC's of color printing and shows you how to get impressive results from your printer.

Customer Support

Contact Customer Support if your printer is not operating properly and you cannot solve the problem with the troubleshooting information in this guide and online help. See "Contacting Customer Support" in Chapter 10 for more information.

EPSON Stylus™ COLOR 1520

Color Ink Jet Printer

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User's Guide

Declaration of Conformity

According to ISO/IEC Guide 22 and EN 45014

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Declares that the Product:

Product Name: Ink Jet Printer
Type Name: EPSON Stylus COLOR 1520
Model: P892A

Conforms to the following Directive(s) and Norm(s):

Directive 89/336/EEC:

EN 55022 Class B
EN 50082-1
IEC 801-2
IEC 801-3
IEC 801-4
EN 61000-3-2
EN 61000-3-3

Directive 73/23/EEC:

EN 60950

November 1996

M. Hamamoto
President of EPSON EUROPE B.V.

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Safety Instructions

Important Safety Instructions

Read all of these instructions and save them for later reference. Follow all warnings and instructions marked on the printer.

- Do not place the printer on an unstable surface or near a radiator or heat source.
- Place the printer on a flat surface. The printer will not operate properly if it is tilted or at an angle.
- Do not block or cover the openings in the printer's cabinet. Do not 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 use a damaged or frayed power cord.
- 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.
- Unplug the printer before cleaning. Clean with a damp cloth only. Do not spill liquid on the printer.
- Except as specifically explained in this 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.

- ❑ If you plan to use the printer in Germany, observe the following:

To provide adequate short-circuit protection and over-current protection for this printer, the building installation must be protected by a 16 Amp circuit breaker.

Bei Anschluß des Druckers an die Stromversorgung muß sichergestellt werden, daß die Gebäudeinstallation mit einem 16 A-Überstromschalter abgesichert ist.

A few precautions

Even if you are familiar with other types of printers, be sure to read through the following list of precautions before operating your ink jet printer.

- ❑ Do not put your hand inside the printer or touch the cartridge during printing.
- ❑ Under normal circumstances, ink will not come out of the cartridge. If it does get on your skin, wash it off with soap and water. If it gets in your eyes, flush them immediately with water.
- ❑ Keep ink cartridges out of the reach of children.
- ❑ Do not dismantle the ink cartridges or try to refill them. This could result in damage to the print heads.

- ❑ Once you install an ink cartridge, do not open the clamp or remove the cartridge except to replace it with a new one. The cartridge may become unusable otherwise.
- ❑ Install the ink cartridge immediately after you remove it from its package. Leaving the cartridge unpacked for a long time before use may result in reduced print quality.
- ❑ Do not use an ink cartridge beyond the date printed on the cartridge carton. For best results, use up the ink cartridges within six months of installing them.
- ❑ Always turn the printer off using the ⏻ Operate button. The Pause light flashes until the print heads are capped, which means they are in the home (far right) position. Do not unplug the printer or turn off the power to the outlet until the Pause light stops flashing and the ⏻ Operate light is off.
- ❑ Before transporting the printer, make sure the print heads are capped in the home position and the ink cartridges are in place.



ENERGY STAR Compliance

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

The International ENERGY STAR Office Equipment Program is a voluntary partnership with the computer and office equipment industry to promote the introduction of energy-efficient personal computers, monitors, printers, fax machines, and copiers in an effort to reduce air pollution caused by power generation.

For United Kingdom Users

Use of options

Epson (UK) Limited shall not be liable against any damages or problems arising from the use of any options or consumable products other than those designated as Original EPSON Products or EPSON Approved Products by Epson (UK) Limited.

Safety information



Warning: *This appliance must be earthed. Refer to rating plate for voltage and check that the appliance voltage corresponds to the supply voltage.*

Important: *The wires in the mains lead fitted to this appliance are coloured in accordance with the following code:*

Green and yellow — Earth

Blue — Neutral

Brown — Live

If you have to fit a plug:

As the colours of the mains lead of this appliance may not match coloured markings used to identify the terminals in a plug, please proceed as follows:

The green and yellow wire must be connected to the terminal in the plug which is marked with the letter E or the Earth symbol (\perp).

The blue wire must be connected to the terminal in the plug marked with the letter N.

The brown wire must be connected to the terminal in the plug marked with the letter L.

If damage occurs to the plug, replace the cord set or consult a qualified electrician.

Replace fuses only with a fuse of the correct size and rating.

Warnings, Cautions, and Notes



Warnings must be followed carefully to avoid bodily injury.

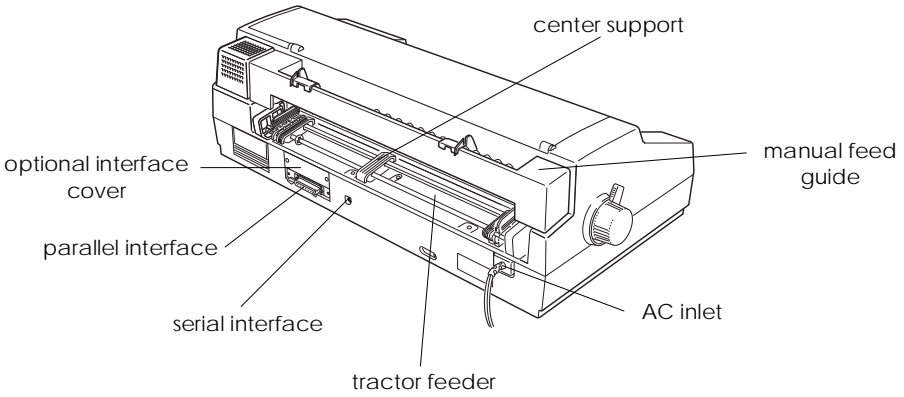
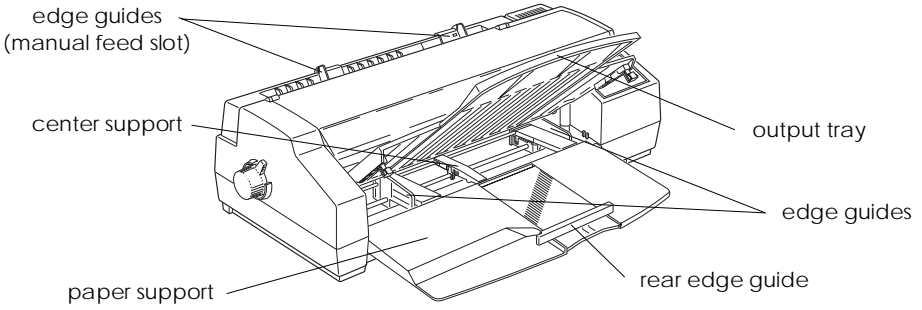
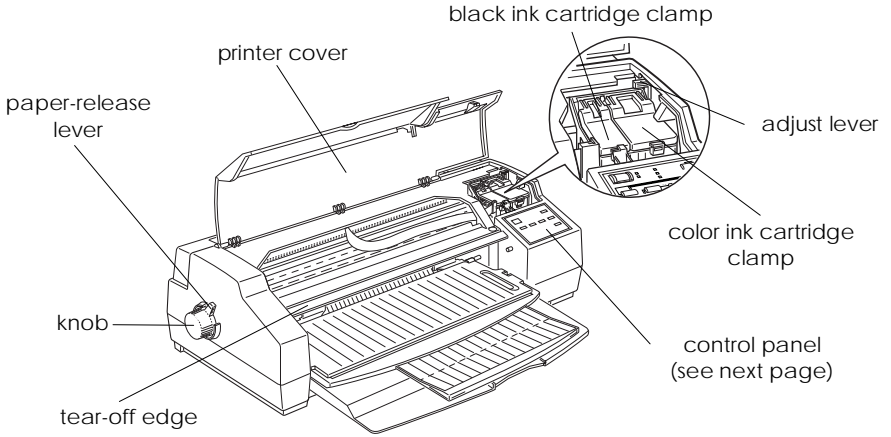


Cautions must be observed to avoid damage to your equipment.

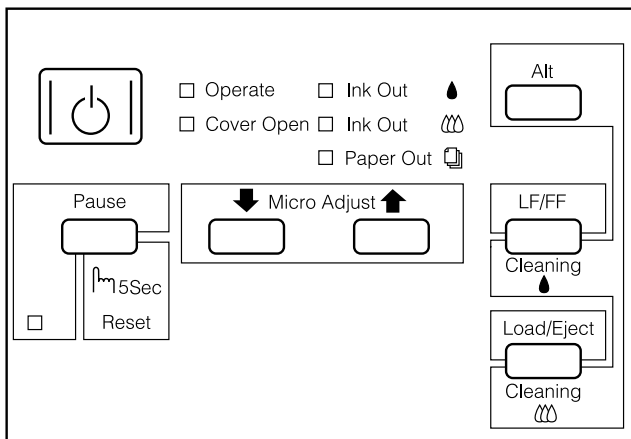
Notes contain important information and useful tips on the operation of your printer.

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Printer Parts and Control Panel Functions



Control Panel







Buttons

Buttons	Function
Operate	Turns the printer on and off.
LF/FF	Feeds paper line by line. Loads a single sheet or advances continuous or banner paper to the next top-of-form position if held down.
Load/Eject	When paper is not loaded: Loads a sheet of paper or a single sheet of continuous paper. When paper is loaded: Ejects a sheet of paper. Feeds continuous paper backward to the paper-park position. Ejects banner paper backward. Feeds continuous or banner paper to the tear-off position when pressed after printing and Auto Tear Off mode is set to off in the default-setting mode.
Pause	Stops printing temporarily. Resumes printing when pressed again. Clears the printer buffer if pressed and held for five seconds.

Buttons	Function
Micro Adjust ⬇ Micro Adjust ⬆	Adjusts the loading position or tear-off position for continuous paper. Press the Micro Adjust ⬇ button to feed paper forward or press Micro Adjust ⬆ to feed paper backward. Micro Adjust settings are saved in the printer's memory. See Chapter 7 for details on adjusting the loading position or tear-off position.
Alt	Moves the carriage to the ink cartridge install position if held down for about three seconds while printing is paused. The Pause light begins flashing. Press this button again to move the carriage back to its home position and start charging ink in the system. See "Replacing an Ink Cartridge" on page 9-2 for details. Activates the secondary functions of other buttons, as described below, if you press another button while holding down the Alt button.
Alt + LF/FF (Black print head cleaning)	Starts the black print head cleaning cycle. See "Cleaning the Print Heads" on page 10-36 for details. Note: <i>Cleaning the print heads uses ink. Don't do it unless print quality declines.</i>
Alt + Load/Eject (Color print head cleaning)	Starts the color print head cleaning cycle. See "Cleaning the Print Heads" on page 10-36 for details. Note: <i>Cleaning the print heads uses ink. Don't do it unless print quality declines.</i>

Lights

The lights on the front of the printer indicate the printer status, such as receiving data, paper jam, or low on ink, etc. The following table describes what the lights mean.

Lights		Printer status
Operate 	○	Printer is on.
	◌	Data remains in the printer's memory.
Paper Out 	○	Paper out. Load paper in the sheet feeder; then press the Load/Eject button to resume printing.
	◌	Paper jam. Turn off the printer and gently pull all the paper out of the printer.
Ink Out 	◌	Ink low. The black ink cartridge is nearly empty. Prepare and replace the black ink cartridge (S020108).
	○	Ink out. The black ink cartridge is empty. Replace the black ink cartridge (S020108).
Ink Out 	◌	Ink low. The color ink cartridge is nearly empty. Prepare and replace the color ink cartridge (S020089).
	○	Ink out. The color ink cartridge is empty. Replace the color ink cartridge (S020089).
Pause	○	Printing is paused.
	◌	Replacing an ink cartridge, charging ink, or cleaning print heads.
Cover Open	○	Printer cover is open and the printer is paused. To resume printing, close the printer cover and press the Pause button.

○ = on, ◌ = flashing

For details on paper handling, see Chapter 7. For details on replacing an ink cartridge, see page 9-2.

System Requirements

When using your printer with a PC

To use your printer, you need Microsoft Windows 3.1, Windows for Workgroups, Windows 95, Windows NT, or DOS; a shielded, twisted-pair parallel cable; and:

Minimum system	Recommended system
80386/16 MHz processor	Pentium processor
4MB RAM	12MB RAM
10MB hard disk space	More than 20MB free hard disk space
VGA monitor	VGA or better monitor

Your computer dealer can help you update your system if it does not meet these requirements.

When using your printer with a Macintosh

The following are the hardware and system requirements that must be met to use this printer with a Macintosh.

Applicable computer models (as of July 1, 1996)

Macintosh LC II, LC III, LC475, LC520, LC575, LC630
 Macintosh IIcx, IIfx, IIsi, IIvi, IIvx
 Macintosh Quadra Series
 Macintosh Centris Series
 Macintosh PowerBook™ Series (excluding PowerBook 100)
 Macintosh PowerBook Duo Series
 Macintosh Performa Series
 Power Macintosh Series

Interface cables

To use your printer with a Macintosh, you need a standard Apple System Peripheral-8 cable (8-pin mini-circular connector) or equivalent.

Environment

Minimum system	Recommended system
System 7.1	System 7.1 or later
5MB of RAM	8MB of RAM or more
20MB hard disk space	More than 40MB free hard disk space

Options and Consumable Products

Options

The following options are available for use with your printer.

Interface cards

A number of optional interfaces are available to supplement the printer's built-in parallel interface. See Appendix B for more information.

If you are not sure whether you need an optional interface or if you want to know more about interfaces, contact your dealer.

Serial Interface Card C82305*/C82306*
32KB Serial Interface Card C82307*/C82308*
32KB Parallel Interface Card C82310*
32KB IEEE-488 Interface Card C82313*
Twinax Interface Card C82315*
Coax Interface Card C82314*
LocalTalk™ Interface Card C82312*
Ethernet Interface Card C82331*
Type B Bidirectional Parallel Interface Card C82345*

Note:

The asterisk is a substitute for the last digit of the product number, which varies by country.

Interface cables

EPSON supplies several types of interface cables. You can use any interface cable that meets the specifications listed below. See your computer manual for any additional requirements.

Parallel Interface Cable (shielded) C83602* from D-SUB 25-pin (computer) to Amphenol 57 (printer)

Serial Interface Cable C83603*/C83604* from D-SUB 25-pin (computer) to D-SUB 25-pin (printer)

Serial Interface Cable C83605*/C83606* from D-SUB 9-pin (computer) to D-SUB 25-pin (printer)

Banner paper holder with cutting guide

Banner Paper Kit C81101*

Consumable Products

Ink cartridges

Black ink cartridge	S020108
Color ink cartridge	S020089

EPSON special media

Most plain paper works well in your printer. In addition, paper specifically designed for ink jet printers such as EPSON's *360 dpi Ink Jet Paper* will meet most high-quality printing needs.

EPSON 360 dpi Ink Jet Paper (A4)	S041059
	S041025
EPSON 360 dpi Ink Jet Paper (Letter)	S041060
EPSON 360 dpi Ink Jet Paper (A3)	S041065
	S041046
EPSON 360 dpi Ink Jet Paper (Super A3/B)	S041066
	S041047
EPSON 360 dpi Ink Jet Paper (A2)	S041078
EPSON Photo Quality Ink Jet Paper (A4)	S041061
	S041026
EPSON Photo Quality Ink Jet Paper (Letter)	S041062
EPSON Photo Quality Ink Jet Paper (Legal)	S041067
	S041048

EPSON Photo Quality Ink Jet Paper (A3)	S041068
	S041045
EPSON Photo Quality Ink Jet Paper (B4)	S041070
	S041044
EPSON Photo Quality Ink Jet Paper (Super A3/B)	S041069
	S041043
EPSON Photo Quality Ink Jet Paper (A2)	S041079
EPSON Photo Quality Ink Jet Card (A6)	S041054
EPSON Photo Quality Ink Jet Card (5 × 8 in.)	S041121
EPSON Photo Quality Ink Jet Card (8 × 10 in.)	S041122
EPSON Photo Quality Glossy Film (A4)	S041071
EPSON Photo Quality Glossy Film (Letter)	S041072
EPSON Photo Quality Glossy Film (A6)	S041107
EPSON Photo Quality Glossy Film (A3)	S041073
EPSON Photo Quality Glossy Film (B)	S041075
EPSON Photo Quality Glossy Film (Super A3/B)	S041074
EPSON Photo Quality Glossy Paper (A4)	S041126
EPSON Photo Quality Glossy Paper (Letter)	S041124
EPSON Photo Quality Glossy Paper (A3)	S041125
EPSON Photo Quality Glossy Paper (A2)	S041123
EPSON Ink Jet Transparencies (A4)	S041063
EPSON Ink Jet Transparencies (Letter)	S041064
EPSON Photo Quality Self Adhesive Sheet (A4)	S041106
EPSON 360 dpi Ink Jet Banner Paper	S041103
EPSON Photo Quality Banner Paper	S041102
EPSON Ink Jet Canvas Cloth	S041132
EPSON Ink Jet Back Light Film (A3)	S041131
EPSON Ink Jet Back Light Film (A2)	S041130

Note:

- ❑ *The availability of special media varies by country.*
- ❑ *Ink jet printers are particularly sensitive to the condition of your paper. Keep unused paper in its original packaging and store it in a cool, dry place.*

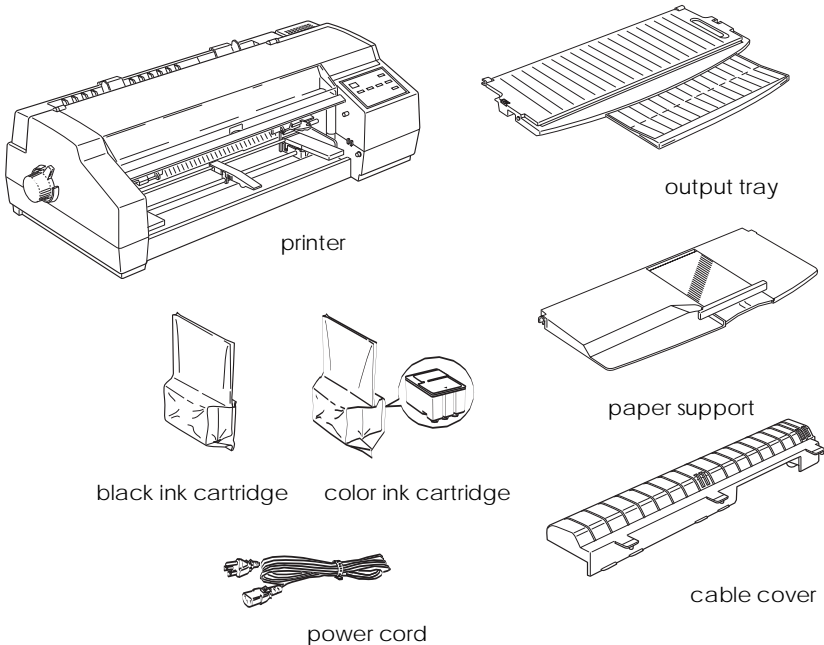
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Unpacking the Printer

Your printer box should contain a CD-ROM, which includes the printer driver software that runs your printer, and the following items:



In some locations, the power cord comes attached to the printer. The shape of the AC plug varies by country; be sure the plug included is the right shape for your location.

The cable cover is needed to prevent the interface cable and power cord from interfering with the paper supply when using continuous paper.

Remove all protective materials packed with your printer before you set it up and turn on the power. Follow the instructions on the sheet inserted with the printer to remove these materials. Save all packaging and protective materials in case you need to transport the printer later.

Choosing a Place for the Printer

Follow the guidelines listed below when selecting a location for your printer.

- ❑ Place the printer on a flat, horizontal, stable surface. The printer will not operate properly if it is tilted or at an angle.
- ❑ Place the printer so that it can be connected easily to the computer or the network interface cable.
- ❑ Avoid using or storing the printer in places subject to rapid changes in temperature and humidity. Also keep it away from direct sunlight, strong light, or heat sources.
- ❑ Avoid places subject to shocks and vibrations.
- ❑ Place the printer near a wall outlet where the plug can be easily unplugged.

Note for French-speaking users:

Placez l'imprimante près d'une prise de contacte où la fiche peut être débranchée facilement.

- ❑ Avoid electrical outlets controlled by wall switches or automatic timers. Also, avoid outlets on the same circuit as large motors or other appliances that can cause fluctuations in line voltage.
- ❑ Keep the entire computer system away from potential sources of electromagnetic interference, such as loudspeakers or the base units of cordless telephones.
- ❑ Use a grounded power outlet; do not use an adapter plug.
- ❑ Clear the paper path of any obstruction before printing on continuous paper.

Note the following precautions when using a printer stand:

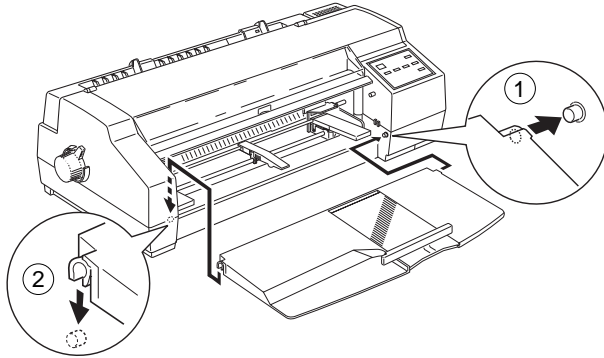
- ❑ Use a stand that can support at least 30.0 kg (66.0 lb) for this printer.
- ❑ Never use a stand that tilts the printer. The printer should always be kept level.
- ❑ Position your cables so they do not interfere with paper feeding; where possible, secure them to a leg of the printer stand.

Attaching the paper support and the output tray

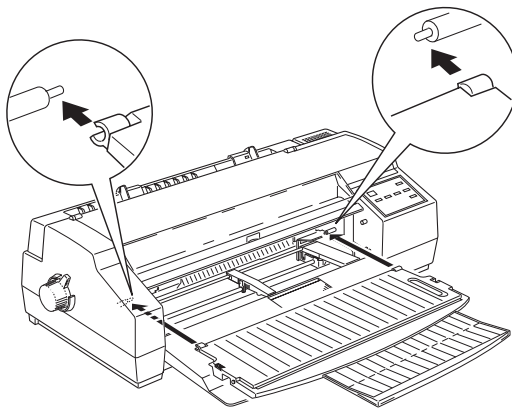
You should install the paper support and the output tray before you begin using the printer. To install these items, follow the steps below.

2


1. Attach the paper support by placing the notch on the right side of the support over the mounting post of the printer. Then push the left side notch onto the left mounting post.

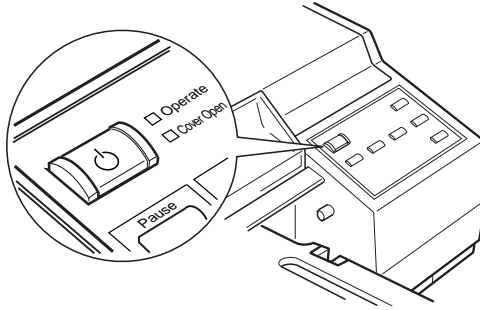


2. Attach the output tray by fitting the notches on the tray over the mounting posts as shown below.



Plugging in the Printer

1. Make sure the printer's  Operate button is turned off. It is off when the surface of the button is even with the button protectors beside the button, as shown.



2. Check the label on the back of the printer to make sure the voltage required by the printer matches that of the electrical outlet you will be plugging it into. Also, make sure that you have the correct power cable for your power source.



Caution:

It is not possible to change the printer's voltage. If the rated voltage and your outlet voltage do not match, contact your dealer for assistance. Do not plug in the power cord.

3. If the power cord is not attached to the printer, connect it to the AC inlet on the back of the printer.
4. Plug the power cord into a properly grounded electrical outlet.

Installing the Ink Cartridge for the First Time





Warning:

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

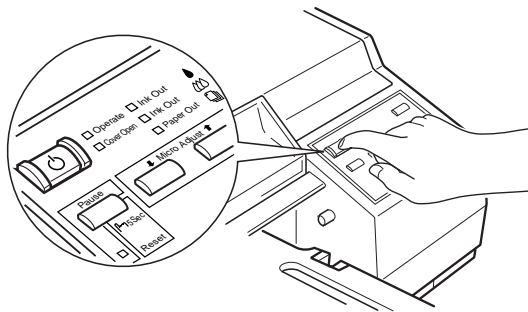
2

To install the ink cartridges for the first time, see the following. To replace an empty ink cartridge, see Chapter 9, “Maintenance and Transportation.”

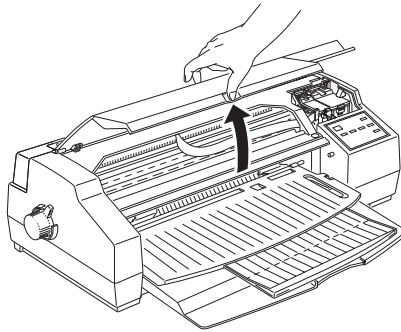
1. Press the  Operate button to turn on the printer. The  Operate light comes on and the print heads automatically move slightly to the left, which is the ink cartridge install position. The Pause light begins to flash.

Note:

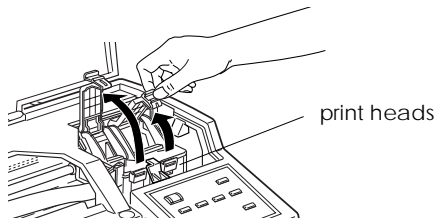
The print heads automatically move to the ink cartridge install position only the first time you turn on the printer.



2. Open the printer cover. The Cover Open light comes on.



3. Lift up the two ink cartridge clamps.



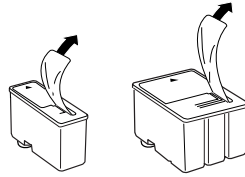
Caution:

Do not try to move print heads by hand. Doing so may damage the printer.

4. Open the ink cartridge packages that come with your printer. Next, remove only the yellow tape seals from each cartridge as shown below.

Note:

To ensure that the ink charging process works properly, be sure to use the ink cartridges that come with your printer the first time you install the ink.

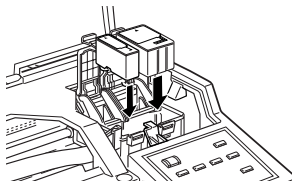


black ink cartridge color ink cartridge



Caution:

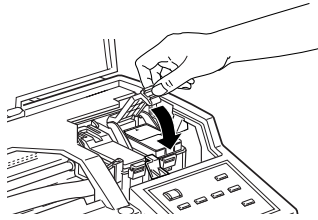
- You must remove the yellow tape seals from the cartridges. If you attempt to print using a cartridge with this tape seal still attached, the cartridge may become unusable.
 - Do not remove the tape seals from the bottom of the cartridges; otherwise, ink will leak.
5. Lower the cartridges into their holders with the labels face-up and the arrow mark pointing to the rear. The color cartridge, which is larger, goes on the right and the black ink cartridge goes on the left.



Note:

Install both ink cartridges. If either of the cartridges is not installed, the printer will not work.

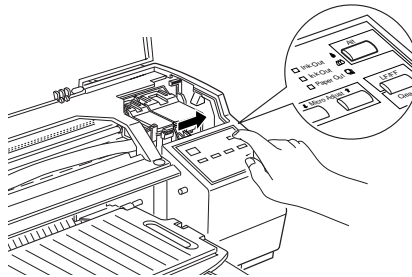
6. Press the ink cartridge clamps down until they lock in place.



Caution:

Once you install the ink cartridges, do not open their clamps again until you replace the ink cartridges. Otherwise, the cartridges may become unusable.

7. Press the Alt button. The printer moves the print heads and begins charging the ink delivery system.



Caution:

During the ink charging process, the Pause light flashes. Never turn off the printer while the Pause light is flashing.

Note:

Even if you do not press the Alt button, the printer moves the print heads and begins the ink charging process about 60 seconds after you install the ink cartridges.

The ink charging process takes several minutes to complete, during which time the printer produces a variety of mechanical sounds. These sounds are normal. When the ink delivery system has been charged, the print heads return to their home position.

8. Close the printer cover.

The number of pages a black ink cartridge can print varies according to the amount of text and graphics you print. The life of a color ink cartridge depends on the amount and the number of colors used in your documents.

Note:

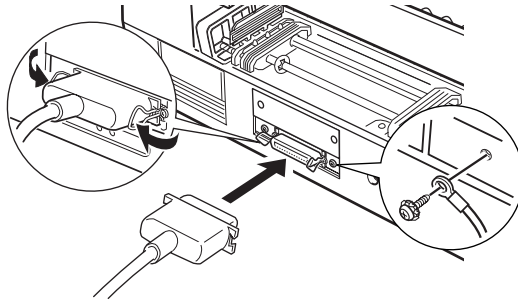
To replace an ink cartridge, see “Replacing an Ink Cartridge” in Chapter 9.

Now you are ready to connect the printer to your computer. To connect the printer to your PC, see the following section. To connect it to your Macintosh, see page 2-22.

Connecting the Printer to Your PC

Connecting the printer to your computer using the built-in parallel interface requires a shielded, twisted-pair parallel cable. Follow the steps below to make the connection:

1. Make sure both the printer and computer are turned off.
2. Plug the cable connector 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, connect it to the ground connector below the interface connector.



3. Plug the other end of the cable into the computer's parallel interface. If there is a ground wire at the computer end of the cable, connect it to the ground connector at the back of the computer.

See the next section for instructions on installing the printer software. You must install the printer software before using your printer.

Installing the Printer Software in your PC

After connecting the printer to your computer, install the Windows printer software. It is included in the printer software CD-ROM or floppy disks shipped with your printer.

Your printer software includes:

- Printer Driver**
The printer driver gives you complete control over your printer. With it, you can fine-tune settings such as print quality and speed, media type, and paper size.
- Utilities**
The Status Monitor utility helps you check the current status of your printer from your display. The Nozzle Check, Head Cleaning, and Print Head Alignment utilities help you keep your printer in top operating condition.
- Online Help**
Online help gives you instant on-screen access to detailed information and instructions on how to use your printer.

If you are using the floppy disk version of the software, before you begin installation, make backup copies of the EPSON printer software disks. If you wish to make a floppy disk version of the printer software on your CD-ROM, you can use the Driver disk creation utility included on the CD. See page 2-16 for Windows 95, or page 2-19 for Windows 3.1.

The following section explains how to install the printer software for Windows 95. If you are using Windows 3.1, see page 2-19 for instructions.

For Windows 95

Follow these steps to install the printer software using Windows 95 plug-and-play capabilities.

Note:

To install the printer software using Windows 95 plug-and-play capabilities, your computer's parallel port must be an IEEE 1284 compatible, bidirectional parallel port. See your computer documentation for more information.

1. Make sure the printer is connected to the computer's parallel port.
2. Turn off your printer and computer, if necessary.
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, please follow the procedure on page 2-16 instead.



5. Make sure your printer model name is displayed on the screen. Then click the Driver from disk provided by hardware manufacturer button. Do not select any of the other buttons.
6. Click OK. You see the Install From Disk screen.
7. Insert the printer software CD shipped with your printer in the CD-ROM drive. Depending on the country, the CD-ROM may contain multiple-language versions of the printer software. First try typing D:\Windows and clicking OK. If an error message appears, click OK to return to the Install From Disk screen. Type D:\ then specify your preferred language by typing English, Francais, German, Italian, Portugal, or Spanish, followed by \Windows. Click OK. (If your CD-ROM drive uses a drive letter other than “D”, substitute the appropriate letter.)

If you use the floppy disk version, insert it in a disk drive. If the drive you are installing from is displayed on the screen, click OK. Otherwise, change the drive letter in the Copy manufacturer’s files from box and click OK.

8. At the next screen you can type a unique name for the printer in the Printer name box. We recommend that you keep the model name as shown. The program will copy the files to your hard disk and add an icon to the Printers folder using the printer name you assign.

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

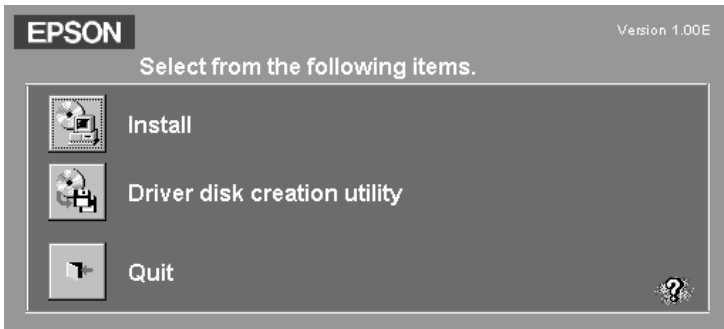
9. Click the Finish button.

The printer software that controls your printer is now installed. For information on accessing and using the software, see Chapter 3, “Starting to Print with Windows.”

Installing the software while running Windows 95

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

1. Make sure Windows 95 is running and the printer is on.
2. Insert the printer software CD shipped with your printer in the CD-ROM drive. Click Install in the dialog box that appears, shown below.



If this dialog box does not appear when you insert the printer software CD, double-click the My Computer icon, then double-click the CD-ROM drive icon (or floppy disk drive icon if using the floppy disk version). If the dialog box shown above still does not appear, double-click the Setup.exe icon. You may need to use the arrows to scroll through the folder to find it.

Note:

If you wish to make a floppy disk version of the printer software included on your CD-ROM, click the Driver disk creation utility button and follow the on-screen instructions.

3. Select your printer icon in the EPSON Printer Utility Setup dialog box.



4. Click OK to start the printer software installation. Follow the message when displayed if you are installing from floppy disks. When the installation is complete, click OK again.

Your printer software is now installed. For information on opening and using the software, see Chapter 3, “Starting to Print with Windows.”

Using your printer on a Network with Windows 95

To use your printer on a network, you need to set up your printer as a network printer. Follow these steps:

1. Double-click the My Computer icon.
2. Double-click the Printers folder.
3. Right-click the icon of your printer, and click Properties. Be sure to right-click.

4. Click the Details tab. The following window appears:



5. Click the Add Port button, then specify the network path to the printer. Click OK.

Note:

If you want to print from DOS applications as well as from Windows applications, click the Capture Printer Port button instead of the Add Port button. Click anywhere in the Device box and select the printer port your printer is connected to, then specify the network path to the printer. Make sure Reconnect at logon is selected, then click OK.

6. After you have made your settings on the Details menu, click Start, point to Programs and Epson, then click Spool Manager4. The Spool Manager window opens.
7. Select your printer, click the Queue menu, then click Setup. The Queue setup window opens.

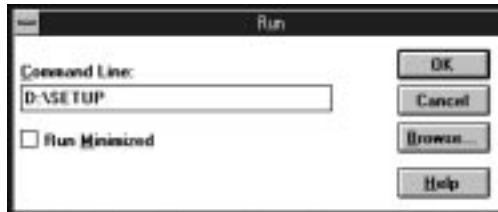
8. Make sure the Use Print Manager for this port option is on; it is on if the box contains a check mark. Then click OK.

Now you can use your printer on a network.

For Windows 3.1

Follow these steps to install the software using Windows 3.1:

1. Make sure Windows 3.1 is running and the Program Manager window is open.
2. Insert the Printer Software CD shipped with your printer in the CD-ROM drive. (If you use the floppy disk version, insert it in a floppy disk drive.)
3. In the File menu, select Run. You see the Run dialog box. In the Command Line box, type D:\SETUP. If the CD-ROM drive you are using is not drive D, substitute the correct letter. If you are installing from floppy disks, type A:\SETUP (or B:\SETUP).



Note:

If you wish to make a floppy disk version of the printer software included on your CD-ROM, type EPSETUP instead of SETUP. In the dialog box that appears, click the Driver disk creation utility button and follow the on-screen instructions.

4. Click OK. You see the EPSON Printer Utility Setup dialog box.



5. Select your printer name and click OK. The installation program begins copying the printer software files. Follow the message when displayed if you are installing from floppy disks.

After a few moments, the installation program creates the EPSON program group in Windows.

6. When the installation is complete, click OK to exit the installation program.

The installation program automatically selects this printer as the default printer for Windows applications.

The printer software that controls your printer is now installed. For information on accessing and using the software, see Chapter 3, “Starting to Print with Windows.”

For DOS users

Most DOS software programs include drivers for EPSON ESC/P 2™ printers. You can select these drivers and take advantage of your printer's advanced built-in scalable fonts and graphics handling.

Most DOS programs require you to select from a list of printers in order to install the printer driver. You should select your printer to take advantage of all your printer's advanced features. If your printer is not included in the list, contact your software manufacturer to obtain an update.

If your printer driver is not listed, pick from the first available printer in the list below.

When printing with black ink only:

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

When printing with black and color inks, choose one of the following:

- EPSON Stylus 1500
- EPSON Stylus PRO (XL/XL+)
- EPSON Stylus COLOR (500/II)
- LQ-2550
- LQ-1060
- DLQ-3000

Note:

The printers listed above do not provide all EPSON Stylus COLOR 1520 features, such as 720-dpi printing and MicroWeave.

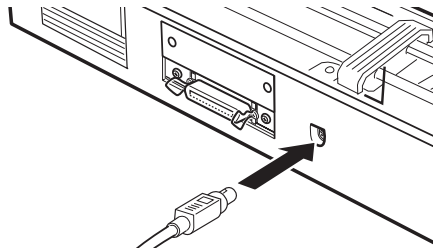
Connecting the Printer to Your Macintosh

The method you use to connect the printer to your Macintosh depends on whether you want to connect directly to the printer using the printer's built-in serial interface, or you want to connect the printer to a network using an optional interface card (see the next page).

Using the built-in serial interface

To use the printer's built-in serial interface, you will need an Apple System Peripheral-8 cable. Read the following steps to connect the printer to your Macintosh.

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.



3. Connect the other end of the interface cable to either the modem port or printer port on the Macintosh. The ports are marked with the following icons.



modem port



printer port

4. Turn on the printer by pressing the  Operate button.

5. Turn on your Macintosh.

See “Installing the Printer Software in Your Macintosh” on the next page for instructions on installing the printer software. You must install the printer software before using your printer.

Using an optional EPSON interface card

An optional LocalTalk™ or Ethernet interface card lets you use your printer on an AppleTalk network.

To use the LocalTalk Interface Card (C82312*), you will need two LocalTalk Locking Connector Kits (DIN-8 version). Attach a connector box to the AppleTalk interface on the printer and to the printer port on the Macintosh. Then attach the LocalTalk cable between the two connector boxes. See the user’s guide that comes with the connector kits for more details.

To use the Ethernet Interface Card (C82331*), see the user’s guide that comes with the card for setup information.

For information on installing these interface cards in the printer, see Appendix B, “Using Optional Interfaces.”

Note:

The asterisk in the product number is a substitute for the last digit, which varies by country.

Installing the Printer Software in Your Macintosh

Always use the EPSON Stylus COLOR 1520 Macintosh printer software when printing with your printer. This software is specially designed to allow easy access to all of the printer's features.



Caution:

Turn off all virus protection programs before you install your printer software.

Installing the printer software

Note:

If you are using the floppy disk version of the software, before you begin installation, make a backup copy of the EPSON Macintosh printer software disk.

Follow the steps below to install the printer software procedure:

1. Turn on your Macintosh and insert the EPSON printer software CD shipped with your printer in the CD-ROM drive (If you use the floppy disk version, insert it in a disk drive.)

The EPSON printer software disk opens automatically and, depending on the country, displays either a single installer icon or separate folders containing installer icons for several languages. Double-click the Installer icon if it is displayed, or open the folder for your preferred language, then open the Disk 1 folder and double-click the installer icon inside it.

2. After the initial screen appears, click Continue to advance to the following dialog box, where you can choose to install all or some of the software components included on your printer software CD. For information on the included software, see the next page.



3. If you want to install all of the printer software components included on your printer software CD-ROM or floppy disks, make sure the disk on which you want to install the software is displayed in the Destination Disk box, then click Install.

If you are low on disk space, select Custom Install from the pop-up menu and click EPSON Stylus Printer Driver Package plus any other components you need to install. The first time you install your printer software, you must at least select EPSON Stylus Printer Driver Package. If you are going to use your printer on an AppleTalk network, install EPSON Namer as well. Confirm the destination for installation, then click Install.

Note:

Click the  icon to get information on each component.

4. When installation finishes, click Restart to complete the installation and restart your computer and activate the new software.

If you are going to use the optional LocalTalk Interface Card (C82312*) or Ethernet Interface Card (C82331*), you need to assign a name to your printer using the EPSON Namer utility as described on page 2-28. If you are using a serial interface, skip to “Selecting your printer with the Chooser” on page 2-29.

Printer software components

Your printer software CD-ROM contains the following software components:

EPSON Stylus Printer Driver Package

- EPSON Stylus (EX)**
This is the printer driver software that runs your printer if you are using the serial interface.
- EPSON Stylus (AT)**
This is the printer driver software that lets you use the printer on an AppleTalk network.
- EPSON Monitor2**
Monitors and manages background printing jobs. You must turn on background printing in the Chooser to use this utility. For more information, see “Using the EPSON Monitor2 Utility” on page 6-26.
- ColorSync™ 2.0 and Profiles**
Matches the colors in your printout with the colors displayed on your monitor automatically. 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.

- ❑ **StatusMonitor**
Keeps track of the current status of your printer, and alerts you when printer errors occur. You can open it from the Utility menu in the printer driver software. For more information, see “Using EPSON Printer Utilities” in Chapter 6.
- ❑ **Nozzle Check**
Checks the print heads for clogging. You can open this utility from the Utility menu in the printer driver software. For more information, see “Using EPSON Printer Utilities” in Chapter 6.
- ❑ **Head Cleaning**
Cleans the print heads to maintain the best print quality. You can open this utility from the Utility menu in the printer driver software. For more information, see “Using EPSON Printer Utilities” in Chapter 6.
- ❑ **Print Head Alignment**
Adjusts the print heads so that vertical and horizontal lines are aligned. You can open this utility from the Utility menu in the printer driver software. For more information, see “Using EPSON Printer Utilities” in Chapter 6.

Power Macintosh Extension Module

Increases the printing speed especially when printing CAD documents or line art. For more information, see your Macintosh user’s guide.

EPSON Namer

Assigns a unique name to the printer so that you can use it on an AppleTalk network.

Assigning a name to the printer

Use the following procedure to assign a name:

1. Double-click the EPSON Namer icon.

The EPSON Namer utility will be located on your hard disk drive if installed. If it has not been installed, insert the printer software CD-ROM into your computer's CD-ROM drive and open the utility from there. (If you use the floppy disk version, insert it in a disk drive and open the utility from there.)

2. Click the EPSON Stylus(AT) icon in the Device Types window.
3. If there are multiple AppleTalk zones at your site, select the zone in which the printer is located.
4. Under New Name, enter a name for your printer. You should assign a name that clearly distinguishes your printer from others on the network.
5. Click Rename and then click Done to quit EPSON Namer.

Selecting your printer with the Chooser

After you install the printer software, you need to open the Chooser to select your printer. You have to choose the printer only the first time you use it or whenever you want to switch to another printer. Your Macintosh will always print using the last printer selected.

If you are using the serial interface, choose your printer driver as described in the following section, “Using the serial interface connection.” If your system is connected to an AppleTalk network, see “Using the AppleTalk connection” on page 2-32.

Note:

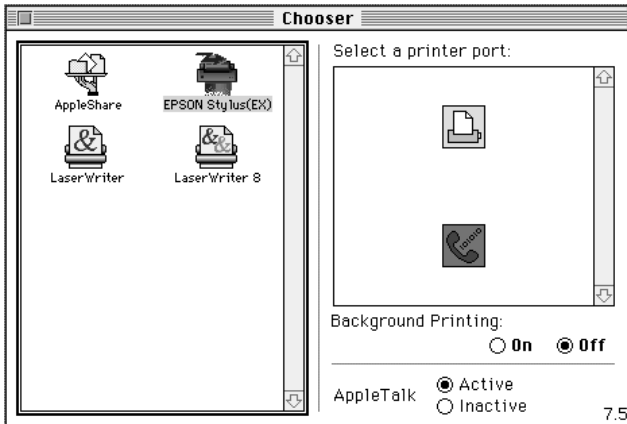
If you are using a Macintosh Quadra 950 or 900, you need to choose Compatible in the Serial Switch dialog box before selecting your printer from the Chooser. To open the Serial Switch dialog box, choose Control Panel from the Apple menu, then choose Serial Switch.

Using the serial interface connection

Follow the steps below to use the serial interface to send print data directly to the printer.

1. Make sure the printer is connected to your Macintosh and turned on.

2. Select the Chooser desk accessory from the Apple menu. This brings up the Chooser dialog box. Then click the EPSON Stylus(EX) icon and the port you are using with your printer.



Note:

If you don't see the EPSON Stylus(EX) icon, use the arrows on the right to scroll through the available icons.

3. If your printer is connected to the Macintosh's printer port and you are not using an AppleTalk network, make AppleTalk inactive by clicking on the Inactive radio button. You may also need to restart your Macintosh to make AppleTalk inactive.

You do not need to make AppleTalk inactive if the printer is connected to the modem port.



Caution:

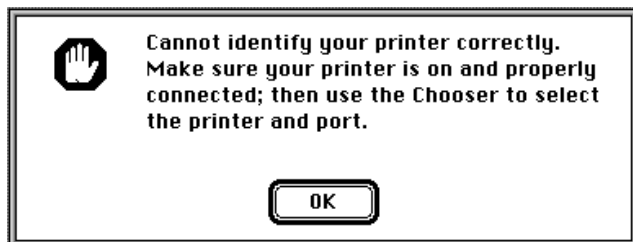
Do not make AppleTalk inactive if the Macintosh is connected to an AppleTalk network. See "Using the AppleTalk connection" on page 2-32 for details.

4. Click the Background Printing radio button to turn background printing on or off.

When background printing is on, you can use your Macintosh while it is preparing a document for printing. You must turn on background printing to use the EPSON Monitor2 utility to manage print jobs. For more information, see “Using the EPSON Monitor2 Utility” on page 6-26.

5. Close the Chooser.

Your Macintosh will check that the printer is connected correctly. If the message below appears, follow the instructions on the screen, click **OK**, and repeat the steps above.



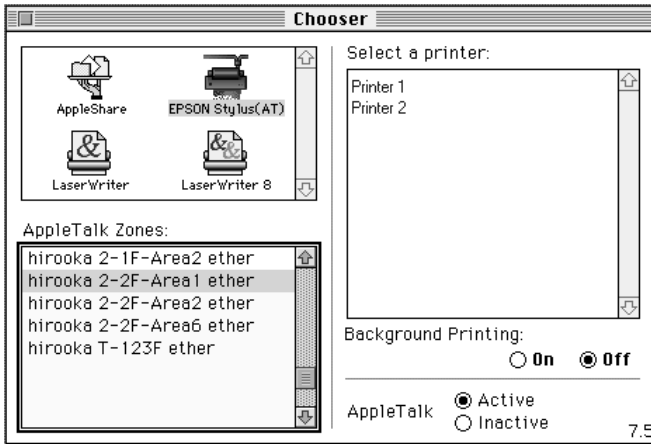
Using the AppleTalk connection

Follow the steps below to use an Apple Talk network connection to send print data to the printer.

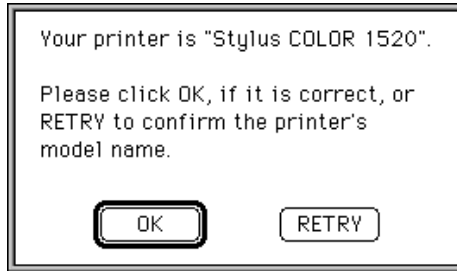
1. Turn on your printer.
2. Select the Chooser from the Apple menu. Click the EPSON Stylus(AT) icon. Select the AppleTalk zone you want to use. A list of all the printers connected to the selected zone appears on the right.

Note:

If you don't see the EPSON Stylus(AT) icon, use the arrows on the right to scroll through the available icons.



3. Click the name you assigned to your EPSON Stylus COLOR 1520. The following dialog box appears and prompts you to confirm the selected printer model name.



4. Click OK if the printer model name is correct.

If your printer name does not appear, make sure the printer is turned on and correctly connected, then click RETRY.

5. Click the Background Printing radio button to turn background printing on or off.

When background printing is on, you can use your Macintosh while it is preparing a document for printing. You must turn on background printing to use the EPSON Monitor 2 utility to manage print jobs. For more information, see "Using the EPSON Monitor2 Utility" on page 6-26.

6. Close the Chooser.

Chapter 3

Starting to Print with Windows

Before Starting to Print	3-2
Loading Paper	3-2
Starting to Print	3-7



Before Starting to Print

Read this chapter after connecting the printer to your computer and installing the printer software.

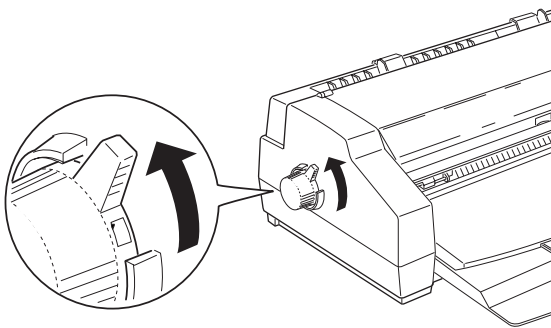
This chapter describes the basic steps you should take every time you print: load paper, check your print settings, then send print data.

Loading Paper

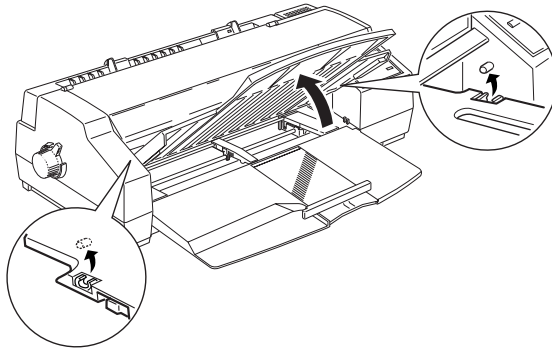
The following procedure describes how to load plain paper into the printer.

You can also print on ink jet paper, transparencies, photo-quality glossy film or paper, envelopes, index cards, continuous paper, banner paper, EPSON Ink Jet Back Light film, and adhesive sheets. For details on using such media, see Chapter 7, “Paper Handling.”

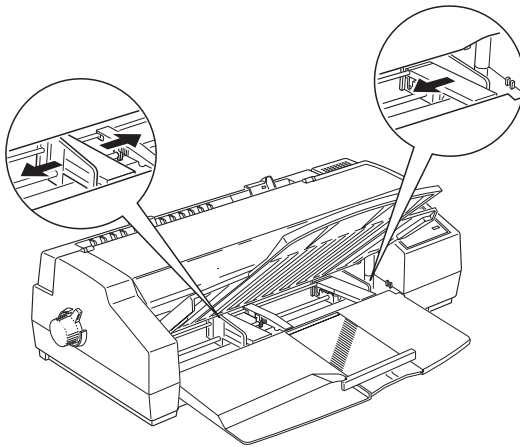
1. Make sure the paper-release lever is set to the single sheet position.



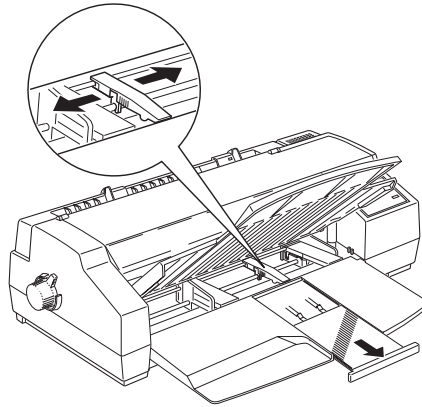
2. Raise the output tray until it locks in the upright position.



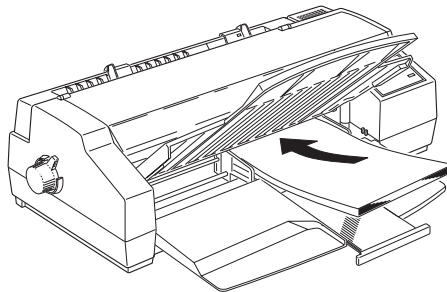
3. Slide the right edge guide to the left until it clicks. Then slide the left edge guide to match the width of your paper.



4. Move the center support to a point midway between the edge guides. Then gently extend the rear edge guide until it stops.



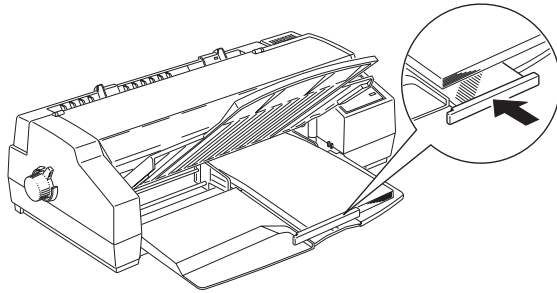
5. Fan a stack of paper; then tap it on a flat surface to even the edges.
6. Load the stack of paper, printable side down, all the way into the sheet feeder. Make sure the right edge of the stack is against the right edge guide. Next, slide the left edge guide against the left edge of the paper.



Note:

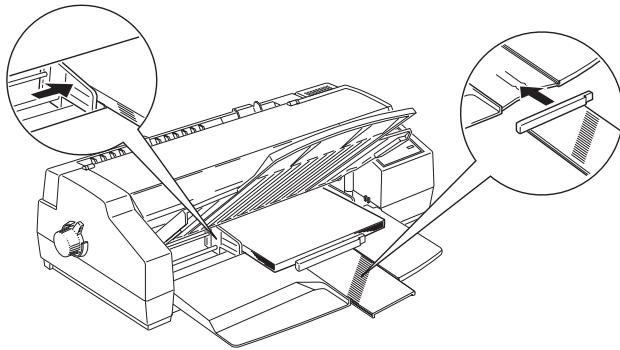
The sheet feeder can hold up to 100 sheets of 17-lb or 64g/m² plain paper. Do not load paper above the arrow mark, which is located on the inside surface of the edge guide.

7. Adjust the rear edge guide to match the length of your paper.



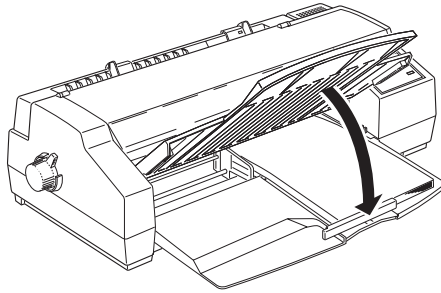
3

If you load paper with the long edge first, the rear edge guide may not match the length of your paper. In this case, remove the rear edge guide and re-insert it as shown below.



Windows

8. Lower the output tray to the printing position. Make sure that the rear edge guide of the paper tray is positioned under the output tray. The rear edge guide must be under the output tray to allow room for the paper loaded in the sheet feeder.



Note:

If the rear edge guide is not positioned under the output tray, a paper jam may occur.

For more about printing on special paper, see Chapter 7.

Starting to Print

To get started printing right away, follow the basic printing method explained below, which is typical for many Windows applications. The actual way you print may vary depending on the application you use. See your application manual for details.

Note:

While many Windows applications override the settings made with the printer driver, some do not, so you must verify the settings to get the results you expect.

1. From your application, open the document you want to print.
2. Click Print on the File menu. The Print dialog box (or a similar dialog box) appears.
3. Make sure your printer is selected and then click Printer, Setup, Properties, or Options. You may need to click a combination of these buttons. The printer software window appears.



4. Click the Main tab if necessary, and make sure the Mode option is set to Automatic.

Note:

When Automatic is selected, the printer software makes all of the detailed settings according to the Media Type and Ink settings you make.

5. Click anywhere in the Media Type box, and select the media you loaded in the printer. If you don't see your media in the list, use the arrow on the right to scroll through the list. See "Making the Media Type Setting" on page 4-10 for more information.
6. Select Color as the Ink setting if your document includes color. Select Black if you are printing black text only, a draft, or if you want colors to print as varying shades of gray.
7. Click the Paper tab. The Paper menu appears.



8. Select the paper source from which you are loading paper from the Paper Source list. Your printer has a built-in sheet feeder, tractor feeder, and manual feed slot. To print on EPSON banner paper, choose Manual Feed Slot (Banner).
9. Select the size of the paper you loaded in the printer from the Paper Size list. If you don't see your paper size in the list, use the arrow on the right to scroll through the list.

Note:

If your paper size is not included in the list, select User Defined and enter the paper size in the dialog box that appears. For information on the User Defined option, see online help.

10. Make the Orientation setting. The effect of your setting is shown in the display to the left.

Note:

Load envelopes flap edge first with the flap side down when loading from the manual feed slot. Load envelopes flap edge first with the flap side up when loading from the sheet feeder.

11. Click OK at the bottom of the window. You return to the Print dialog box (or a similar dialog box).
12. Click Close, OK, or Print to print. You may need to click a combination of these buttons.

While your document is printing, the EPSON Despooler dialog box appears, showing the printing progress and the status of your printer. If you are printing from Windows 95, this dialog box also displays the Status Monitor.

See Chapter 4 and online help for detailed information on printer driver settings, the EPSON Despooler, and the Status Monitor.

Chapter 4

Using the Printer Software for Windows

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Introducing the Printer Software Functions

The printer software includes a printer driver and printer utilities. The printer driver lets you choose from a wide variety of settings to get the best results from your printer. The printer utilities help you check the printer and keep it in top condition.

The quickest and easiest way to start printing is to leave the Mode option set to Automatic on the printer driver's Main menu. This way you only need to check the Media Type and Ink settings, as described on page 3-7.

Basically, there are three levels of settings: the Automatic setting; the predefined settings, which are predefined but give you more control over printer settings; and the custom settings, which you make to fit your individual needs. These settings are described in detail starting on page 4-5.

To check the condition of the printer or perform a maintenance procedure, see "Using EPSON Printer Utilities" on page 4-14.

Accessing the Printer Software

As explained on the following pages, you can access the printer driver settings and printer utilities contained in your printer software directly from any Windows application, or from My Computer in Windows 95 or Program Manager in Windows 3.1. The print settings made in many Windows applications override similar settings made in the printer driver, so in most cases you should access the printer software from your application to make sure that the settings are appropriate for the document you want to print.

Note:

Online help is available for details about the printer driver settings.

From Windows applications

How you should access the printer software varies depending on the application, application version, and Windows version you are using. Read the following to get a general idea of how to access the software.

From the File menu, choose Print or Print Setup. Click Printer, Setup, Properties, or Options in the dialog box that appears. You may need to click a combination of these buttons.

The Main and Paper menus contain the printer driver settings. The Utility menu contains the printer utilities. Click the tabs at the top of the menus to open the menus.

For information on the printer driver settings, see online help and pages 4-5 to 4-13 in this chapter. See page 4-14 for information on the printer utilities.

From Windows 95

Follow these steps to access the printer software from My Computer.

If you are using Windows 3.1, see the next page.

1. Double-click the My Computer icon.
2. Double-click the Printers folder.
3. Right-click the icon of your printer, and click Properties. Be sure to right-click. The Properties window appears.
4. Click the menu tabs at the top of the Properties window to open the printer software menus. The Main and Paper menus contain the printer driver settings. The Utility menu contains the printer utilities.

For information on the printer driver settings, see online help and pages 4-5 to 4-13 in this chapter. See page 4-14 for information on the printer utilities.

From Windows 3.1

Follow these steps to access the printer software from Program Manager:

1. Open the Main program group and double-click the Control Panel icon.
2. Double-click the Printers icon.
3. Choose your printer from the Installed Printers list.
4. Choose Setup. You see the Main menu of the printer software window. The Main and Paper menus contain the printer driver settings. The Utility menu contains the printer utilities. Click the tabs at the top of the menus to open them.

For information on the printer driver settings, see online help and pages 4-5 to 4-13 in this chapter. See page 4-14 for information on the printer utilities.

Using the Automatic Setting

When Automatic is selected as the Mode setting on the Main menu, the printer driver takes care of all detailed settings according to the Media Type and Ink settings you make (see page 4-10 for details on the Media Type settings). If you leave Mode set to Automatic, the only settings you need to check yourself are the Media Type and Ink settings. Most Windows applications feature paper size and page layout settings which override similar settings on the Paper menu, but if your application does not, you should also check the items on the Paper menu.

4



Note:

If you choose Plain Paper, Photo Quality Ink Jet Paper, Photo Quality Glossy Paper, or Photo Quality Glossy Film as the Media Type setting while Automatic is selected, a slide bar appears in the Mode box that lets you choose Quality or Speed. For most print jobs, leave this set to Speed. Select Quality when print quality is more important than speed.

Online help provides more information about the printer driver settings. See page 4-19 for instructions on using online help.

Windows

Using the Predefined Settings

The predefined settings are provided to help you optimize the print settings for a particular kind of printout, such as presentation documents or images taken by a video or digital camera. You will find the predefined settings in the list below the Advanced button on the Main menu.

To choose a predefined setting, click *Advanced*, then select the most appropriate setting from the list according to the type of document or image you will print.

When you choose a predefined setting, other settings such as *Print Quality*, *Halftoning*, and *Color* are set automatically. Changes are shown in the *Current Settings* display at the bottom of the Main menu. Before printing, be sure to verify the *Media Type* and *Ink* settings, as they may be affected by the predefined setting you select. See page 4-10 for more information on the *Media Type* setting.

The printer driver provides the following predefined settings:

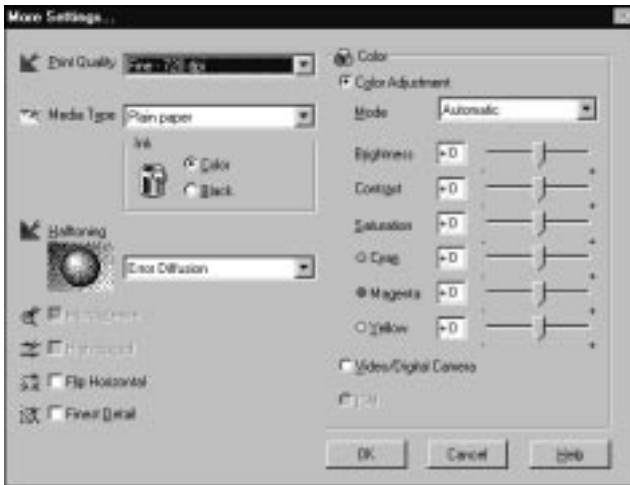
Photo	Good for printing scanned photos
Text/Graph	Good for printing presentation documents such as graphs and charts
Video/Digital Camera	Good for printing images captured using a video or digital camera
Economy	Good for printing drafts of text
ICM	ICM means Image Color Matching. This feature automatically adjusts printout colors to match colors on your screen.

Note:

Selecting ICM or Video/Digital Camera automatically sets the Ink option to Color. Also, some Media Type settings are not available depending on the selected predefined, Print Quality, or Ink setting.

Customizing the Print Settings

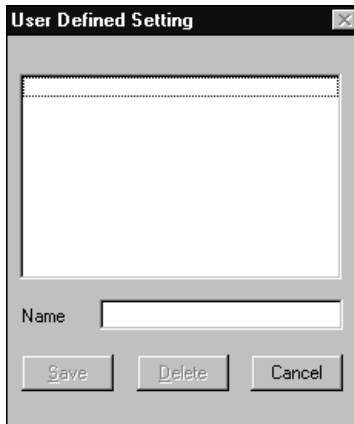
Many users will never need to manually make their own print settings. However, if you need more control over the driver, want to make the most detailed settings available, or just want to experiment, click the **Advanced** button on the **Main** menu and then click the **More Settings** button. The **More Settings** dialog box appears:



Some settings are enabled or disabled depending on the **Print Quality**, **Media Type**, and **Ink** settings you make. To save time and effort, always customize your settings in this order: **Print Quality**, **Media Type**, **Ink**, and then other settings. See the next section for details about making the **Media Type** setting.

After making your settings, click **OK**. Your settings will be applied and you will return to the **Main** menu. To return to the **Main** menu without applying your settings, click **Cancel**. For details on the settings, see online help.

To save your custom settings, click Save Settings on the Main menu. The Custom Settings dialog box appears:



Type a unique name for your custom settings in the Name box, and click the Save button. Your settings will appear in the Advanced settings list under the Advanced button on the Main menu.

Note:

- ❑ *You can not use a predefined settings name for your custom settings.*
- ❑ *To delete a custom setting, click Save Settings on the Main menu, select the setting in the Custom Settings dialog box and then click Delete.*
- ❑ *You can not delete the predefined settings.*

If you change the Media Type or Ink setting when one of your customized settings is selected in the Advanced settings list on the Main menu, the setting selected in the list changes to Custom Settings. The customized setting that was previously selected is not affected by this change. To return to your customized setting, simply reselect it in the settings list.

Making the Media Type Setting

On the Main menu, select the Media Type setting that matches the paper you loaded in the printer. See the following to determine the Media Type setting (shown in bold) for your paper. First find your paper, then click the corresponding Media Type setting.

Note:

If the corresponding Media Type option for your paper is not shown in the Media Type list, change the Print Quality setting in the More Settings dialog box, select Automatic as the Mode setting, or change the predefined setting in the Advanced settings list on the Main menu.

Plain Paper

Plain paper
Envelopes

360 dpi Ink Jet Paper

EPSON 360 dpi Ink Jet Paper (A4)	S041059
	S041025
EPSON 360 dpi Ink Jet Paper (Letter)	S041060
EPSON 360 dpi Ink Jet Paper (A3)	S041065
	S041046
EPSON 360 dpi Ink Jet Paper (Super A3/B)	S041066
	S041047
EPSON 360 dpi Ink Jet Paper (A2)	S041078

EPSON Special Coated Paper for 360 dpi Printing (A4)	S041059 S041025
EPSON Special Coated Paper for 360 dpi Printing (Letter)	S041060
EPSON Special Coated Paper for 360 dpi Printing (A3)	S041065 S041046
EPSON Special Coated Paper for 360 dpi Printing (Super A3/B)	S041066 S041047
EPSON Special Coated Paper for 360 dpi Printing (A2)	S041078
EPSON 360 dpi Banner Paper	S041103
EPSON 360 dpi Ink Jet Banner Paper	S041103
Photo Quality Ink Jet Paper	
EPSON Photo Quality Ink Jet Paper (A4)	S041061 S041026
EPSON Photo Quality Ink Jet Paper (Letter)	S041062
EPSON Photo Quality Ink Jet Paper (Legal)	S041067 S041048
EPSON Photo Quality Ink Jet Paper (A3)	S041068 S041045
EPSON Photo Quality Ink Jet Paper (B4)	S041070 S041044
EPSON Photo Quality Ink Jet Paper (Super A3/B)	S041069 S041043
EPSON Photo Quality Ink Jet Paper (A2)	S041079
EPSON Photo Quality Ink Jet Card (A6)	S041054
EPSON Photo Quality Ink Jet Card (5 × 8 in.)	S041121
EPSON Photo Quality Ink Jet Card (10 × 8 in.)	S041122
EPSON Photo Quality Self Adhesive Sheet	S041106

EPSON Special Coated Paper for 720 dpi Printing (A4)	S041061 S041026
EPSON Special Coated Paper for 720 dpi Printing (Letter)	S041062
EPSON Special Coated Paper for 720 dpi Printing (Legal)	S041067 S041048
EPSON Special Coated Paper for 720 dpi Printing (A3)	S041068 S041045
EPSON Special Coated Paper for 720 dpi Printing (B4)	S041070 S041044
EPSON Special Coated Paper for 720 dpi Printing (Super A3/B)	S041069 S041043
EPSON Special Coated Paper for 720 dpi Printing (A2)	S041079
EPSON Special Coated Index Card for 720 dpi Printing (A6)	S041054
EPSON 720 dpi Banner Paper	S041102
EPSON Photo Quality Banner Paper	S041102

Ink Jet Transparencies

EPSON Ink Jet Transparencies (A4)	S041063
EPSON Ink Jet Transparencies (Letter)	S041064
EPSON Transparency Film (A4)	S041063
EPSON Transparency Film (Letter)	S041064

Photo Quality Glossy Paper

EPSON Photo Quality Glossy Paper (A4)	S041126
EPSON Photo Quality Glossy Paper (Letter)	S041124
EPSON Photo Quality Glossy Paper (A3)	S041125
EPSON Photo Quality Glossy Paper (A2)	S041123

Photo Quality Glossy Film

EPSON Photo Quality Glossy Film (A4)	S041071
EPSON Photo Quality Glossy Film (Letter)	S041072
EPSON Photo Quality Glossy Film (A6)	S041107
EPSON Photo Quality Glossy Film (A3)	S041073
EPSON Photo Quality Glossy Film (B)	S041075
EPSON Photo Quality Glossy Film (Super A3/B)	S041074
EPSON High Quality Glossy Paper (A4)	S041071
EPSON High Quality Glossy Paper (Letter)	S041072
EPSON High Quality Glossy paper (A3)	S041073
EPSON High Quality Glossy paper (Super A3/B)	S041074
EPSON High Quality Glossy paper (B)	S041075

Ink Jet Canvas Cloth

EPSON Ink Jet Canvas Cloth	S041132
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Ink Jet Back Light Film

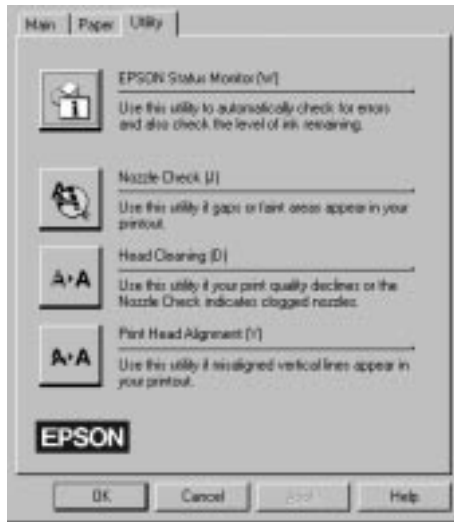
EPSON Ink Jet Back Light Film (A3)	S041131
EPSON Ink Jet Back Light Film (A2)	S041130

Note:

The availability of special media varies by country.

Using EPSON Printer Utilities

EPSON printer utilities allow you to check the current printer status and do some printer maintenance from your screen. To access the utilities, click the Utility tab in the printer software window, then click the icon for the utility you want to use. The utilities are explained briefly below. For more details, see online help.



Note:

The letter in parentheses after the utility name indicates the shortcut key for that utility. Press Alt and the letter on the keyboard to open that utility.

EPSON Status Monitor

The Status Monitor utility helps you to keep track of the printer, and it alerts you if there are any problems. You can also check how much ink is remaining before printing and while printing. When you install the printer software for Windows 95, the Status Monitor is automatically copied to your hard disk.

Note:

The Status Monitor is only available for Windows 95.

The Status Monitor utility is available only when the printer is connected directly to the host computer. You can not use this utility when printing over a network.

When you send a print job to the printer, the Status Monitor will appear in the Despooler dialog box. For information on the Despooler dialog box, see “Understanding the EPSON Spool Manager” on page 4-17.

The Status Monitor provides information about the printer status as shown by the icons 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.

Nozzle Check

You can check the print head nozzles for clogging with this utility. Check the nozzles when you notice a decline in print quality and after cleaning to confirm that the print head nozzles have been cleared. In case the nozzle check indicates the print heads need cleaning, you can access the Head Cleaning utility directly from the Nozzle Check utility. See Chapter 10, “Troubleshooting,” for more information.

Head Cleaning

You can clean the print heads with this utility. You may need to clean the heads if you notice a decline in print quality. Before and after print head cleaning, use the Nozzle Check utility to check whether the print heads need to be cleaned (again). You can access the Nozzle Check utility directly from the Head Cleaning utility. See Chapter 10, “Troubleshooting,” for more information.

Print Head Alignment

This utility aligns the print heads. Use this utility when you notice a misalignment of vertical or horizontal lines. See Chapter 10, “Troubleshooting,” for more information.

Understanding the EPSON Spool Manager

The EPSON Spool Manager is similar to Windows Print Manager. If it receives two or more print jobs at one time, it puts them in a line (with printers on a network this may be called a print queue) in the order received. When a print job reaches the top of the line, the EPSON Despooler sends the job to the printer.

The Spool Manager starts automatically when you print from your application. To access the Spool Manager from Windows 95, click the EPSON Spool Manager icon after it appears on the taskbar. To access the Spool Manager from Windows 3.1, double-click the EPSON Spool Manager icon after it appears at the bottom of your desktop. For more information, see online help.

4

Checking printer status

When you send a print job to the printer, the EPSON Despooler dialog box appears in the lower right portion of your computer screen. This box shows the progress of the current print job and provides printer status information.



Windows

You can control printing from the Despooler dialog box using the stop, pause, and reprint buttons as explained below.



Stop Cancels printing



Pause Pauses printing until you press it again



Reprint Restarts printing from the current page, reprints the whole document, or holds the document for printing later

The Status Monitor at the bottom of the Despooler dialog box only appears if you are using Windows 95. See page 4-15 for more details.

Getting Information Through Online Help

Your printer software has an extensive online help feature that includes detailed information and instructions about printer driver settings and the printer utilities. Online help will answer most of your questions about your printer software.

From Windows applications

To access online help from your application, open the File menu and choose Print or Print Setup. Then click Printer, Setup, Options, or Properties (you may need to click a combination of these buttons) depending on the software you are using. Click the Help button at the bottom of the Main, Paper, or Utility menu for help related to the items on that menu.

If you are running Windows 95, you can get specific help related to any item on a menu by right-clicking the item, then clicking the What's This? prompt.

From Windows 95

To access online help from Start, click the Start button, point to Programs and Epson, and then click EPSON Stylus COLOR 1520 Help. You see the help contents window.

From Windows 3.1

To access online help from Program Manager, open the EPSON program group and click the EPSON Stylus COLOR 1520 Help icon. You see the help contents window.

Chapter 5

Starting to Print with Macintosh

Before Starting to Print	5-2
Loading Paper	5-2
Starting to Print	5-6



Before Starting to Print

Read this chapter after connecting the printer to your computer and installing the printer software.

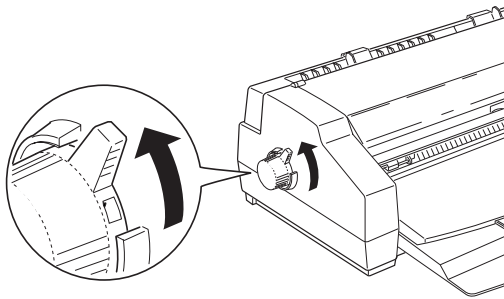
This chapter describes the basic steps you should take every time you print: load paper, check your print settings, then send print data.

Loading Paper

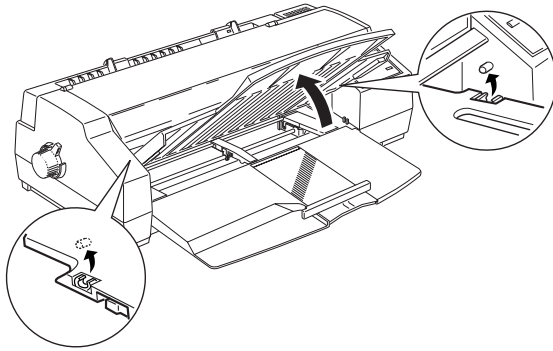
The following procedure describes how to load plain paper into the printer.

You can also print on ink jet paper, transparencies, photo-quality glossy film or paper, envelopes, index cards, continuous paper, banner paper, EPSON Back Light film, and adhesive sheets. For details on using such media, see Chapter 7, "Paper Handling."

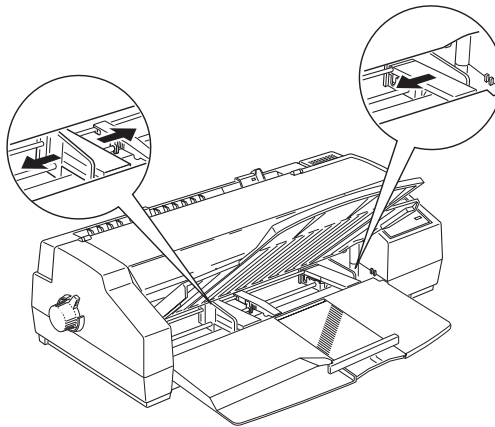
1. Make sure the paper-release lever is set to the single sheet position.



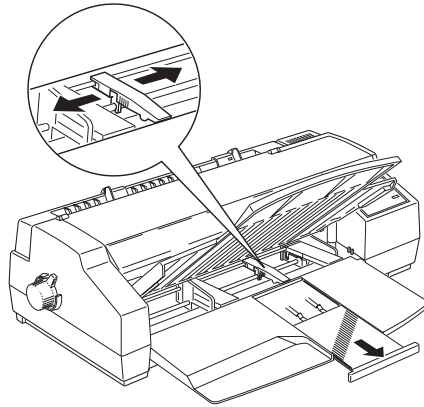
2. Raise the output tray until it locks in the upright position.



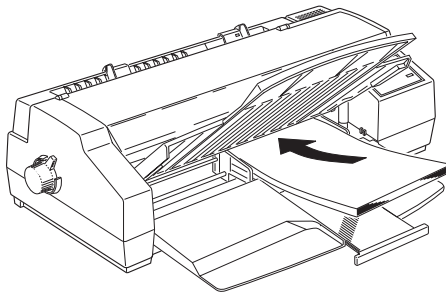
3. Slide the right edge guide to the left until it clicks. Then slide the left edge guide to match the width of your paper.



4. Move the center support to a point midway between the edge guides. Then gently extend the rear edge guide until it stops.



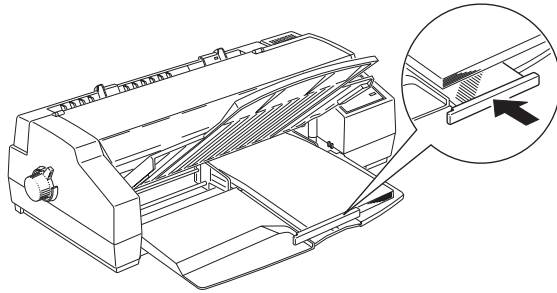
5. Fan a stack of paper; then tap it on a flat surface to even the edges.
6. Load the stack of paper, printable side down, all the way into the sheet feeder. Make sure the right edge of the stack is against the right edge guide. Next, slide the left edge guide against the left edge of the paper.



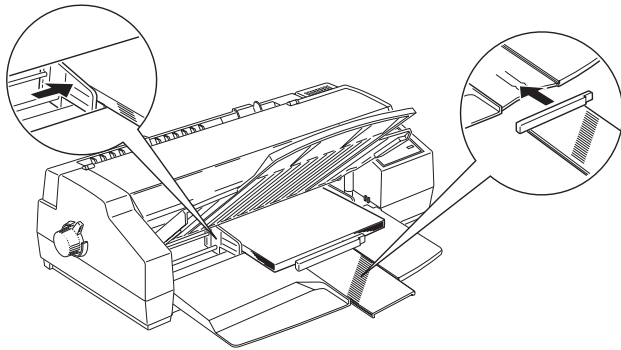
Note:

The sheet feeder can hold up to 100 sheets of 17-lb or 64g/m² plain paper. Do not load paper above the arrow mark, which is located on the inside surface of the edge guide.

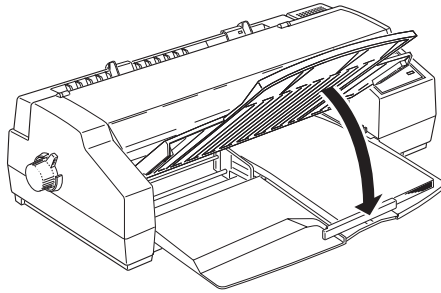
7. Adjust the rear edge guide to match the length of your paper.



If you load paper with the long edge first, the rear edge guide may not match the length of your paper. If this is the case, remove the rear edge guide and re-insert it as shown.



8. Lower the output tray to the printing position. Make sure that the rear edge guide of the paper tray is positioned under the output tray. The rear edge guide must be under the output tray to allow room for the paper loaded in the sheet feeder.



Note:

If the rear edge guide is not positioned under the output tray, a paper jam may occur.

For more about printing on special paper, see Chapter 7.

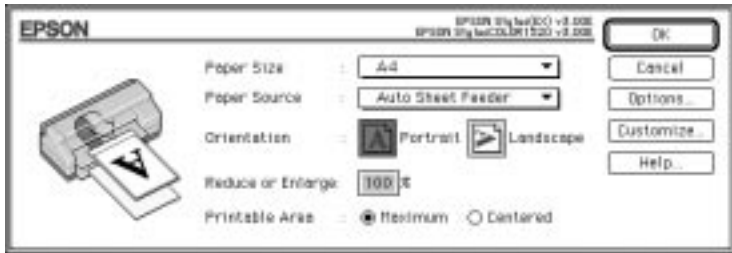
Starting to Print



To get started printing right away, follow the printing method explained below, which is typical of many Macintosh applications. The actual way you print may vary depending on the application you use. See your application manual for details.

Note:

While many Macintosh applications override the settings made with the printer driver, some do not, so you must verify the settings to get the results you expect.

1. From your application, open the document you want to print.
2. Choose Page Setup from the File menu. This brings up the dialog box shown below.



3. Select the paper size you loaded in the printer from the Paper Size list.
4. Select the paper source from which you are loading paper from the Paper Source list. Your printer has a built-in sheet feeder, tractor feeder, and manual feed slot. To print on EPSON banner paper, choose Manual Feed Slot (Banner).
5. Check the Orientation option for  Portrait or  Landscape orientation.

Note:

Load envelopes flap edge first with the flap side down when loading from the manual feed slot. Load envelopes flap edge first with the flap side up when loading from the sheet feeder.

6. After making your settings, click the OK button to close the Page Setup dialog box.

Note:

You can not print from the Page Setup dialog box. You can only print from the Print dialog box.

7. Choose Print from the File menu. This brings up the dialog box shown below.



8. Make sure the Mode option is set to Automatic.

When Automatic is selected, the printer software determines the best settings according to the Media Type and Ink settings you make.

9. Select the type of paper you loaded in the printer from the Media Type list.
10. Select Color as the Ink option if your document includes color. Select Black if you are printing black text only, a draft, or if you want colors to print as varying shades of gray.
11. Click Print to start printing.

Chapter 6

Using the Printer Software for Macintosh

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Introducing the Printer Software Functions

The printer software includes a printer driver and printer utilities. The printer driver lets you choose from a wide variety of settings to get the best results from your printer. The printer utilities help you check the printer and keep it in top condition.

The quickest and easiest way to start printing is to leave the Mode option set to Automatic in the Print dialog box. This way you only need to check the Media Type and Ink settings, as described starting on page 6-3.

Basically, there are three levels of settings: the Automatic setting; the predefined settings, which are predefined but give you more control over printer settings; and the custom settings, which you make to fit your individual needs. These settings are described in detail below.

To check the condition of the printer or perform a maintenance procedure, see “Using EPSON Printer Utilities” on page 6-22.

Using the Automatic Setting

When Automatic is selected as the Mode setting on the Main menu, the printer driver takes care of all detailed settings according to the Media Type and Ink settings you make (see page 6-3 for details on the Media Type settings). Most users will never have to change this setting. However, if your application program does not give you enough control over the printout, you may want to experiment with the predefined settings or make your own custom settings. See page 6-7 for information on the predefined settings, and page 6-9 for information on making custom settings.

To access the Print dialog box, click Print on the File menu of your application or click Options in the Page Setup dialog box. The Print dialog box appears:



Note:

If you choose Plain Paper, Photo Quality Ink Jet Paper, Photo Quality Glossy Paper, or Photo Quality Glossy Film as the Media Type setting while Automatic is selected, a slide bar appears in the Mode box that lets you choose Quality or Speed. For most print jobs, leave this set to Speed. Select Quality when print quality is more important than speed.

6

Before printing, be sure to verify the Media Type and Ink settings as described below because they also have an effect on the other settings. You may also need to check the Page Setup dialog box for other basic settings such as paper size. See page 6-19 for information on the Page Setup dialog box.

Media Type

Select the Media Type setting that matches the kind of paper you loaded in the printer. See below to determine which Media Type setting (shown in bold) best matches your paper.

Plain Paper

- Plain paper
- Envelopes

Macintosh

360 dpi Ink Jet Paper

EPSON 360 dpi Ink Jet Paper (A4)	S041059
	S041025
EPSON 360 dpi Ink Jet Paper (Letter)	S041060
EPSON 360 dpi Ink Jet Paper (A3)	S041065
	S041046
EPSON 360 dpi Ink Jet Paper (Super A3/B)	S041066
	S041047
EPSON 360 dpi Ink Jet Paper (A2)	S041078
EPSON Special Coated Paper for 360 dpi Printing (A4)	S041059
	S041025
EPSON Special Coated Paper for 360 dpi Printing (Letter)	S041060
EPSON Special Coated Paper for 360 dpi Printing (A3)	S041065
	S041046
EPSON Special Coated Paper for 360 dpi Printing (Super A3/B)	S041066
	S041047
EPSON Special Coated Paper for 360 dpi Printing (A2)	S041078
EPSON 360 dpi Banner Paper	S041103
EPSON 360 dpi Ink Jet Banner Paper	S041103

Photo Quality Ink Jet Paper

EPSON Photo Quality Ink Jet Paper (A4)	S041061
	S041026
EPSON Photo Quality Ink Jet Paper (Letter)	S041062
EPSON Photo Quality Ink Jet Paper (Legal)	S041067
	S041048
EPSON Photo Quality Ink Jet Paper (A3)	S041068
	S041045
EPSON Photo Quality Ink Jet Paper (B4)	S041070
	S041044
EPSON Photo Quality Ink Jet Paper (Super A3/B)	S041069
	S041043

EPSON Photo Quality Ink Jet Paper (A2)	S041079
EPSON Photo Quality Ink Jet Card (A6)	S041054
EPSON Photo Quality Ink Jet Card (5 × 8 in.)	S041121
EPSON Photo Quality Ink Jet Card (10 × 8 in.)	S041122
EPSON Photo Quality Self Adhesive Sheet	S041106
EPSON Special Coated Paper for 720 dpi Printing (A4)	S041061 S041026
EPSON Special Coated Paper for 720 dpi Printing (Letter)	S041062
EPSON Special Coated Paper for 720 dpi Printing (Legal)	S041067 S041048
EPSON Special Coated Paper for 720 dpi Printing (A3)	S041068 S041045
EPSON Special Coated Paper for 720 dpi Printing (B4)	S041070 S041044
EPSON Special Coated Paper for 720 dpi Printing (Super A3/B)	S041069 S041043
EPSON Special Coated Paper for 720 dpi Printing (A2)	S041079
EPSON Special Coated Index Card for 720 dpi Printing (A6)	S041054
EPSON 720 dpi Banner Paper	S041102
EPSON Photo Quality Banner Paper	S041102

Ink Jet Transparencies

EPSON Ink Jet Transparencies (A4)	S041063
EPSON Ink Jet Transparencies (Letter)	S041064
EPSON Transparency Film (A4)	S041063
EPSON Transparency Film (Letter)	S041064

Photo Quality Glossy Paper

EPSON Photo Quality Glossy Paper (A4)	S041126
EPSON Photo Quality Glossy Paper (Letter)	S041124
EPSON Photo Quality Glossy Paper (A3)	S041125
EPSON Photo Quality Glossy Paper (A2)	S041123

Photo Quality Glossy Film

EPSON Photo Quality Glossy Film (A4)	S041071
EPSON Photo Quality Glossy Film (Letter)	S041072
EPSON Photo Quality Glossy Film (A6)	S041107
EPSON Photo Quality Glossy Film (A3)	S041073
EPSON Photo Quality Glossy Film (B)	S041075
EPSON Photo Quality Glossy Film (Super A3/B)	S041074
EPSON High Quality Glossy Paper (A4)	S041071
EPSON High Quality Glossy Paper (Letter)	S041072
EPSON High Quality Glossy paper (A3)	S041073
EPSON High Quality Glossy paper (Super A3/B)	S041074
EPSON High Quality Glossy paper (B)	S041075

Ink Jet Canvas Cloth

EPSON Ink Jet Canvas Cloth	S041132
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Ink Jet Back Light Film

EPSON Ink Jet Back Light Film (A3)	S041131
EPSON Ink Jet Back Light Film (A2)	S041130

Note:

The availability of special media varies by country.

Ink

If your document includes color, select Color. If you are printing black text, a draft, or if you want colors to print as varying shades of gray, select Black.

Using the Predefined Settings

The predefined settings are provided to help you optimize the print settings for a particular kind of printout, such as presentation documents or images taken by a video or digital camera.

The predefined settings appear in a list located between the More Settings and Save Settings buttons in the Print dialog box. This list is called the Advanced settings list because it is enabled when you click the Advanced button.

To select a predefined setting, click the Advanced button, then click in the Advanced setting list and select a setting according to the type of document or image you want to print.

When you choose a predefined setting, other settings such as Print Quality, Halftoning, and Color are set automatically. Changes are shown in the Current Settings display on the right side of the Print dialog box. Before printing, be sure to verify the Media Type and Ink settings, as they may be affected by the predefined settings you select. See the previous section for more information on the Media Type and Ink settings.

The printer driver provides the following predefined settings:

Photo

This setting is best for printing scanned photographs. It increases the contrast in an image.

Changing the Ink setting after Photo is selected returns the settings list to Custom Settings, so always make your Ink setting before you select this option.

Text/Graph

This setting is best for graphics-intensive documents such as charts and graphs for presentations. It intensifies the colors but lightens the midtones and highlights of an image.

Changing the Ink setting after Text/Graph is selected returns the settings list to Custom Settings, so always make your Ink setting before you select this option.

Video/Digital Camera

This setting is best for printing images captured using a video or digital camera. It increases the brightness and sharpness to make printed images clearer.

Note:

Selecting Video/Digital Camera automatically sets the Ink option to Color.

Economy

This setting provides you with faster printing and saves ink. The printer uses less ink by printing fewer dots per character. Choose this setting for rough drafts of text only.

Changing the Ink setting after Economy is selected returns the settings list to Custom Settings, so always make your Ink setting before you select this option.

ColorSync™

This setting automatically adjusts printout colors to match the colors on your screen.

Note:

Selecting ColorSync automatically sets the Ink option to Color.

Customizing the Print Settings

Many users will never need to manually make their own print settings. However, if you need more control over the driver, want to make the most detailed settings available, or just want to experiment, customize your print settings as described below.

Making your settings

1. Click the Advanced button in the Print dialog box.
2. Click the More Settings button. The More Settings dialog box appears. The settings in the More Settings dialog box are explained in detail later in this chapter.



Note:

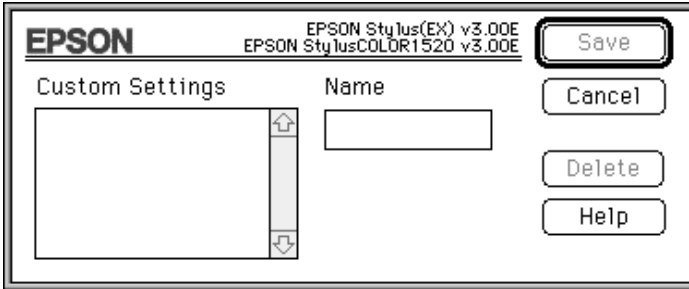
The Print Quality, Media Type, and Ink settings affect the availability of other options, so always make your settings in this order: Print Quality, Media Type, Ink, then other settings.

3. Making your settings, and then click OK. Your settings will be applied and you will return to the Print dialog box. To return to the Print dialog box without applying your settings, click Cancel.

Saving your settings

To save your custom settings as a group, follow these steps:

1. Click Save Settings in the Print dialog box. The Custom Settings dialog box appears.



2. Type a unique name (up to 16 characters) for your custom settings in the Name box.
3. Click Save.

You can save up to 10 groups of settings. You can select your saved group of settings from the Advanced settings list in the Print dialog box.

Note:

- ❑ *You can not use a predefined settings name for your custom settings.*
- ❑ *To delete a custom setting, select the setting in the Custom Settings dialog box and click Delete. You can not delete the predefined settings.*

Choosing your settings

To choose your saved settings, click **Advanced** in the **Print** dialog box, then click in the **Advanced settings** list beside the **More Settings** button and select your saved setting.

If you change the **Media Type** or **Ink** option when one of your saved settings is selected in the **Advanced settings** list, the selection shown in the list returns to **Custom Settings**. The customized setting that was previously selected is not affected by this change. To return to your setting, simply reselect it in the **Advanced settings** list.

Modifying visual effects

If you prefer to modify a document's color or grayscale value (various colors printed in shades of gray), you can adjust these settings and more with the **Color** settings in the **More Settings** dialog box.

You may need to experiment with different settings to get the output you want.

Note:

*When **Color** is selected as the **Ink** setting, all **Color** settings are available. When **Black** is selected, only **Contrast** and **Brightness** are available.*

Color Adjustment

The Color Adjustment settings provide you with a level of control over printed colors that you can not find in many applications.

Mode

There are four color adjustment modes as follows:

Automatic

Analyzes the print data and optimizes color correction for the type of data sent to the printer.

Photo-realistic

Provides output that closely matches the original data. Use this setting for color photographs.

Vivid

Intensifies the colors and lightens the midtones and highlights of an image. Use this setting for presentation graphics, such as charts and graphs.

No Color Adjustment

The printer driver does not enhance the color. Choose this option only when making a ColorSync profile for this printer. When printing normally, choose one of the other modes.

Slide bars

For the settings below, click and drag the slide bar to the right or left with your mouse or type a value in the box next to the slide bar to adjust a setting. The range varies from -25% to +25%.

Brightness

Changes the overall lightness or darkness of an image.

Contrast

Magnifies or minimizes the difference between the bright or dark parts of an image.

Saturation

Modifies the vividness of color. Lower saturation produces colors that are duller than those produced with higher saturation.

Cyan, Magenta, Yellow

Adjusts the amount of each of the three primary colors.

Video/Digital Camera

Increases the contrast and saturation to make printed images clearer using EPSON's intelligent color correction feature. Select this option when printing images taken with a video or digital camera.

When Video/Digital Camera is selected, other settings are dimmed, meaning you can not change those settings.

Note:

Video/Digital Camera is only available when Color ink is selected.

ColorSync™

Select ColorSync when matching printed colors with the colors on your screen is important. It automatically adjusts the color range to print colors the way they appear on your screen. There are two settings, Profile and Rendering Intent. See below for details.

To use this feature, make sure you set the system profile for your monitor. To set your monitor profile, 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:

ColorSync is available only when Color ink is selected.

Profile

Matches the colors in your output with the colors displayed on your monitor. This software provides one profile; EPSON Standard. EPSON Standard is a custom-designed profile that works with your printer.

Some companies may provide other profiles with their products. If installed, these profiles will appear in the Profile list.

Rendering Intent

Transfers the color information using the profile you have chosen from the Profile list.

Perceptual

The best option for reproducing photographs and printouts that are not suited to the other options.

Saturation

The best option for reproducing vivid images. Use this setting for presentation graphics, such as charts and graphics.

Colorimetric

The best option when precise matching of colors is most important, for example when printing a company logo. Colorimetric attempts to reproduce colors the way the eye distinguishes them. Keep in mind that Colorimetric, or any other color matching method, may not always reproduce colors perfectly due to the differences in the way scanners, printers, and other devices process color data. See Appendix A, “Tips for Color Printing,” for more information.

Controlling the printing quality

Use the controls in the More Settings dialog box to adjust the quality of the output. Some settings in this dialog box may be determined by Print Quality and Media Type settings.

Print Quality

The available Print Quality settings are:

SuperFine - 1440 dpi

Select this setting when you want the highest quality output at 1440 dpi. With this setting, we recommend the use of EPSON Photo Quality media. See page 1-9 for a complete list of EPSON special media.

Fine - 720 dpi

Select this setting when you want high-quality output at 720 dpi. With this setting, we recommend the use of EPSON Photo Quality media. See page 1-9 for a complete list of EPSON special media.

Normal - 360 dpi

Select this setting for most types of documents. Use this setting for plain paper, EPSON Ink Jet Transparencies, or EPSON 360 dpi Ink Jet Paper. See page 1-9 for a complete list of EPSON special media.

Economy

Select this option for printing rough drafts of text. This setting speeds printing and saves ink by printing fewer dots per character.

Note:

The Print Quality settings limit the availability of Media Type settings.

Media Type

The available Media Type options are determined by the Print Quality setting. Before selecting the Media Type, make the Print Quality setting.

See page 6-3 for details on the Media Type settings.

MicroWeave

MicroWeave allows your printer to generate superior output because graphics data is re-ordered and printed in finer increments. This technology reduces the possibility of banding, the light horizontal lines that can mar an image.

Note:

- You can select MicroWeave when printing with black ink, but the printing time is significantly longer.*
- MicroWeave is switched off automatically when Economy is selected as the predefined setting in the Print dialog box or as the Print Quality setting in the More Settings dialog box.*

High Speed

This setting activates bidirectional printing, which reduces the time it takes to print an image. Keep in mind that High Speed should be switched off for highest quality printing.

Note:

If vertical lines printed when High Speed is selected appear misaligned, you may need to align the print heads. For details, see “Aligning the Print Heads” on page 10-40.

Flip Horizontal

This feature flips the image 180° along its vertical axis. Printed images and text appear backwards.

Finest Detail

If you select Fine - 720 dpi as the Print Quality setting, you can turn on Finest Detail to print text and line art with very sharp edges. Be aware that it may take considerably longer to print using this feature 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. If you experience problems printing with Finest Detail on, turn it off or add more memory.

Making the Color and Halftoning settings

The following settings control color quality and the halftone pattern.

Ink

Select Color if your printout includes color. Select Black if you are printing black text only, a draft, or if you want colors to print as varying shades of gray.

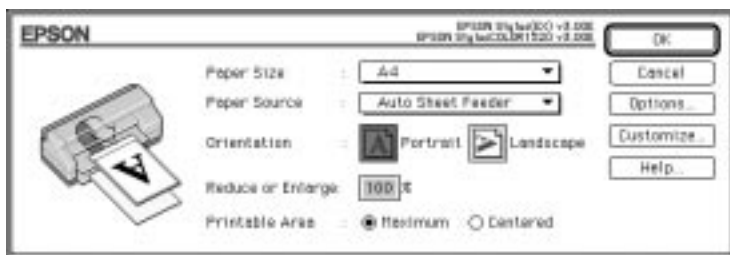
Halftoning

This setting lets you select one of four options: No Halftoning, Error Diffusion, Coarse Dithering, or Fine Dithering.

- Select No Halftoning when printing text only. Although this setting provides faster printing, it should never be used with color.
- Select Error Diffusion when printing photographic images to make edges and colors softer. Error diffusion blends every colored dot in your image with the surrounding colored dots.
- Dithering arranges dots in orderly patterns and is best suited for printing charts, graphs, and other images that require precise, solid areas of bright colors. Select Coarse Dithering for images with limited detail and shading. Select Fine Dithering for images with significant detail but limited shading.

Changing the Paper Size

To change a paper size, choose Page Setup from the File menu of your application. The following dialog box appears:



Paper size

You can use following predefined paper size.

Note:

The paper size and type limits the paper source.

A2	Ledger/US B	A5 Index card
US C	Letter	A6 Index card
Super A3/B	Executive	5" × 8" Index card
B3	Legal	8" × 10" Index card
A3	Half Letter	Fanfold 10" × 11"
B4	Envelope #10	Fanfold 15" × 11"
A4	Envelope DL	
B5	Envelope C5	

Note:

Load envelopes flap edge first with the flap side down when loading in the manual feed slot. Load envelopes flap edge first with the flap side up when loading in the sheet feeder.

Paper Source

Your printer has a built-in sheet feeder, tractor feeder, and manual feed slot. Change this setting according to your paper source. If you plan to print on EPSON banner paper that is longer than 594 mm (length of A2 paper), choose Manual Feed Slot (Banner).

Auto Sheet Feeder
Manual Feed Slot
Manual Feed Slot (Banner)
Tractor Feeder

Orientation

Use this setting to specify the direction of printing on the page,

 Portrait or  Landscape.

Reduce or Enlarge

Use this setting to reduce or enlarge the size of your image.

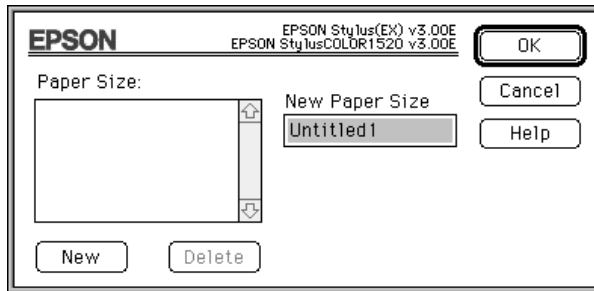
Printable Area

Select Maximum to make your printout as large as possible on the paper. Select Centered to position your printout at equal distances from the edges of the paper.

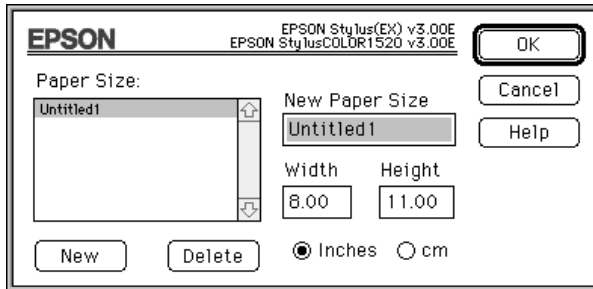
Defining a Custom Paper Size

If your paper size is not included in the paper size list in the Page Setup dialog box, follow the steps below to define a custom paper size.

1. In the Page Setup dialog box, click **Customize**. The following dialog box appears:



2. To define a new paper size, click **New**. The dialog box updates to allow you to enter a name for the new size.



3. Type a name for the paper size in the **New Paper Size** box.
4. Specify the measurement unit as either inches or cm.
5. Type in the width and the height.

6. Click OK. You return to the Page Setup dialog box.

You can define up to eight paper sizes. The paper size names you create will appear in the Paper Size menu in the Page Setup dialog box.

To delete a custom paper size, click Customize in the Page Setup dialog box, select the paper size name from the list in the Custom Paper dialog box, and click Delete.

Using EPSON Printer Utilities

EPSON printer utilities allow you to check the current printer status and do some printer maintenance from your screen. Click Utility in the Print dialog box to view the following:

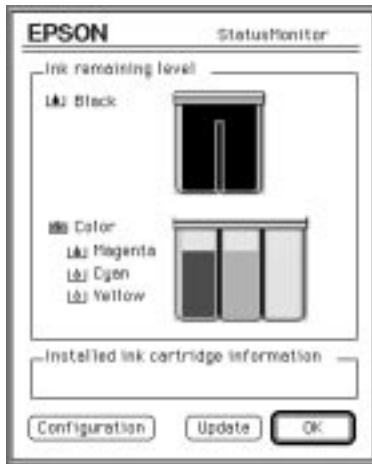


EPSON StatusMonitor

The StatusMonitor utility regularly monitors the printer status. If it detects a printer error, it will inform you with an error message.

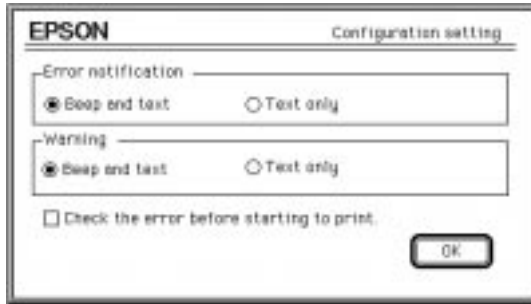
You can also use this utility to check how much ink is remaining before printing.

To use the StatusMonitor, click the EPSON StatusMonitor button in the Utility dialog box. The following dialog box appears:



The StatusMonitor checks the amount of ink remaining when opened. To recheck the ink-level information, click the Update button.

The StatusMonitor provides an error notification if a printer error occurs, and you can choose how that error notification will be given using the Configuration setting dialog box. Click the Configuration button while the StatusMonitor dialog box is open. The following dialog box appears:



Choose the error notification and warning methods, and click OK.

Nozzle Check

Checks whether or not the print head nozzles need to be cleaned. If the print heads need cleaning, you can directly enter the Head Cleaning utility from this utility. After you clean the print heads, you can return to the Nozzle Check utility directly from the Head Cleaning utility.

For detailed information on print head cleaning, see Chapter 10, "Troubleshooting."

Head Cleaning

Cleans the color and black print heads. If print quality declines, use this utility to ensure the nozzles are delivering ink properly. Before and after print head cleaning, use the Nozzle Check utility to check whether the print heads need to be cleaned (again). You can access the Nozzle Check utility directly from the Head Cleaning utility. If the print quality does not improve, repeat print head cleaning.

Note:

- ❑ *To avoid wasting ink, clean the print head only if print quality declines.*
- ❑ *For detailed information on print head cleaning, see Chapter 10 “Troubleshooting.”*

Print Head Alignment

Aligns the print heads so that images print clearly. If you find that your printed image is fuzzy or the vertical or horizontal lines in your printout are not properly aligned, you may need to use this utility.

The Print Head Alignment utility includes both black and color print head alignment features. This utility affects only the print heads.

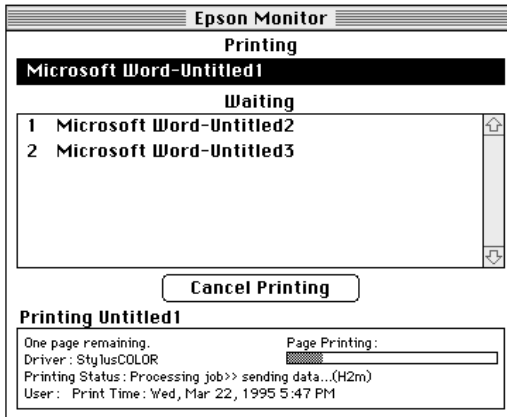
For more details on using this utility, see Chapter 10, “Troubleshooting.”

Using the EPSON Monitor2 Utility

After you send a print job to the printer, you can use the EPSON Monitor2 utility to check on what print jobs are queued for printing. You can cancel any print job in the queue. This utility also shows the status of the job currently being printed.

Before using EPSON Monitor2, you must first turn on Background Printing in the Chooser.

After starting a printing operation, select Epson Monitor2 from the Application menu at the right end of the menu bar. This opens a dialog box similar to the following:



To cancel a print job, click the name of the job and then click Cancel Printing.

Paper Handling

- Printing on Single Sheets 7-2
 - Tips on using the sheet feeder 7-2
 - Loading oversized paper in the sheet feeder 7-3
 - Loading paper manually 7-5
 - Adjusting the loading position 7-8
- Printing on Continuous Paper 7-9
 - Loading continuous paper 7-9
 - Removing continuous paper 7-14
 - Tips on using continuous paper 7-16
 - Adjusting the loading position 7-16
 - Adjusting the tear-off position 7-16
- Switching Between Continuous Paper and Single Sheets 7-18
 - Switching to single sheets 7-18
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- Printing on Special Paper 7-20
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 - EPSON banner paper 7-31
 - EPSON Ink Jet Back Light Film 7-32

Printing on Single Sheets

You can load single sheets up to 432 mm (17 inches) wide using the built-in sheet feeder. Before you load special paper, see “Printing on Special Paper” on page 7-20.

Tips on using the sheet feeder

Follow the tips below to get the best performance when loading paper with the sheet feeder.

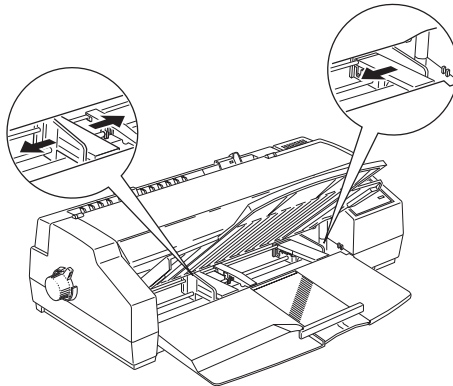
- ❑ Load paper into the sheet feeder before sending data to the printer. When the printer receives data from the computer, it loads a single sheet and begins to print.
- ❑ If the printer runs out of paper during a print job, reload the sheet feeder and then press the **Pause** button to continue printing.
- ❑ Press the **Load/Eject** button if you need to eject a sheet of loaded paper.
- ❑ Whenever possible, use your software to set the top and bottom margins.
- ❑ You can use the printer’s micro-adjust feature to make changes to the paper loading position.
- ❑ If ink smears on your documents, set the adjust lever to the **+** position. For more information, see “Setting the adjust lever” on page 7-20.

Loading oversized paper in the sheet feeder

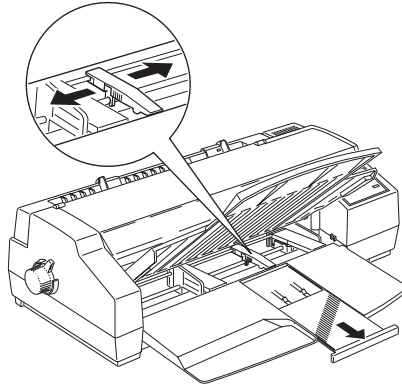
To load paper more than 364 mm wide or 420 mm long, such as Super A3/B, A2, or US C, you need to adjust the edge guides on the sheet feeder and the output tray as follows.

Note:

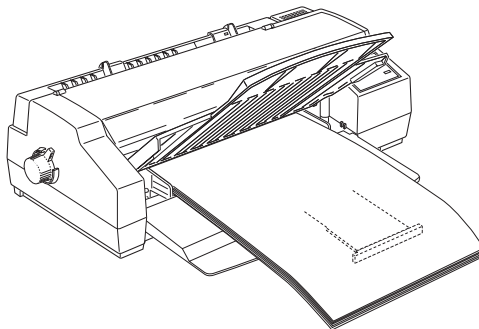
- ❑ *Before you print on A2 or longer paper, leave plenty of room on the table at the front of the printer to hold the printed paper.*
 - ❑ *You can load paper up to 432 mm (17 inches) wide; however, the maximum printable width is 345 mm (13.6 inches).*
 - ❑ *When printing on banner paper, always load it in the manual feed slot. For more information on banner paper, see page 7-31.*
1. Make sure the paper-release lever is set to the single sheet position.
 2. Raise the output tray until it locks in the upright position.
 3. Slide the edge guides on the sheet feeder to match the paper's width. If you plan to print on paper more than 364 mm wide, such as A2 or US C, move the right edge guide to the right as far as it will go. If you plan to print on paper that is 364 mm wide or less, move the right edge guide to the left until it stops.



4. Move the center support to a point midway between the edge guides.
5. Pull out the output tray extension as far as it will go.
6. Gently extend the rear edge guide of the paper support until it stops.

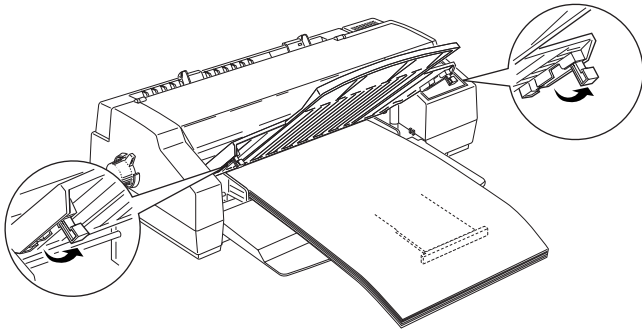


7. Fan a stack of paper; then tap it on a flat surface to even the edges.
8. Load the stack of paper, printable side down, so that the right edge of the stack is against the right side of the sheet feeder. Next, slide the left edge guide against the left edge of the paper.



Note:

- ❑ *Do not load more than 30 sheets of oversized paper in the sheet feeder. Also do not load paper more than half way to the arrow mark, which is located on the inside surface of the edge guide. Otherwise, a paper jam may occur.*
 - ❑ *The maximum width of paper you can load is 432 mm. Load Super A3/B, A2, or US C sized paper short edge first.*
9. Extend the legs under both sides of the output tray. Then lower the tray to the printing position.



Loading paper manually

You can load single sheets of paper from the manual feed slot without removing the paper supply from the sheet feeder. This slot can accommodate single sheets of paper from 105 mm (4.1 inches) to 432 mm (17 inches) wide.

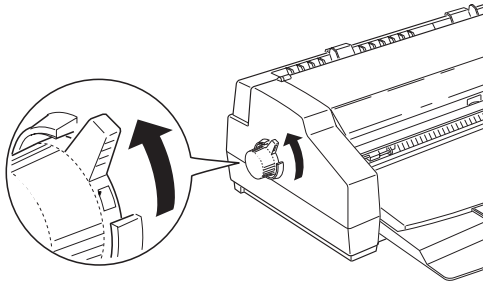
When you load paper manually, you can adjust the loading position using the micro-adjust mode. See “Adjusting the loading position” on page 7-8.

Note:

If you plan to print on banner paper, see “EPSON banner paper” on page 7-31.

Follow these steps to load a single sheet in the manual feed slot:

1. Turn on the printer. Make sure that the paper-release lever is set to the single sheet position.



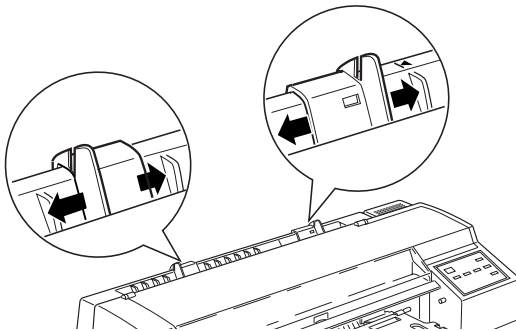
Caution:

Do not insert a sheet of paper before you turn on the printer.

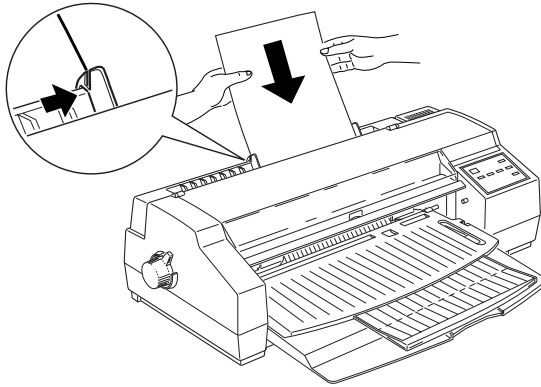
2. Position the right edge guide even with the arrow mark on top of the manual feed guide, and then slide the left edge guide to match the paper's width.

Note:

Before loading paper more than 364 mm wide, such as A2 or US C, move the right edge guide to the right as far as it will go.



3. While holding both edges of the paper, align the right edge of the paper with the right edge guide and load it printable side up in the manual feed slot until it meets resistance.



4. The printer feeds the sheet automatically.

Note:

If the sheet does not feed straight, press the Load/Eject button to eject it. Then try loading it again.

5. Send data from the computer to start printing.

When the printer finishes printing, it ejects the sheet. If the sheet does not eject completely, press the Load/Eject button.

To switch back to the sheet feeder, press the Load/Eject button or send data to the printer without inserting a sheet into the manual feed slot. The printer loads paper from the sheet feeder.

Note:

If your output is smeared, try removing sheets one at a time as they finish printing.



Adjusting the loading position

The loading position is the position of the paper after the printer loads it. If printing is too high or low on the page, change the loading position with the micro-adjust feature.



Caution:

Do not use the knob on the left side of the printer to adjust the loading position. Otherwise, you may damage the printer or cause it to lose the top-of-form position.

1. Make sure the printer is turned on.
2. Press the Load/Eject button to load a sheet of paper from the sheet feeder to the top-of-form position. (You can also adjust the loading position for continuous paper in the same way.)
3. Press the Micro Adjust  button to feed paper forward, or press Micro Adjust  to feed paper backward. (Press either button as many times as necessary until your page is positioned correctly.)
4. Send data from the computer to start printing.

Note:

- Your setting remains in effect until you change it again, even if you turn off the printer.*
- You can set a separate loading position for continuous paper or for paper loaded in the sheet feeder or the manual feed slot with banner mode on or off.*
- The printer has a minimum and maximum loading position, beyond which the paper stops moving.*

Printing on Continuous Paper

The built-in tractor feeder lets you print on continuous paper from 102 mm (4 inches) to 406 mm (16 inches) wide.

You can use the built-in tractor feeder without removing paper from the sheet feeder.

**Caution:**

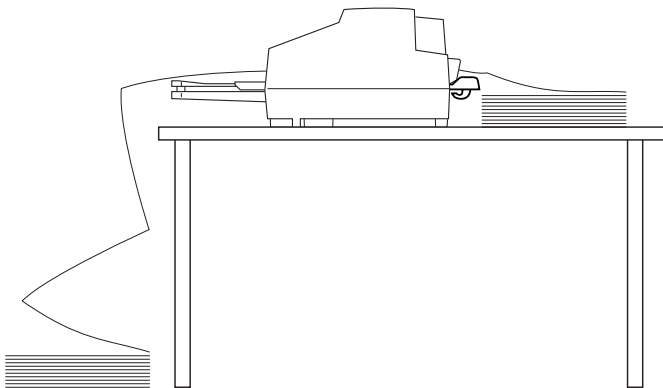
Use the knob on the left side of the printer only to clear paper jams and only when the printer is off. Otherwise, you may damage the printer or change the top-of-form position.

Loading continuous paper

1. Place the supply of continuous paper directly behind the printer so that paper can feed smoothly. Make sure the paper path is not obstructed, and allow enough room for printed pages to be stacked in front of the printer.

Note:

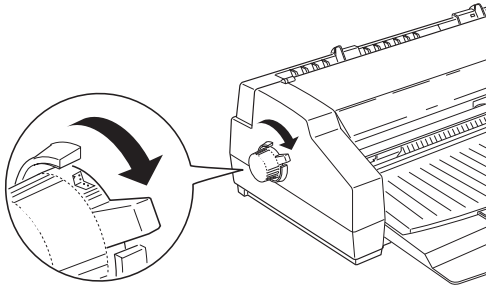
Make sure your paper supply is positioned within 1 meter (3 feet) of the printer.



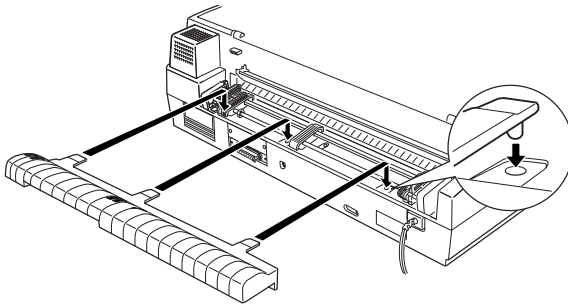
2. Move the paper-release lever to the continuous-paper position.

Note:

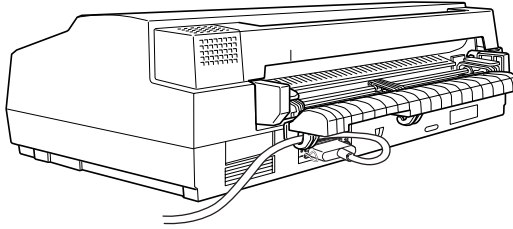
If a single sheet is in the paper path, press the Load/Eject button to eject it before moving the paper-release lever.



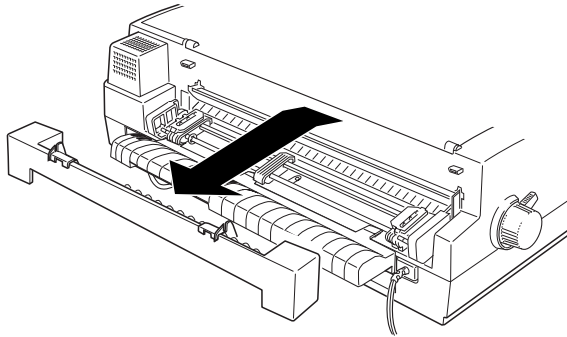
3. Insert the three plugs of the cable cover into the holes as shown below and press down the rear of the cable cover until it locks into place.



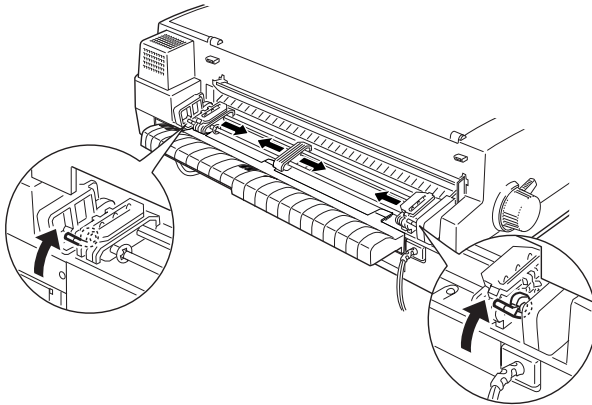
4. Run the interface cable, and power cord if necessary, through the hook(s) under the cable cover as shown below, so the cables do not interfere with the paper supply.



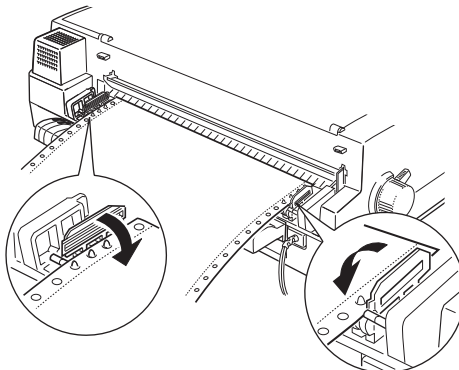
5. Hold the manual feed guide with both hands and gently lift it up and off the printer.



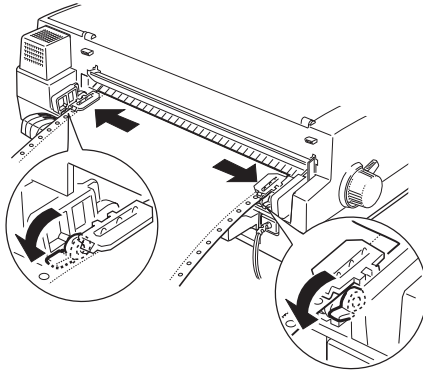
6. Release the sprocket units on the tractor by raising the sprocket-lock levers.



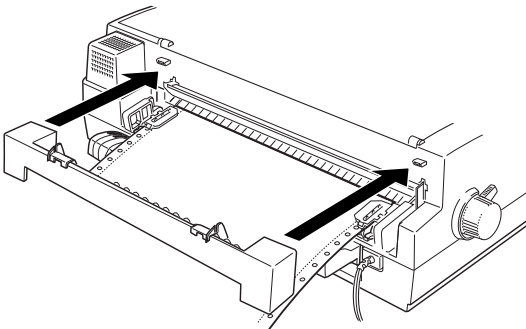
7. Move the sprocket units to match the paper's width, then position the center support midway between the two sprocket units.
8. Open both sprocket covers.
9. Make sure the printable side of the paper is up. Then fit the first four holes of the paper over the sprocket pins and close the sprocket covers.



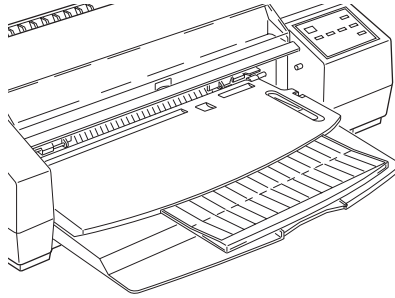
10. Make sure the left sprocket unit is as far to the right as it will go. This places the left perforation at the left edge of the printable area. Then lower the sprocket-lock lever to lock the left sprocket unit.



11. Slide the right sprocket unit to remove any slack in the paper. Then lower the sprocket-lock lever into place.
12. Reattach the manual feed guide to the printer. Match the holes of the guide to the pins on both sides of the printer and push until they click into place.



13. Make sure the rear edge guide of the paper support is pushed under the output tray as shown below.



Note:

If the rear edge guide is not positioned under the output tray, a paper jam may occur.

14. When the printer receives data, it advances the continuous paper to the loading position and starts printing.

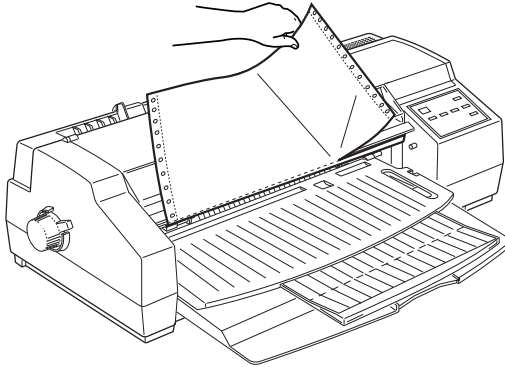
Removing continuous paper

1. After you finish printing, press the Load/Eject button. The printer advances paper to the tear-off position.

Note:

When the auto tear-off feature is on, the printer advances the paper perforation to the tear-off position automatically. For more information on the auto tear-off feature, see “Using the Default-Setting Mode” on page 8-4.

2. Tear off the printed pages.



3. Press the Load/Eject button again. The printer feeds the continuous paper backward to the paper-park position.

Note:

If you are using continuous labels, see “Removing continuous labels from the printer” on page 7-31.

Tips on using continuous paper

Follow the tips below when printing on continuous paper.

- ❑ If the printer runs out of paper during a print job, load paper onto the tractor feeder and press the Pause button to continue printing.
- ❑ You can use the micro-adjust feature to adjust the loading position or tear-off position. See “Adjusting the loading position” or “Adjusting the tear-off position” below. The settings you make remain in effect until you change them again, even if you turn off the printer.



Caution:

Do not use the knob on the left side of the printer to adjust the loading position. Otherwise, you may damage the printer or cause it to lose the top-of-form position.

- ❑ If paper slips out of the sprocket pins, re-insert the paper into the pins before feeding the paper backwards.

Adjusting the loading position

You can adjust the loading position of continuous paper using the micro-adjust feature. Before adjusting the loading position, load continuous paper to the top-of-form position using the Load/Eject button. See page 7-8 for details.

Adjusting the tear-off position

When you press the Load/Eject button after you have finished printing a page, you may find that the perforation is not aligned with the tear-off edge. You can use the micro-adjust feature to adjust paper to the tear-off edge. When you resume printing, the printer feeds paper back to the loading position.

**Caution:**

Do not use the knob on the left side of the printer to adjust the tear-off position. Otherwise, you may damage the printer or cause it to lose the top-of-form position.



Note:

- ❑ *When the auto tear-off feature is on, the printer advances the paper perforation to the tear-off position automatically after you have finished printing a page. For more information on the auto tear-off feature, see “Using the Default-Setting Mode” in Chapter 8.*
- ❑ *The setting you make remains in effect until you change it again, even if you turn off the printer.*

**Caution:**

Never use the tear-off feature with labels. When fed backward, labels may come off the backing and jam the printer. When you use labels, always turn off the auto tear-off setting using the default-setting mode.

To adjust the tear-off position, follow the steps below.

1. Make sure the printer is on and the paper is in the current tear-off position.
2. Press the Micro Adjust  button to feed paper forward, or press Micro Adjust  to feed paper backward. (Press either button as many times as necessary until the perforation is positioned correctly.)
3. Tear off any printed pages.

Note:

The printer has a minimum and maximum tear-off position, beyond which the paper stops moving.

Switching Between Continuous Paper and Single Sheets

When using the tractor feeder, you can easily switch to single-sheet printing without removing the continuous paper.

Switching to single sheets

To switch from continuous paper to single sheets, follow the steps below.


1. If any printed sheets remain in the printer, tear off the printed pages.



Caution:

- Always tear off paper before back-feeding; back-feeding too many sheets can cause a paper jam.*
 - Never back-feed continuous labels. Labels can easily come off their backing and jam the printer. To remove continuous labels, see page 7-31.*
2. Press the Load/Eject button. The printer feeds the continuous paper backward to the paper-park position.
 3. Move the paper-release lever to the single-sheet position.

Note:

If the Pause and Paper Out  lights flash, you may have moved the paper-release lever before feeding the paper backward to the paper-park position. Lower the paper-release lever to the continuous-paper position and press the Load/Eject button; then raise the paper-release lever to the single-sheet position.


4. The printer is ready to print. When it receives data, it loads a single sheet from the sheet feeder or manual feed slot.

Switching to continuous paper

To switch from single sheets to continuous paper, follow the steps below.

1. If a single sheet is in the paper path, press the Load/Eject button to eject it.
2. Move the paper-release lever to the continuous-paper position.

Note:

If the Pause and Paper Out  lights flash, you may have moved the paper-release lever before ejecting a sheet of paper. Raise the paper-release lever to the single-sheet position and press the Load/Eject button; then lower the paper-release lever to the continuous-paper position.

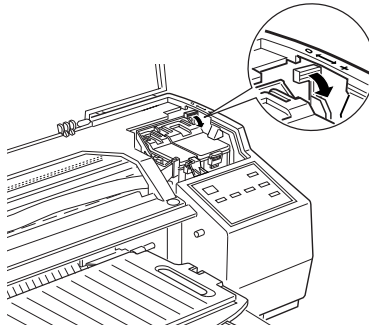
3. The printer is ready to print. When it receives data, it loads continuous paper from the tractor feeder and begins to print.

Printing on Special Paper

In addition to single sheets and continuous paper, your printer can print on a wide variety of paper types, including special coated paper, high-quality glossy paper, transparency films, envelopes, index cards, and labels.

Setting the adjust lever

Be sure to check the adjust lever position if you print on thick paper such as envelopes or index cards, or if ink smears on your documents. If ink smears, set the adjust lever to the + position regardless of the paper type. The adjust lever is located inside the printer. Open the printer cover and change the setting as shown below.



Paper type	Lever position
Standard paper (single sheet)	0
Envelopes	+
Index cards	+
Transparencies	0
Labels	0
Continuous paper	0
Banner paper	0

Set the adjust lever to the + position if the ink on your documents smears.

Choosing Special Paper and Other Media

You can use most plain bond paper with your printer and achieve good results. Coated papers and glossy papers give you better results because they reduce the amount of ink that is absorbed.

You should get good printing results with most types of coated paper. However, print quality can vary depending on the paper quality and manufacturer. Test the printout quality before purchasing large quantities of paper.

EPSON provides special media such as ink jet (coated) paper, transparencies, glossy paper, index cards, and adhesive sheets that are formulated for the inks used in EPSON ink jet printers. EPSON recommends you to use media distributed by EPSON to ensure the best results.

EPSON also provides special media that can enrich the usage and expressive power of the printing results, such as EPSON Ink Jet Canvas Cloth and EPSON Ink Jet Back Light Film. EPSON Ink Jet Canvas Cloth has a canvas-cloth like texture and is designed to give an oil-painted artistic impression to printed images. EPSON Ink Jet Back Light Film has a frosted-glass like printable surface and a glossy surface on its reverse side. Printing on this film gives a crisp, translucent image for use in back-lit displays.

When you use one of the following media types, make sure the appropriate settings are made in the printer driver as described in Chapter 4 (Windows) and Chapter 6 (Macintosh). Also be sure to load the paper according to the instructions in this chapter.

The product names of some EPSON media currently on the market may vary depending on when it was distributed. In the following table, the media names referred to in this manual are shown in the “Current name” column, and the former names for the same media are shown in the “Former name” column. The quality and use of this media is the same regardless of the name on the media packaging.

Coated (Ink Jet) Paper

Former name	Current name
Special Coated Paper for 360 dpi Printing (A4) S041059, S041025 (Letter) S041060 (A3) S041065, S041046 (Super A3/B) S041066, S041078 (A2) S041078	EPSON 360 dpi Ink Jet Paper
Special Coated Paper for 720 dpi Printing (A4) S041061, S041026 (Letter) S041062 (Legal) S041067, S041048 (A3) S041068, S041045 (B4) S041070, S041044 (Super A3/B) S041069, S041043 (A2) S041079	EPSON Photo Quality Ink Jet Paper
Special Coated Index Card for 720 dpi Printing (A6) S041054	EPSON Photo Quality Ink Jet Card
360 dpi Banner Paper S041103	EPSON 360 dpi Ink Jet Banner Paper
720 dpi Banner Paper S041102	EPSON Photo Quality Banner Paper

Transparencies

Former name	Current name
Transparency Film (A4) S041067 (Letter) S041064	EPSON Ink Jet Transparencies

Glossy Film

Former name	Current name
High Quality Glossy Paper (A4) S041071 (Letter) S041072 (A6) S041107 (A3) S041073 (B) S041075 (Super A3/B) S041074	EPSON Photo Quality Glossy Film

Note:

- The availability of special media varies by country.*
- Since the name on the special media packaging may vary in certain markets, you may need to use the product number to confirm the type of special media you have.*

Loading Special Paper and Other Media

When loading special paper distributed by EPSON, read the instruction sheets packed with your special media first and keep the following in mind.

- Make sure the printable surface of the paper is face down when loading media into the sheet feeder, and when loading paper into the manual feed slot, the printable surface is face up. See the instruction sheets packed with the media to determine which side is the printable surface. Some media features cut corners to help identify the correct loading direction.

- ❑ Before you load Super A3/B or A2 size paper, see “Loading oversized paper into the sheet feeder” in this chapter. Note the following important precautions when handling such paper.
- ❑ Make sure the paper stack fits under the arrow mark, which is located on the inside surface of the edge guide. Basic loading capacity for special media is explained below.

EPSON 360 dpi
Ink Jet Paper and Photo
Quality Ink Jet Paper

You can insert up to 70 sheets of special coated paper into the sheet feeder. If you plan to print on Super A3/B or A2 size special coated paper, do not load more than 30 sheets into the sheet feeder. Also make sure the stack of paper loaded in the sheet feeder does not reach more than half way to the arrow mark, which is located on the inside surface of the edge guide.

EPSON Photo Quality
Ink Jet Card

You can insert up to 30 index cards into the sheet feeder.

EPSON Photo Quality
Glossy Paper

You can load up to 20 sheets. Before loading glossy paper into the sheet feeder, always put a support sheet* or a sheet of plain paper under the stack of glossy paper.

EPSON Photo Quality
Glossy Film

For best results, you should load glossy film one sheet at a time. Before loading glossy film into the sheet feeder, always put a support sheet* or a sheet of plain paper under the glossy film. If you wish to load multiple sheets of glossy film, load only up to 30 sheets and set the minimum top margin of the page to 30mm.

EPSON Ink Jet
Transparencies

You can load up to 50 transparencies. Before loading transparencies into the sheet feeder, always put a support sheet* or a sheet of plain paper under the stack of transparencies.

EPSON Photo Quality
Adhesive

You can load one sheet at a time from manual feed slot.

Envelopes

You can load up to 10 envelopes.

EPSON 360 dpi Ink Jet
Banner Paper
EPSON Photo Quality
Banner Paper
EPSON Ink Jet Canvas
Cloth

To ensure the print quality and for ease of use with banner paper, the optional Banner Paper Kit is required.

EPSON Ink Jet Back
Light Film

You can load one sheet at a time into the sheet feeder, or from the manual feed slot.

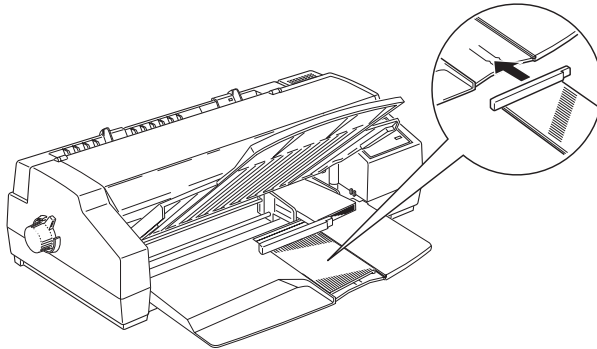
*If a support sheet is packed with the Photo Quality Glossy Film, load it underneath the glossy film, but do not print on it.

Photo Quality Ink Jet Card

For best results when printing on index cards, you should use EPSON Photo Quality Ink Jet Cards.

When printing on index cards, please note the following:

- ❑ Make sure that the adjust lever is set to the + position before you load index cards. The adjust lever is located inside the printer. See “Setting the adjust lever” on page 7-20.
- ❑ You can insert up to 30 index cards into the sheet feeder. Load index cards short edge first.
- ❑ When you load index cards, remove the rear edge guide and re-install it to match the length of the cards as shown below.



- ❑ Make sure the printable side of the paper is loaded correctly. For the sheet feeder, load cards with the printable surface down; for the manual feed slot, load cards with the printable surface up.



Caution:

Do not touch the printable surface of the paper. Hold the cards by their edges. The moisture or oils on your fingers can decrease the print quality.

- ❑ You may be able to select 720 dpi if your DOS program supports 720-dpi printing. You can select from Bi-d, Uni-d, or Auto print directions using the default-setting mode. The Uni-d setting is recommended when printing at 720 dpi. See Chapter 8 for details.
- ❑ Do not load index cards that are curled or bent.
- ❑ Return unused cards to their original package as soon as possible after you finish printing. Unfavorable storage conditions, such as high temperature, humidity, or direct sunlight, can damage the paper.
- ❑ If your index cards don't feed properly or jam, see Chapter 10, "Troubleshooting."

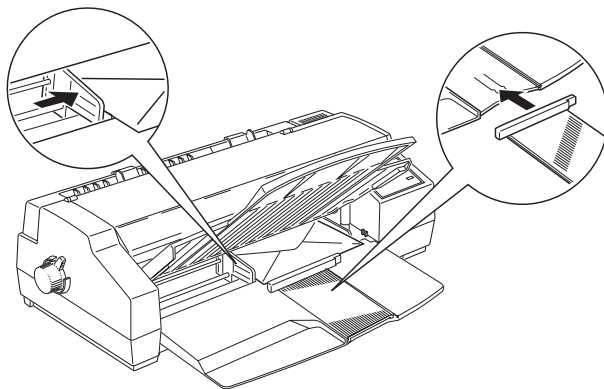
Envelopes

When printing on envelopes, note the following:

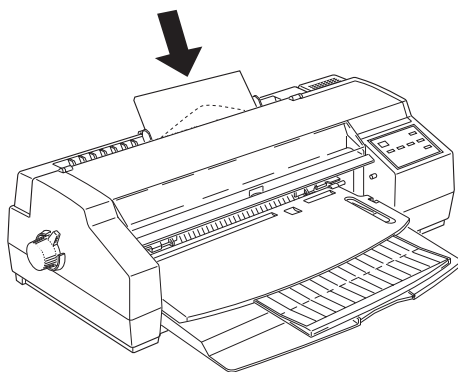
- ❑ Make sure that the adjust lever is set to the + position. The adjust lever is located inside the printer. See "Setting the adjust lever" on page 7-20.
- ❑ Before printing on envelopes from a DOS program using the sheet feeder, the printer must be in the envelope printing mode. To enter this mode, load a single envelope in the sheet feeder and then eject it by pressing the Load/Eject button. The printer will now feed envelopes correctly.

- ❑ You can load up to 10 envelopes in the sheet feeder. Make sure the printable surface is face down and the flap edge loads first.

When loading C5 envelopes, remove the rear edge guide and re-install it to match the length of the envelopes as shown below.



- ❑ When you load envelopes into the manual feed slot, position the right edge guide so that its right edge is even with the arrow mark on top of the manual feed guide. Load envelopes printable side up. See “Loading paper manually” earlier in this chapter.



- ❑ Do not print on the back side of envelopes.
- ❑ Do not use envelopes that are curled, folded, or partially sealed. Also, avoid using envelopes that are too thin; they may curl during printing.
- ❑ Select Plain Paper as the Media Type setting in the printer driver. For more details on making printer driver settings, see online help for Windows, or Chapter 6 for Macintosh.
- ❑ Return unused envelopes to their original packages. Unfavorable storage conditions such as high temperature or humidity can damage them.
- ❑ If your envelopes don't feed properly or jam, see Chapter 10, "Troubleshooting."

Labels

When printing on labels, please note the following:

- ❑ Do not use labels that are curled or folded. Also avoid using labels that are peeling off the backing.
- ❑ Return unused labels to their original packages. Unfavorable storage conditions such as high temperature, humidity, or direct sunlight can damage them.
- ❑ If your labels don't feed properly or jam, see Chapter 10, "Troubleshooting."

For single-sheet labels:

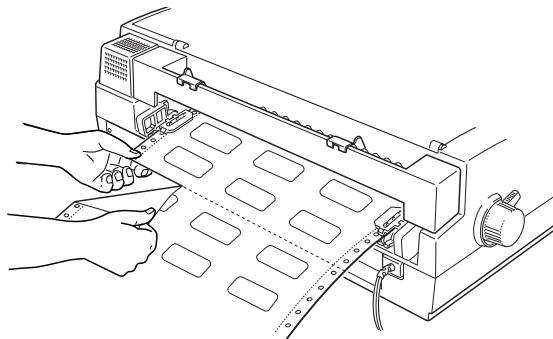
- ❑ Load sheets of labels into the manual feed slot one sheet at a time. Otherwise, they may not feed properly. See “Loading paper manually” on page 7-5. Also, see Appendix C for specifications.
- ❑ Only use labels that completely cover the backing sheet; otherwise, they may peel off and jam the printer.
- ❑ Make sure that the printable surface of the labels is face up.

For continuous labels:

- ❑ Choose labels mounted on a continuous backing sheet with sprocket holes for use with the tractor feeder.
- ❑ Make sure the printing stays entirely within the printable area. See Appendix C for specifications.
- ❑ Make sure you load labels with the printable surface face up.
- ❑ Make sure the auto tear-off feature is set to off in the default-setting mode when using continuous labels.
- ❑ Do not leave labels loaded in the printer between jobs; they may curl around the platen and jam when you resume printing.

Removing continuous labels from the printer

1. Tear off the fresh supply of labels at the rear of the printer.



2. Press the LF/FF button to advance the remaining labels out of the printer.



Caution:

Never feed labels backward through the printer; they can easily peel off the backing and jam the printer. If a label does become stuck in the printer, contact your dealer.

EPSON banner paper

You can load paper longer than A2 portrait size (592 mm) from the manual feed slot. Especially when you print on EPSON 360 dpi Ink Jet Banner Paper, EPSON Photo Quality Banner Paper, or EPSON Ink Jet Canvas Cloth and to ensure high print quality and for easier handling of the banner paper roll, the optional Banner Paper Kit is required.

For detailed information and instructions on using EPSON banner paper, see the user's guide that comes with the Banner Paper Kit.

EPSON Ink Jet Back Light Film

When printing on the EPSON Ink Jet Back Light Film, note the following:

- ❑ You can load only one sheet at a time into the sheet feeder or from the manual feed slot.
- ❑ The EPSON Ink Jet Back Light Film tends to curl even under normal storage conditions. If it curls, flatten it before you load the film.
- ❑ Make sure to load the film with the printable side down when loading the film into the sheet feeder, or with the printable side up when loading the film from the manual feed slot.
- ❑ Before sending data, make sure the Ink Jet Back Light Film is selected in the media type list on the main menu in the printer driver.

Note:

EPSON Ink Jet Back Light Film is designed to print images backwards, using the printer driver's Flip Horizontal feature, so that viewing the print out from the reverse side gives the correct image. To use the Flip Horizontal feature, select Ink Jet Back Light Film as the Media Type or select Flip Horizontal.

Chapter 8

The Control Panel

8

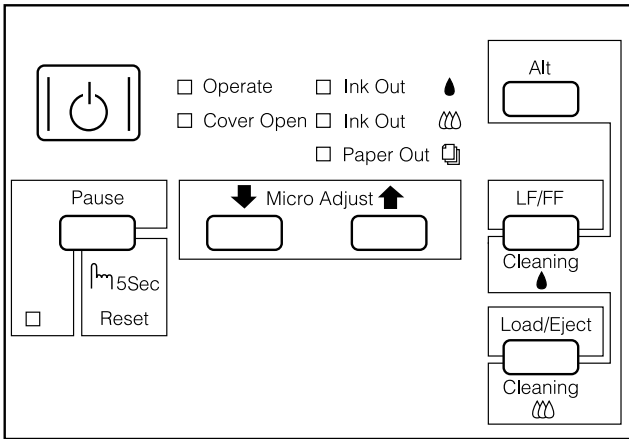
Using the Control Panel	8-2
Using Special Power-On Functions	8-3
Using the Default-Setting Mode	8-4
About the default settings	8-5
Changing the default settings	8-10
Selecting fonts	8-12
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Using the Control Panel

The lights and buttons on the control panel help you easily control most common printer operations.

Note:

Software usually overrides control panel selections. Use your software to select print functions whenever possible.



Using Special Power-On Functions

These functions are available if you hold down the following buttons while turning on the printer:

LQ self test (Load/Eject)

Checks the paper length and performs self-test printing at 360 dpi (dots per inch). See Chapter 10, “Troubleshooting.”

Draft self test (LF/FF)

Checks the paper length and performs self-test printing at 180 dpi. See Chapter 10, “Troubleshooting.”

Hex dump (LF/FF + Load/Eject)

Prints the print data in hexadecimal code. See Chapter 10, “Troubleshooting.”

Default setting (Micro Adjust▼)

Enters the default-setting mode. See “Using the Default-Setting Mode” on the next page for details.

Print head alignment (Pause)

Enters the printer-adjustment mode. See “Aligning the Print Heads” on page 10-40 for details.

Note:

To exit the hex dump, default-setting, or print head alignment mode, turn off the printer.

Using the Default-Setting Mode

You can change several printer settings that control a variety of functions such as print direction and loading position. Because these settings take effect each time you turn on the printer, they are called default settings.

The factory default settings are designed to meet the needs of most users, so you probably do not need to change them. The table below lists the features you can select in the default-setting mode.

Setting	Options
Print direction	Auto, Bi-D, Uni-D
Font	Courier, Roman, Sans Serif, Prestige, Script, Roman T, Sans Serif H, Draft
Pitch	10 cpi, 12 cpi, 15 cpi, 17.1 cpi, 20 cpi, Proportional
I/F mode	Auto, Parallel, Serial, Option
Auto interface wait time	10 seconds, 30 seconds
Software	ESC/P 2, IBM XL24E
Auto CR*	Off, On
AGM*	Off, On
Character table	PC437, PC850, PC860, PC861, PC863, PC865, Abicomp, BRASCII, Roman 8, ISO Latin 1, PC437 Greek, PC853, PC855, PC852, PC857, PC866, PC869, MAZOWIA, Code MJK, ISO 8859-7, ISO Latin 1T, Bulgaria, PC774, Estonia, ISO 8859-2, PC866LAT, Italic.
International character set for Italic table	Italic U.S.A., Italic France, Italic Germany, Italic U.K., Italic Denmark 1, Italic Sweden, Italic Italy, Italic Spain 1
Auto line feed	Off, On
Network I/F mode	Off, On
0 slash	0, Ø
Page length for continuous paper	11 inch, 12 inch, 8.5 inch, 70/6 inch, Others

Setting	Options
Skip over perforation	Off, On
Auto tear off	Off, On
Banner mode	Off, On
Parallel I/F transfer rate	Fast, Normal

* IBM mode only

For details, see “About the default settings” below. To change a setting, see “Changing the default settings” on page 8-10.

Note:

Most software controls the character table and auto line feed. If your software controls these features, you may never need to set them with the control panel.

About the default settings

Print direction

Your printer has three direction settings: Uni-D, Bi-D, and Auto.

Note:

Most software controls this setting. If your software does, you may never need to set it with the control panel.

Auto switches the printer automatically between bidirectional (for text data) and unidirectional (for graphics data) printing.

Bi-d causes the print heads to print in both directions. This provides the fastest printing. If vertical or horizontal lines are not aligned, align the print heads as shown on page 10-40. If you can't use the calibration utility, you will need to align the print heads using the print head alignment mode.

Uni-d causes the print heads to print in one direction only. This provides maximum alignment for both graphics and character printing.

Font

Use this setting to select which built-in font should be used as the default. For more details, see “Selecting fonts” on page 8-12.

Pitch

With this setting, you can specify the default character pitch to be used for printing.

I/F mode

Your EPSON printer has both a parallel and serial interface, allowing you to share the printer between two computers.

If you select Auto, the printer automatically selects the interface that is receiving data, and uses that interface until the end of the print job. (A print job ends when no data is received from the selected interface for the amount of time specified in the Auto I/F wait time setting described below.)

Set this option to Parallel if you want the printer to ignore data from the serial interface or to Serial if you want the printer to ignore data from the parallel interface.

Select Option if you have installed an optional interface card and want the printer to ignore data from the built-in parallel or serial interface.

If you don't know what type of interface your computer requires, check your computer manual.

Auto interface wait time

If you select Auto in the I/F mode option, you can set the interface timeout to 10 seconds or 30 seconds.

The printer does not accept data from another interface unless no data is received from the current interface for the period set as the Auto interface wait time.

Software

Use this setting to specify the type of control codes you want to use to control the printer.

If you select ESC/P 2, the printer emulates an EPSON ESC/P 2 printer. If you select IBM XL24E, the printer operates as an IBM Proprinter™ XL24E. If possible, choose EPSON ESC/P 2 in your software applications. This will allow you to use the most advanced font and graphics handling available.

Auto CR

When Auto CR is on, the auto carriage return option performs a carriage-return line-feed (CR-LF) operation whenever the print position exceeds the right margin. If this is set to off, the printer does not print characters beyond the right margin and does not perform a line wrap until it receives a CR. This feature is available when you select IBM XL24E emulation as the control code setting.

AGM (Alternate Graphics Mode)

When AGM is on, the printer can use high-resolution 24-pin graphics commands. The default setting is off. This feature is available when you select IBM XL24E emulation as the control code setting.

Character table

Character tables contain the characters and symbols used by different languages. The printer prints text based on the selected character table. For the available character tables, see the Appendix.

International character set for Italic table

International character sets contain the italic characters and symbols used by different languages. The printer prints italic text based on the selected italic table. For available character tables, see the Appendix.

Auto line feed

When the auto line feed feature is on, each carriage return (CR) code is accompanied by a line feed (LF) code. If your printed text is unexpectedly double-spaced, set this feature to off. If text lines print on top of each other, set it to on.

Network I/F mode

If your printer is connected to a single computer, leave this feature off. If you want to share the printer with another computer, turn this feature on.

When this feature is on, data may be present in the printer's buffer even though the printer is not printing. Always make sure the printer does not receive data before turning off the printer.

0 slash

This option determines whether the printer prints a slashed zero (0) or unslashed zero (0). This feature is useful for clearly distinguishing between an uppercase letter O and a zero when printing documents such as programming lists.

Page length for continuous paper

This option is available only when you use continuous paper with the tractor. You can set the paper length to 11, 12, 8.5, or 70/6 (the length of A4 paper) inches.

Skip over perforation

If you turn on this feature, the printer skips over the perforations of continuous paper, providing a 1-inch margin between the last line printed on one page and the first line printed on the next. Because most software programs set their own top and bottom margins, you should use this feature only if your program does not provide them. This feature does not affect single-sheet paper.

Auto tear off

When you use continuous paper with the tractor or banner paper, this feature advances the paper perforation or end of printed page to the tear-off position where you can easily tear off or cut off the printed pages. When the printer receives data, it automatically feeds the paper to the top-of-form position and starts printing, so you can use all of the next sheet.



Caution:

If you use the tractor feeder to print labels, set this feature to off. Otherwise labels may come off the backing and jam the printer.

Banner mode

If you turn on this mode, the banner paper is not recognized as single-sheet paper even if the paper-release lever is set to the single-sheet position. Therefore, paper is not ejected and advanced forward to the next page with the LF/FF button.

Parallel I/F transfer rate

This setting specifies the I/F transfer rate. For most printing, leave this setting set to Fast. If you encounter problems, set it to Normal.


Changing the default settings

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

1. Make sure the printer is turned off and at least 4 sheets of A4 (210 mm) size or wider paper are loaded printable side down in the sheet feeder.



Note:

You can also load paper from the manual feed slot or the tractor feeder.

2. Hold down the Micro Adjust  button and turn on the printer to enter the default-setting mode.

The printer loads a sheet of paper and prints a brief summary and instructions. It instructs you to select the language that you want messages printed in (English, French, German, Italian, Spanish, or Portuguese).

3. Press the Alt button until the following lights indicate the language of your choice; then press the Pause button to make your selection.

Language	Ink Out 	Ink Out 
English	●	●
French	○	●
German	◌̈	●
Italian	●	○
Spanish	○	○
Portuguese	◌̈	○

○ = On, ● = Off, ◌̈ = Flashing

After you press the Pause button, the printer prints the current default settings and the next instructions in the language you selected. The printed instructions include submenu tables that list all of the settings you can change and show you how the control panel lights appear for each selection. Use the instruction sheets to change the settings from the control panel.

4. After making your changes, exit the default-setting mode by turning off the printer.

Note:

- You may exit the default-setting mode any time by turning off the printer while the printer is paused. Any changes you have made remain in effect until you change them again.*
- If you want to check the new default settings, enter the default-setting mode again and print the current settings. If you want to stop printing the instruction sheets and exit the default-setting mode without making any changes, press the Pause button. Next, press the Load/Eject button to eject the current page, if necessary, and then turn off the printer.*

Selecting fonts

Your printer has eight built-in character fonts including two EPSON fonts: EPSON Roman T and EPSON Sans Serif H. (Roman T is similar to the Times™ font; Sans Serif H is similar to Helvetica™.)

To select a font, enter the default-setting mode. See “Changing the default Settings” on page 8-10.

Note:

Font selections you make with your software override your printer's control panel selections. For best results, use your software to select fonts.

The table below shows the available fonts.

Fonts	Sample
EPSON Courier	
EPSON Roman T	
EPSON Sans Serif H	
EPSON Roman	
EPSON Sans Serif	
EPSON Prestige	
EPSON Script	
Draft	

Note:

- Roman T and Sans Serif H fonts are available in proportional spacing only.*

- Some of the character tables might not be able to print with EPSON Roman T and EPSON Sans Serif H fonts. In these cases, selected character tables are printed with EPSON Roman.*

Scalable fonts

The size of the Roman, Sans Serif, Roman T, and Sans Serif H fonts can be selected from 8 to 32 points in 2-point increments through your software or by sending an ESC/P 2™ command. See the documentation that came with your software for information on selecting the size of scalable fonts.

8

EPSON
Roman

EPSON
Roman T

EPSON
Sans Serif scalable sample

EPSON
Sans Serif H

Chapter 9

Maintenance and Transportation

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Printing with an empty color ink cartridge	9-6
Cleaning the Printer	9-7
Transporting the Printer	9-8

Replacing an Ink Cartridge

The printer's indicator lights will inform you when it is time to obtain a replacement ink cartridge and when it is time to replace an empty cartridge. Also, because ink quality degrades over time, replace an ink cartridge if you haven't used up the ink within six months and print quality declines.

EPSON recommends the use of genuine EPSON ink cartridges. Other products not manufactured by EPSON may cause damage to your printer not covered by EPSON's warranties.

When the Ink Out  light is

- flashing obtain a replacement black ink cartridge (S020108).
- on replace the empty black ink cartridge.

When the Ink Out  light is

- flashing obtain a replacement color ink cartridge (S020089).
- on replace the empty color ink cartridge.

Note:

When the color ink cartridge is empty, the printer can continue to work using only black ink. To print with black ink only, see "Printing with an empty color ink cartridge" on page 9-6.



Caution:

- Once you open the ink cartridge clamp, the ink cartridge becomes unusable and cannot be reinstalled even if ink remains.*
- Leave the old cartridge installed in the printer until you are ready to replace it with a new one.*

To replace an ink cartridge, follow these steps.

1. Make sure the printer is on. Determine which cartridge needs to be replaced as indicated by the Ink out (● or ●●) light.
2. Open the printer cover using the notch on the cover.
3. Hold down the Alt button for about three seconds. The print heads move left slightly to the cartridge install position, and the Pause light flashes when the print heads are in position.

Note:

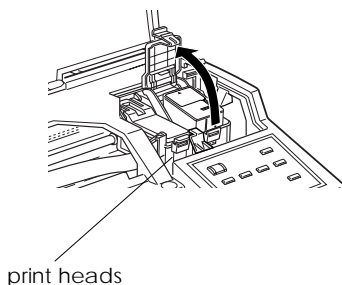
The printer automatically moves the print heads back to their home (far right) position after about 60 seconds if you have not started the replacement procedure.



Caution:

Do not move the print heads by hand. Always use the Alt button to move them. Otherwise you may damage the printer.

4. Lift up the clamp that holds the cartridge you want to replace as far as it will go. When you do, the cartridge will rise partly out of the cartridge holder.



- Lift the cartridge out of the printer and dispose of it properly. Do not take the used cartridge apart or try to refill it.



Warning:

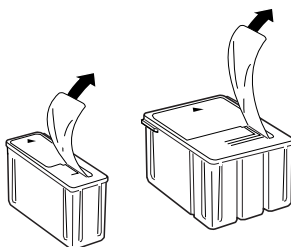
If ink gets on your hands, wash them thoroughly with soap and water. If ink gets into your eyes, flush them immediately with water.



Caution:

Leave the old cartridge installed in the printer until you are ready to replace it with a new one.

- Open the ink cartridge package. Next, remove only the yellow tape seal from the cartridge as shown below.



black ink cartridge
(S020108)

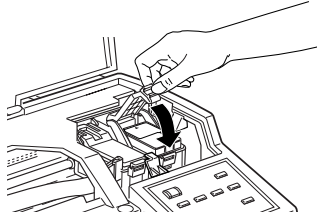
color ink cartridge
(S020089)



Caution:

- You must remove the yellow tape seal from the cartridge. Leaving the tape on when you install the cartridge will permanently damage it.*
 - Do not remove the tape seal from the bottom of the cartridge; otherwise, ink will leak.*
- Lower the ink cartridge into the cartridge holder with the label on the cartridge face up and the arrow on the cartridge pointing to the rear of the printer. The color ink cartridge goes on the right, the black ink cartridge on the left.

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



9. Press the Alt button again. The printer moves the print heads back to their home (far right) position and charges ink in the system.



Caution:


The Pause light continues to flash while the printer performs the ink charging operation. Never turn off the printer while the Pause light is flashing. Doing so can result in incomplete charging of ink.

Note:

Even if you do not press the Alt button, the printer moves the print heads back to their home position about 60 seconds after you replace the cartridge.

10. When the ink charging procedure is finished, close the printer cover.
11. Press the Pause button to resume printing.

Printing with an empty color ink cartridge

Even if the color ink cartridge is empty, you can still print documents with black ink as long as both cartridges are installed. To continue printing when the Ink Out  light is lit continuously, turn the printer off and back on again. Be aware that any data you sent to the printer before turning it off will be lost.

Note:

The empty color ink cartridge must be installed.

Before sending data to the printer, choose Black as the Ink setting in the printer driver. For details on the printer driver settings, see online help for Windows, or Chapter 6 for Macintosh.

To switch back to color printing, you must install a new color ink cartridge as described in this chapter, and then turn the printer off and back on again.

If the black ink runs out, you cannot continue printing until you replace it even though the color ink cartridge still contains ink.

Cleaning the Printer

To keep your printer operating at its best, you should clean it thoroughly several times a year.

1. Make sure the printer is turned off and all the lights are turned off. Then unplug the power cord.
2. Remove any paper from the sheet feeder.
3. Use a soft brush to carefully clean away all dust and dirt.
4. If the outer case or the inside of the sheet feeder is dirty, clean it with a soft, clean cloth dampened with mild detergent. Keep the printer cover closed to prevent water from getting inside.
5. If the inside of the printer accidentally gets soiled with ink, wipe it off with a damp cloth.

***Warning:***

Be careful not to touch the gears inside the printer.

***Caution:***

- Never use alcohols or thinners to clean the printer; these chemicals can damage the components as well as the case.*
- Be careful not to get water on the printer mechanism or electronic components.*
- Do not use a hard or abrasive brush.*
- Do not spray the inside of the printer with lubricants; unsuitable oils can damage the mechanism. Contact your dealer or a qualified service person if lubrication is needed.*

Transporting the Printer

If you need to transport your printer some distance, carefully repack it using the original box and packing materials as follows:

1. Open the printer cover and make sure that the print heads are capped, which means they are in the home (far right) position. If the print heads are not capped, turn on the printer and wait until the print heads return to the home position. Turn off the printer and then close the printer cover.



Caution:

Leave the ink cartridges installed when you transport the printer. Removing the cartridges during transport can damage the printer.

2. Unplug the power cord from the electrical outlet; then disconnect the interface cable from the printer.
3. Remove any paper from the sheet feeder and remove the paper support, output tray, and cable cover.
4. Attach the protective materials you removed when unpacking the printer.
5. Repack the printer, paper support, output tray, cable cover, and power cord in the original box.
6. Keep the printer level during transport.

Chapter 10

Troubleshooting

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Diagnosing a Problem

Troubleshooting printer problems is best handled in two easy steps: first diagnose the problem, then apply likely solutions until the problem is fixed. The information that you need to diagnose the most common problems is provided by the printer's control panel lights and by the Status Monitor utility (Windows 95 and Macintosh only). In addition, you can determine whether a problem lies with the printer itself or with the computer by performing a self test. Experienced users may also want to use the printer's hex dump mode to pinpoint communication problems.




In "Problems and Solutions" later in this chapter you can find causes and solutions to specific printer problems. Use the information presented in this chapter to pinpoint the source of your problem, then apply the recommended solutions until the problem is solved.

Error indicators

You can identify many common printer problems with the lights on the control panel. If your printer stops working and the lights are on or flashing, use the following table of panel light patterns to diagnose the problem, then follow the recommended corrective measures.

State of Panel Light	Problem and Solution
○ Paper Out 	No paper is loaded in the printer.
	Load paper in the sheet feeder; then press the Load/Eject button to turn the Paper Out  light off. The printer resumes printing.
	The paper is not loaded correctly.
	Remove and reload paper correctly. See "Loading Paper" in Chapter 3 (Windows) or 5 (Macintosh).
	The paper-release lever may be set to the wrong position.
	Match the paper-release lever position with the kind of paper loaded in the printer.
◌ Paper Out 	Paper has jammed in the printer.
	To clear the paper jam, see "Clearing a paper jam" on page 10-23. If you have frequent paper feed or paper jam problem, see "Preventing paper feed and paper jam problems" on page 10-24.
◌ Black Ink Out 	The black ink cartridge is nearly empty.
	Obtain a replacement black ink cartridge (S020108).
○ Black Ink Out 	The black ink cartridge is empty.
	Replace the black ink cartridge with a new one (S020108).
◌ Color Ink Out 	The color ink cartridge is nearly empty.
	Obtain a replacement color ink cartridge (S020089).
○ Color Ink Out 	The color ink cartridge is empty.
	Replace the color ink cartridge with a new one (S020089).
○ Cover Open	The printer cover is open.
	Close the printer cover and press the Pause button to continue printing.
◌ Paper Out  ◌ Pause	The paper-release lever position is not correctly positioned.
	Match the paper-release lever position with the kind of paper and paper source you are using.

○ = on, ◌ = flashing

State of Panel Light	Problem and Solution
○ Cover Open ○ Pause	The print heads were moved by hand. Turn off the printer, and turn it back on again after a few seconds.
○ Operate ○ Paper Out  ○ Black Ink Out  ○ Color Ink Out  ○ Pause ○ Cover Open	An unknown printer error has occurred. Turn off the printer, and contact your dealer.

○ = on, ○ = flashing

Status Monitor

If you are printing with Windows 95 or a Macintosh, you can use the Status Monitor to check the printer's current status. For more details, see Chapter 4, "Using the Printer Software for Windows", or Chapter 6, "Using the Printer Software for Macintosh."


Self testing

Self testing can help you determine whether the problem comes from the printer or the computer.

To perform a self test, follow these steps:

Note:

- ❑ *Make sure that paper is loaded in the sheet feeder before starting the self test.*
- ❑ *Make sure the paper-release lever is set to the single sheet position.*
- ❑ *Use paper at least 210 mm (8.27 inches) wide; for example A4 size paper loaded short edge first. Otherwise, the print head will spray ink directly onto the platen, which could mar future printouts.*

1. Make sure the printer is turned off.
2. While holding down the Load/Eject button, press the  Operate button to turn on the printer.

The self test begins by printing on the first and last lines of the first sheet of paper to measure the page length. Then the printer prints character samples on the next sheet of paper.

The test is printed using the available fonts at 360 dpi (dots per inch). Here is part of a typical self test:

The above sample is in black and white, but the actual test prints in color.

Note:

If you want to perform self-test printing at 180 dpi, turn on the printer while holding down the LF/FF button.

3. The test continues until the paper in the sheet feeder runs out or until you press the Pause button. To stop the test, press the Pause button. To resume the test, press the Pause button again.
4. To end the self test, press the Pause button to stop printing. Press the Load/Eject button to eject the page if necessary, and then turn off the printer.



Caution:

Do not turn off the printer while it is printing. Always press the Pause button to stop printing and then turn off the printer.

- ❑ If the self test results are satisfactory, this means that the printer itself is all right and that the problem probably lies in the printer software settings, application settings, the interface cable (be sure to use a shielded cable), or the computer itself.
- ❑ If the self test does not print satisfactorily, this tells you there is a problem with the printer, such as an empty ink cartridge or dirty print head. See “Problems and Solutions” on the next page for possible causes and answers to the problem, or go directly to “Cleaning the Print Heads” on page 10-36.

Hex dump mode


Experienced users can use the hex dump mode to pinpoint communication problems between the printer and a software program. To enter the hex dump mode, follow these steps.

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



Caution:

Use paper at least 210 mm (8.27 inches) wide, for example, A4 size paper loaded short edge first. Otherwise, the print head will spray ink directly onto the platen, which could mar future printouts.

2. Hold down the LF/FF and Load/Eject buttons and press the  Operate button to turn on the printer.
3. Send data from the computer.

The printer prints the exact code it receives from the computer in hexadecimal format.

Problems and Solutions


This section divides printer problems into six categories:

- Power supply page 10-7
- Operation page 10-8
- Paper handling page 10-16
- Printing quality page 10-25
- Printer utilities page 10-32
- Interface page 10-33





Go to the category for the type of problem you have and look for the description that most closely matches the problem. The most likely causes and solutions are listed first, so try them in the order that they are written until the problem is solved.

Power supply


The lights come on briefly, but then go off and stay off.
--

Cause	What to do
The printer's voltage rating may not match the voltage of your electrical outlet.	Check the printer's voltage rating and the outlets voltage rating. If the voltages do not match, unplug the printer immediately and contact your dealer.  Warning: <i>Do not reconnect the power cord to an electrical outlet that does not have the matching voltage.</i>

The printer does not work and the control panel lights are off.

Cause	What to do
The power cord is not properly plugged into the electrical outlet.	Turn off the  Operate button, make sure the power cord is firmly plugged into the electrical outlet, and turn on the  Operate button. If the control panel lights still don't come on, contact your dealer.
The printer is turned off.	Turn on the  Operate button. The  Operate light will come on.
The electrical outlet is controlled by an outside switch or automatic timer.	Use a different outlet.
The outlet is out of order.	Plug another electrical device into the outlet to determine whether the outlet is working. If it is not, use a different outlet.

Operation

The  Operate light is on but nothing prints.

Cause	What to do
The interface cable is not plugged in securely.	Confirm that both ends of the cable between the printer and the computer are fastened securely. If the cable is connected correctly, run a self test as described on page 10-4.
Your interface cable does not meet both the printer and computer specifications.	Use an interface cable that meets both printer and computer specifications. See Appendix C.

Your software is not properly set up for your printer.	Make sure that your printer is properly selected in your software.
--	--



	Install or re-install the printer driver software as described in Chapter 2.
--	--

One or both ink cartridges may be too old. They are too old if they have been used longer than six months or beyond the date on their packaging.	First try cleaning the print heads as described in “Cleaning the Print Heads” on page 10-36. If print does not appear even after several tries, you may need to replace one or both cartridges as described on page 10-43.
--	--

Nothing prints and the lights are on or flashing.

Cause	What to do
Several common printer errors have occurred at once.	Use the table in “Error indicators” at the beginning of this chapter to determine what combination of errors may have occurred, and apply the recommended solutions.

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

Cause	What to do
The print head nozzles are clogged.	Clean the print heads as described in “Cleaning the Print Heads” on page 10-36. If this does not work after several trials, contact your dealer.
One or both of the ink cartridges have been used longer than six months or beyond the date on the packaging.	Try cleaning the print heads. If that does not solve the problem, replace ink cartridges as needed. If the  or  Ink Out light is not on or flashing, see “Ink Cartridge Problems” on page 10-43 to replace the ink cartridge.

The self test prints well, but nothing prints from within an application program.

Cause	What to do
Your printer is not selected in your software.	Select your printer in the printer setup section of your software.
The interface cable does not meet both the printer and computer requirements.	Use a printer cable that meets the requirements shown under "Interface cables" on page 1-8.
Your computer is not 100% IBM [®] AT compatible.	Select Use Print Manager for this port in the Queue Setup window. To access this window, double-click the EPSON Spool Manager4 icon in the EPSON folder (Windows 95) or EPSON program group (Windows 3.1), and select Setup from the Queue menu.
Your computer system's memory is too small to handle the volume of data in your document.	<p>Try reducing the image resolution of your document in your image-editing software.</p> <p>Install more memory in your computer if possible.</p> <p>Select lower resolution or less colors for your display setting as described below.</p> <p>For Windows 95, choose a lower resolution setting as the Color Palette setting. To access the Color Palette, click Start, point to Settings, and choose Control Panel. Then double-click the Display icon and click the Settings tab. For detailed information on making this setting, see your Windows 95 user's guide.</p>

For Windows 3.1, double-click the Windows Setup icon on the Main menu; then click Options and choose Change System Settings. Then choose a lower resolution setting for your display from the Display pop-up list. For detailed information on making this setting, see your Windows 3.1 user's guide.

If you have a display-adapter setting utility, use it to set lower resolution. For detailed information, see your display board user's guide.

For Macintosh, choose Control Panel from the Apple menu and select Monitors. Select a lower resolution. For detailed information on making this setting, see your Macintosh user's guide.

Color documents print out in black and white.	
--	--

Cause	What to do
Your printer is not selected in your software.	Select your printer by clicking the Print command on the File menu of your application program, and then selecting it in the following dialog box(es).

Color printing is not selected in your application or in the printer driver.

Select color printing in your application and the printer driver. Try to print again. If the image still comes out in black and white, try printing from another program. If this fixes the problem, contact the software manufacturer of the application you had trouble with.

The printer is being used with an empty color ink cartridge installed.

Replace the color ink cartridge, then turn the printer off and back on. Any data sent to the printer will be lost. See “Printing with an empty color ink cartridge” on page 9-6.

Printing starts too high or too low on the page.	
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Cause	What to do
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Margins are set incorrectly in your application.

Check that the margins are set correctly in your program. See “Printable area” on page C-8.

The size of the paper loaded in the printer does not match the paper size setting within your application program.

Load the correct size of paper, or change the paper size settings within your application program or printer driver to match the size of paper you are using.

Print Speed is not what you expect.

Cause	What to do
The image resolution and the amount of color used in the document may be too high.	Carefully considering your use of color and resolution can help you optimize your printing times. For more details, see “Increasing the Print Speed” later in this Chapter.

Note:

High resolution printing and color printing significantly increase the amount of data to be processed. These two factors have the greatest effect on print speed.

Something on the page is wrong or missing.

Cause	What to do
Unknown problem has occurred.	Disconnect the interface cable from the computer; then try the self test as described on page 10-4.
The printer settings within your application are incorrect.	Adjust the printer settings within your application and print again.
The interface cable is not plugged in securely.	Check that both ends of the cable connecting the printer and the computer are securely plugged in.
The data transfer speed does not match your computer.	Set Parallel I/F transfer rate to Normal in the default-setting mode. See “Changing the default settings” in Chapter 8.

Software settings override those made in the default-setting mode.

Always try making a setting in your application first. If that is not possible, use the printer driver. If that is also impossible, use the default-setting mode.

For DOS users:

The Network I/F mode is set to off.

Set the Network I/F mode to on in the default-setting mode. To enter the default-setting mode, see “Changing the default settings” in Chapter 8.

All the text prints on the same line.
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Cause	What to do
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For DOS users:

Auto line feed is set to off in the default-setting mode.

Make sure that auto line feed is set to on in the default-setting mode so that the printer automatically adds a line-feed code to each carriage return. See “Using the Default-Setting Mode” in Chapter 8.

An extra blank line prints between each text line.

Cause	What to do
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For DOS users:

Auto line feed is set to on in the default-setting mode.

Make sure that auto line feed is set to off in the default-setting mode so that two line-feed signals are not sent. See “Using the Default-Setting Mode” in Chapter 8.

Line spacing is incorrect.

Cause	What to do
The line-space setting in your software is wrong.	Adjust the line-space setting with your software.

The typestyles or characters set with your software do not print.

Cause	What to do
Your software is not correctly configured.	Make sure that your software is correctly configured for your printer.

The font selected by the default-setting mode or the control panel does not print.

Cause	What to do
Software settings override those made in the default-setting mode or from the control panel.	Use your software to select the font.

The wrong characters are printed.

Cause	What to do
The wrong character table is selected.	Change the character table as described in Chapter 8. Check your software settings.

Paper handling

Single sheets do not feed properly

Single sheets do not feed properly from the sheet feeder.	
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Cause	What to do
Too many sheets may be loaded in the sheet feeder.	Remove the paper from the feeder and reload up to 100 plain paper sheets (or up to 70 special coated sheets, or up to 30 sheets of oversized paper).
Paper is curled or folded.	Use flat, non-damaged paper.
The paper may be too thick or too thin to be fed.	See “Technical Specifications” in Appendix C.
The edge guides are not set correctly.	Adjust the guides against the stack of paper.
Continuous paper may be left in the paper path.	Remove the continuous paper.
The paper-release lever may be set to the wrong position.	Set the paper-release lever to the single-sheet position.
The rear edge guide may not be correctly placed under the output tray.	Fit the rear edge guide under the output tray to match the paper loaded in the sheet feeder.
The rear edge guide does not match the length of index cards loaded.	Position the rear edge guide as shown in “Photo Quality Ink Jet Card” in Chapter 7.
Paper has been compressed and is sticking together.	Fan your stack of paper before loading it into the sheet feeder.
You are printing on oversized paper, and the paper may be obstructed by the output tray.	Raise the output tray by extending the legs under both sides of the tray to keep enough clearance between the output tray and paper support. See “Loading oversized paper into the sheet feeder” in Chapter 7.

Paper may be jammed in the paper path.

Turn off the printer and open the printer cover using the notch on the cover; then gently pull out the paper by turning the knob toward you. Remove any remaining pieces of paper. See “Clearing a paper jam” on page 10-23.

A single sheet does not feed properly from the manual feed slot.	
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Cause	What to do
Paper is curled or folded.	Use flat, non-damaged paper.
The paper may be too thick or too thin to be fed.	See “Technical Specifications” in Appendix C.
Continuous paper may be left in the paper path.	Remove the continuous paper.
The paper-release lever is set to the wrong position.	Make sure that the paper-release lever is set to the single-sheet position. See page 3-2 (Windows) or 5-2 (Macintosh).
The single sheet is not loaded deeply enough.	Load a single sheet into the manual feed slot until it meets resistance.

The printer loads more than one sheet at a time.

Cause	What to do
Too many sheets are loaded in the sheet feeder.	Take the paper stack out of the feeder, remove some sheets, and reload paper. Before you load paper, check the amount of paper you can load in the sheet feeder on page 7-24.
Paper has been compressed and is sticking together.	Fan your stack of paper before loading it in the sheet feeder.
The paper is too thin.	Make sure the paper meets the paper requirements. See “Technical Specifications” in Appendix C.

Ejected paper is wrinkled.

Cause	What to do
The paper is too thin or damp.	Do not store your paper in a damp or humid environment. Store paper in its original packaging. See “Technical Specifications” in Appendix C.

Single sheets do not fully eject.

Cause	What to do
Paper gets stuck	Use the Load/Eject button to eject the paper.
Page length setting is wrong.	Check the page length set by your software and adjust it if necessary.
The paper may be too long.	Use paper that is within the specified size. See “Technical Specifications” in Appendix C.

The banner mode setting is on.	Make sure the banner mode setting is off. If this setting is on, the printer feeds paper a specified length. Change this setting using the default-setting mode. See “Using the Default-Setting Mode” in Chapter 8.
--------------------------------	---

Paper feeding is crooked.

Cause	What to do
The edge guide of the sheet feeder may not match the paper’s width.	Adjust the edge guides.
There may be too much paper in the sheet feeder.	Remove some paper.
You are printing on oversized paper, and the paper may be obstructed by the output tray.	Raise the output tray by extending the legs under both sides of the tray to keep enough clearance between the output tray and paper support. See “Loading oversized paper into the sheet feeder” in Chapter 7.
Single sheets are not loaded far enough.	Load a single sheet into the manual feed slot until it meets resistance.
The paper may be old or creased.	Use only new, smooth sheets of paper.
Make sure that your paper is the proper size and quality.	See Appendix C.

Continuous paper does not feed properly

Regular gaps occur in the printout.

Cause	What to do
Skip-over-perforation may be on.	Set skip-over-perforation to off in the default-setting mode. See “Using the Default-Setting Mode” in Chapter 8.

The perforation is not aligned with the tear-off position.

Cause	What to do
The tear-off position is not properly set.	Adjust the tear-off position using a Micro Adjust button. To use the micro-adjust feature, see “Adjusting the tear-off position” in Chapter 7.
The auto tear-off setting may be turned on in the default-setting mode.	Turn this setting off. See “Using the Default- Setting Mode” in Chapter 8.
The page length setting for continuous paper is not correct in the default-setting mode.	Change the setting using the default-setting mode. See “Using the Default-Setting Mode” in Chapter 8.

The tractor does not feed the paper.

Cause	What to do
The paper-release lever may be set to the wrong position.	Move the paper-release lever to the continuous-paper position.
The paper has come off the tractor feeder.	Reattach the paper to the tractor.

Paper feeding is crooked or the paper jams.

Cause	What to do
The paper supply is obstructed.	Make sure the paper supply is not obstructed by a cable or some other object.
The paper supply is placed too far away.	Make sure that your paper supply is positioned within 1 meter (3 feet) of the printer.
The holes on the sides of the paper are misaligned.	Make sure that the holes on the sides of the paper are even with each other. Also, make sure the sprocket units are locked and their covers are closed.
The paper size or thickness is out of the specified range.	Make sure that the paper size and thickness are within the specified range. See Appendix C.
There may be some slack in the paper.	Adjust the position of the sprocket units.

Continuous paper does not eject properly.

Cause	What to do
The page is too long.	Tear off the last printed page and press the Load/Eject button to feed the paper backward. However, if you are printing on labels, tear off the last sheet that has partially entered the printer, and then press the LF/FF button to feed it forward.
The paper length is out of the paper specification limits.	Use paper that is within the specified specification limits. See Appendix C.

The page length setting for continuous paper in the default-setting mode is not correct.

Change the page length setting for continuous paper in the default-setting mode. See “Using the Default-Setting Mode” in Chapter 8.

The paper is jammed inside the printer.

See the following section to clear the paper jam.



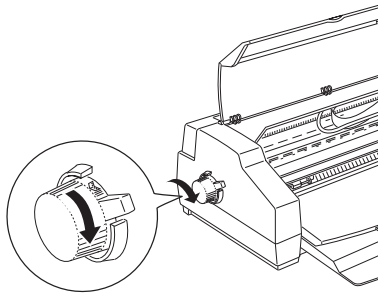
Caution:


Use the knob on the left side of the printer only to clear paper jams and only when the printer is off. Otherwise, you may damage the printer or change the top-of-form position.

Clearing a paper jam

To clear a paper jam, follow the steps below:

- 1 Turn off the printer.
- 2 Open the printer cover.
- 3 Remove continuous paper from the printer if it is loaded. If continuous paper is jammed the printer, tear off the fresh supply at the rear of the printer.
- 4 Turn the knob on the left side of the printer toward you to remove the paper. Remove any remaining pieces.



- 5 If the paper is caught in the paper ejection area, gently pull it out of the printer.
- 6 Close the printer cover and turn the printer back on. Make sure the Paper Out  light is not flashing.

Preventing paper feed and paper jam problems

If you have frequent paper feed or paper jam problems, try these corrective measures:

- ❑ Use a higher-quality paper, one that is not too thin or rough. Make sure it is suitable for ink jet printers. If paper still does not feed properly, you may need to use paper from a different vendor. Also, some types of paper must be fed one sheet at a time.
- ❑ Fan the stack of paper and straighten it before loading.
- ❑ Adjust the edge guides against the stack of paper.
- ❑ Position the output tray properly to keep the paper path clear.
- ❑ Be sure that you do not load too much paper in the sheet feeder. You can load up to 100 sheets of plain paper, 70 sheets of special coated paper, 50 sheets of transparency film, or 30 sheets of high-quality glossy paper. For oversized paper, load up to 30 sheets.
- ❑ Try turning the stack of paper over. Most packages of paper indicate the best side for printing with an arrow on the end of the package. Make sure the best side is loaded printable side down into the sheet feeder or loaded printable side up onto the tractor feeder.
- ❑ When you use the tractor to print on labels, set the auto tear-off feature to off. Otherwise continuous labels may come off the backing and jam the printer.
- ❑ Load sheets of labels into the manual feed slot one at a time. Otherwise, they may not feed properly.

Printing quality

The printed image has gaps or faint areas.

Cause	What to do
The print head nozzles are clogged.	Clean the print heads as described in “Cleaning the Print Heads” on page 10-36.
The paper quality has been reduced due to age.	Use new paper.
The printer driver settings may not be correct.	Select Automatic on the printer driver’s Main menu (Windows) or in the Print dialog box (Macintosh), and make sure the Media Type setting is appropriate for the type of paper loaded in the printer.

The printed image is blurred.

Cause	What to do
Your paper is moist or damp.	Do not store your paper in a damp or humid environment. Store the paper in its original packaging.
The printer driver settings may not be correct.	Select Automatic on the printer driver’s Main menu (Windows) or in the Print dialog box (Macintosh), and make sure the Media Type setting is appropriate for the type of paper loaded in the printer.
The printer driver’s Ink setting is set to Color even though the printer is being used with an empty color ink cartridge installed.	Select Black as the Ink setting in your printer driver. See “Printing with an empty color ink cartridge” on page 9-6. Replace the color ink cartridge.

For DOS users:

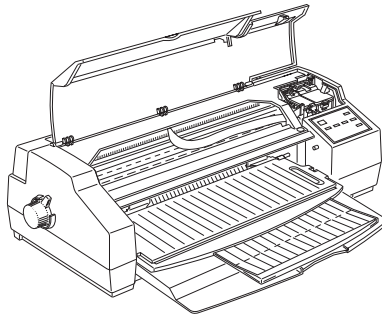
The print direction setting is set to Bi-D in the default-setting mode.

Set the print direction to Uni-D in the default-setting mode. To enter the default-setting mode, see “Changing the default settings” in Chapter 8.

The printed image is smeared.	
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Cause	What to do
The paper you loaded is too thick.	Open the printer cover and set the adjust lever to the “+” position. See Chapter 7, “Paper Handling.”
Special paper was loaded without the support sheet or a regular sheet of paper under it. Glossy film, glossy paper, and transparencies should be loaded with the support sheet or a piece of plain paper under them.	Load the support sheet or a piece of plain paper under the special paper. See Chapter 7, “Paper Handling,” or the instructions packed with your paper.
Multiple sheets of EPSON Photo Quality Glossy Film are loaded.	Load glossy film one sheet at a time with the loading support sheet or a piece of plain paper under the glossy film. If you need to load multiple sheets of glossy film, load only up to 30 sheets and set the top margin of the page to 30 mm or more.

Ink has leaked on the platen. Wipe the inside of the printer as shown below with a soft, clean cloth.



Warning:

Be careful not to touch the gears inside the printer.

The print head nozzles are clogged.

Clean the print heads. See “Cleaning the Print Heads” on page 10-36.

White horizontal lines appear through the text.



Cause

What to do

The print head nozzles are clogged.

Clean the print heads as described in “Cleaning the Print Heads” on page 10-36.

One of the ink cartridges is low on ink.

Check the control panel to confirm that the  or  Ink Out light is flashing, and replace the appropriate ink cartridge.

The MicroWeave option in your printer driver is not selected.

Turn on MicroWeave in your printer driver.

The Media Type setting on the Main menu of the printer driver is incorrect.

Make sure the Media Type setting matches the type of paper loaded in the printer.

**Vertical or horizontal printed lines do not align.
White banding appears between color and black graphics.**

Cause	What to do
The print heads are misaligned.	Align the print heads with the Print Head Alignment utility as described in “Aligning the Print Heads” on page 10-40.
The printing position is misaligned.	Make sure the High Speed option in your printer driver is not selected.
<i>For DOS users:</i> The print direction setting is set to Bi-D in the default-setting mode.	Set the print direction to Uni-D in the default-setting mode as described in “Changing the default settings” in Chapter 8.

Printing quality is not what you expect.

Cause	What to do
The paper loaded is not the paper selected in your application or the printer driver.	Make sure you loaded the correct paper in the printer and that you selected the same media type in your application and/or the printer driver software. Make sure you are using paper that meets the paper requirements for this printer. See “Technical Specifications” in Appendix C.
You are not printing on the correct side of the paper.	Check the paper packaging for the correct side for printing; then load the printable side of the paper face down in the sheet feeder. When using the manual feed slot or tractor feeder, load paper printable side up.

The printer driver settings are not correct.	Check the printer driver settings to make sure they are appropriate. If these settings are correct, check your application because some driver settings are overridden by application settings. Also, for more information on making driver settings, see Chapter 4 for Windows, or Chapter 6 for Macintosh.
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High Speed mode is selected in the printer driver.	To obtain higher quality output, make sure High Speed mode is not selected.
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For DOS users:

The print direction setting is set to Bi-D in the default-setting mode.	To obtain higher quality output, set the print direction to Uni-D in the default-setting mode as described in “Changing the default settings” in Chapter 8.
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Colors are different than you expect.
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Cause	What to do
The color print head nozzles are clogged.	Clean the color print heads as described in “Cleaning the Print Heads” on page 10-36.
Black ink is selected in your printer driver.	Set the Ink setting to Color.
You are not printing on the correct side of the paper.	Check the paper packaging for the correct side for printing; then load the printable side of the paper face down in the sheet feeder. When using the manual feed slot or tractor feeder, load paper printable side up.

The Media Type setting does not match the loaded paper.	Change the Media Type setting in your printer driver to match the type of media you have loaded.
The print head nozzles for a particular color of ink are clogged.	Clean the color print head as described in “Cleaning the Print Heads” on page 10-36.
The ICM (Windows) or ColorSync (Macintosh) setting in your driver is not appropriate for your document.	Set the driver to Automatic.
Your printer and monitor are not properly calibrated for color matching.	See the user’s guides of your image-editing software and your monitor for information on calibrating your system for color matching.
Since monitors and printers produce colors differently, printed colors will not always match on-screen colors perfectly.	See “Tips for Color Printing” in Appendix A.

Colors are not very vibrant.

Cause	What to do
The image was printed on the wrong side of EPSON Ink Jet paper.	Make sure that you are printing on the coated side of the paper. If necessary, flip over the paper and try printing again. If printing has not improved, clean the print heads as described later in this chapter.
The Media Type setting on the Main menu of the printer driver is incorrect.	Make sure the Media Type setting matches the type of paper loaded in the printer.

**Color dots are missing in printed characters or graphics.
The printed color image has gaps or faint areas.**

Cause	What to do
The color print head nozzles are clogged.	Clean the color print head as described in “Cleaning the Print Heads” on page 10-36.

For DOS users:

The Network I/F mode is set to off.	Set the Network I/F mode to on in the default-setting mode as described in “Changing the default settings” in Chapter 8.
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**Black dots are missing in printed characters or graphics.
The printed black image is light or faint.**

Cause	What to do
The black print head nozzles are clogged.	Clean the black print head as described in “Cleaning the Print Heads” on page 10-36.

Photographic images look grainy or rough.

Cause	What to do
The printing position is misaligned.	Align the print heads with the Print Head Alignment utility as described in “Aligning the Print Heads” on page 10-40.
The resolution of the original image data or the resolution setting for the image in your image-editing software may be too low.	Increase the image resolution in your image-editing software. Keep in mind that higher resolution images take longer to print.

Dots are missing in printed characters or graphics.

Cause

What to do

For DOS users:

The Network I/F mode is set to off.

Set the Network I/F mode to on in the default-setting mode as described in “Changing the default settings” in Chapter 8.

Printer utilities

The Status Monitor window does not appear when you are using Windows 95.

Cause

What to do



The Use Print Manager for this port option is checked in the Queue Setup window.

Make sure Use Print Manager for this port box is not checked. Click the Start button, point to Programs, point to Epson, and click Spool Manager4. Then click Queue and Setup in the EPSON Spool Manager window.

Enable bi-directional support for this printer is not selected in the Spool Settings window.

You must select Enable bi-directional support for this printer in the Spool Settings window to use the Status Monitor. To access the Spool Settings window, click the Start button, point to Settings, and click Printers. Right-click the icon for your printer and choose Properties from the drop-down menu. Click the Details tab; then click Spool Settings. Select Enable bi-directional support for this printer.

When you clean the print heads using the Head Cleaning utility, the output quality does not improve.

Cause	What to do
You attempted to clean the print heads while the ink cartridges were low or out of ink.	Check the  or  Ink Out light. When the ink cartridges are low or out, the Head Cleaning utility has no effect. Replace the ink cartridges as needed. See page 9-2.

Interface

When using an optional interface card, the printer does not print or the printout is not what you expected.

Cause	What to do
The optional interface may not be selected with the I/F mode setting.	See “Using the Default-Setting Mode” in Chapter 8.
You may be trying to use an interface card or cable with the wrong specification.	Check the specifications to make sure you can use the interface card or cable with this printer. See Appendix B.
The computer and printer interface settings may not match.	Check your computer user’s guide for the correct settings.

Increasing the Print Speed

Just as printing at a high resolution requires more processing time, printing in color takes longer than printing in black and white because the volume of data in a color document is much greater. For this reason, it is important to be selective in your use of color if you also require a faster print speed.

Even if your document requires the highest resolution and extensive use of color, for example when printing a camera-ready composite that includes color photographs, it may still be possible to optimize the print speed by adjusting other printing conditions. Keep in mind that changing some conditions to increase the print speed may also lower print quality.

The following table shows the factors that inversely affect print speed and print quality (increasing one will decrease the other).

Print quality Print speed	Lower Faster	Higher Slower
Printer software settings		
Print Quality	Economy	SuperFine
MicroWeave	Off	On
High Speed	On	Off
Halftoning	No halftoning	Error Diffusion
Data characteristics		
Image size	Small	Large
Resolution	Low	High

The table below shows the factors related to print speed only.

	Print speed	
	Faster	Slower
Printer software settings		
Ink	Black	Color
Collate*	Off	On
Reverse Order*	Off	On
Flip Horizontal*	Off	On
Data characteristics		
Variety of colors	Grayscale **	Full color
Hardware resources		
System speed	Fast	Slow
HDD free space	Large	Small
Memory free space	Large	Small
Software status		
Running applications	One	Many
Virtual memory	Not in use	In use

*Varies depending on the printer software and application software you are using.

**Grayscale means using black ink only to print varying shades of gray, from pure black to pure white.

Cleaning the Print Heads

If you find that the printed image is unexpectedly faint or dots in the printed image are missing, you may be able to solve these problems by cleaning the print heads, which ensures that the nozzles are delivering ink properly.

You can clean the print heads from your computer using the Head Cleaning utility in the printer software.



If you are using DOS or you can not clean the print heads with this utility, you can use the printer's control panel instead. For more details, see "Cleaning the print heads with the printer's control panel buttons" later in this chapter.

Note:

- ❑ *Print head cleaning uses ink. To avoid wasting ink, clean the print heads only if print quality declines.*
- ❑ *Use the Nozzle Check utility to confirm that the print heads need to be cleaned.*

To clean the print heads, follow the steps below for Windows or see page 10-38 for Macintosh.

For Windows Users:

1. When cleaning the black print head, make sure the Ink Out  light is off. When cleaning the color print head, make sure the Ink Out  light is off. If the corresponding light for the print head you want to clean is on or flashing, see "Replacing an Ink Cartridge" on Page 9-2.
2. Access the Utility menu as described in Chapter 4.
3. Click the Head Cleaning button.

4. Follow the on-screen messages.

While the printer performs the cleaning cycle, the Pause light flashes.



Caution:

Never turn off the printer while the Pause light is flashing. Doing so may damage the printer.

5. After finishing the cleaning, click Print nozzle check pattern in the Head Cleaning dialog box, or print a few lines from a document to confirm that the heads are clean and to reset the cleaning cycle.



Nozzle check pattern:

The above sample is in black and white, but the actual check pattern prints in color.

In the check pattern, if you find that any segments are missing from the test lines, you may need to repeat the head cleaning and print the nozzle check pattern again.

If print quality hasn't improved after repeating this procedure four or five times, try other recommendations listed in this chapter. If print quality still has not improved, contact your dealer.

For Macintosh Users:

1. When cleaning the black print head, make sure the Ink Out  light is off. When cleaning the color print head, make sure the Ink Out  light is off. If the corresponding light for the print head you want to clean is on or flashing, see “Replacing an Ink Cartridge” on Page 9-2.
2. Choose Utility from the Print dialog box as described in Chapter 6.
3. Click the Head Cleaning button.
4. Follow the on-screen messages.

While the printer performs the cleaning cycle, the Pause light flashes.



Caution:

Never turn off the printer while Pause light is flashing. Doing so may damage the printer.

5. After finishing the cleaning, click the confirmation button in the Head Cleaning dialog box, or print a few lines from a document to confirm that the heads are clean and to reset the cleaning cycle. See page 10-37 to see a sample of the nozzle check pattern.

In the check pattern, if you find that any segments are missing from the test lines, you may need to repeat the head cleaning and print the nozzle check pattern again. If print quality hasn't improved after repeating this procedure four or five times, try other recommendations listed in this chapter. If print quality still has not improved, contact your dealer.

Cleaning the print heads with the printer's control panel

1. Make sure the printer is on.
2. Press the Pause button to turn the Pause light on.
3. Make sure the corresponding Ink Out light for the print head you want to clean is off.
4. Press the LF/FF (or Load/Eject) button and the Alt button to clean the black (or color) print head. The printer starts cleaning the print head and the Pause light begins to flash. If you want to clean the other print head, wait until the Pause light stops flashing. It takes about two minutes to clean each print head.



Caution:

Never turn off the printer while the Pause light is flashing. Doing so may damage the printer.

Note:

You cannot clean both black and color print heads at the same time.

5. After the Pause light stops flashing, Press the Pause button to resume printing any data still in its buffer. If the print buffer was clear before you cleaned the print head, send data to resume printing.

Note:

You must print a few lines after each print head cleaning in order to reset the cleaning cycle.

If the print quality does not improve, repeat step 4, then print a few lines to check the output. If print quality doesn't improve after repeating this procedure 4 or 5 times, see "Problems and Solutions" in this chapter. If print quality still does not improve after following the recommendations, contact your dealer.

Aligning the Print Heads

If you notice a misalignment of vertical or horizontal lines, you may be able to solve these problems from your computer using the Print Head Alignment utility in the printer software.

For Windows users:

1. Make sure paper is loaded in the sheet feeder.



Caution:

Use paper at least 210 mm (8.27 inches) wide; for example, A4 size paper loaded short edge first. Otherwise, the print head will spray ink directly onto the platen.

2. Access the Utility menu as described in Chapter 4.
3. Click the Print Head Alignment button.
4. Follow the messages on your screen to align the print heads.

For Macintosh users:

1. Make sure paper is loaded in the sheet feeder.



Caution:

Use paper at least 210 mm (8.27 inches) wide; for example, A4 size paper loaded short edge first. Otherwise, the print head will spray ink directly onto the platen.

2. Choose Utility from the Print dialog box. You see the Utility dialog box.
3. Click the Print Head Alignment button.
4. Follow the messages on your screen to align the print heads.

Using the print head alignment utility for DOS

The print head alignment utility includes both black and color alignment features. To install this utility on your hard drive, insert the EPSON Printer Software CD-ROM into your CD-ROM drive and then type `D:\SETUP` (If your CD-ROM drive uses a different drive letter or you are using the floppy version, substitute it for `D:\`) at the DOS prompt. Follow the directions on the screen. After running the setup program, change to the drive and directory that contains the utility (or set the path to the directory). Then type `EPCALIB` and press Enter. The following window appears:



Make sure your printer is selected. Click Next, then follow the directions on the screen.

Note:

This utility is designed to be run in DOS with or without a mouse.

Using the printer's control panel buttons

If you can not use the print head alignment utility program that came with your printer, then follow these steps to align the print heads.

1. Make sure that the printer is off and paper is loaded in the sheet feeder.



Caution:

Use paper at least 210 mm (8.27 inches) wide; for example, A4 size paper loaded short edge first. Otherwise, the print heads will spray ink directly onto the platen.



2. Hold down the Pause button and turn on the printer to enter the print head alignment mode. Release the buttons.

The printer prints an instruction sheet in English, French, German, Italian, Spanish, and Portuguese that shows you how to align the print heads. Follow these instructions.

3. After aligning the print heads, exit the print head alignment mode by turning off the printer.

Ink Cartridge Problems

If output quality does not improve even after cleaning and aligning the print heads, you may need to replace one or both of the ink cartridges.

To replace an ink cartridge before the  or  Ink Out light is flashing or is on, follow these steps.



Caution:

Once you remove an ink cartridge, it becomes unusable and cannot be reinstalled even if ink remains.

1. Make sure the printer is on.
2. Open the printer cover.
3. Hold down the Alt button for more than three seconds until the print heads moves slightly to the left, which is the ink cartridge replacement position. The Pause light flashes.



Caution:

Do not move the print heads by hand. Always press the Alt button to move them; otherwise you may damage the printer.

Note:

The printer automatically moves the print heads back to their home (far right) position after 60 seconds if you have not started the procedure.

4. Complete the ink cartridge replacement procedure as described from step 4 of “Replacing an Ink Cartridge” on page 9-2.

Contacting Customer Support

If your printer is not operating properly and you cannot solve your problem with the troubleshooting information in this guide and online help, contact customer support services for assistance.

We will be able to help you much more quickly if you are able to give the exact information indicated below.

Serial number of your printer:

(The serial number label is on the back of the printer.)

Printer model:

Brand and model of your computer:

Printer software version:

(See your Version menu.)

Version of Windows (95, 3.1, etc.) you are using now:

Version of software applications you normally use with your printer:

For United Kingdom and the Republic of Ireland users

If you purchased your printer in the UK or the Republic of Ireland, Epson (UK) Limited provides a range of customer services and technical support.

Note:

For customers in the Republic of Ireland, please use the correct dialing codes when dialing the UK telephone numbers listed in the following sections. For example the Enquiry Desk fax number, 01442 227271 should be dialled as 0044 1442 227271 from the Republic of Ireland.

Enquiry Desk

The enquiry desk team can be contacted by calling 0800 220546 in the UK or 1 800 409132 from the Republic of Ireland, by faxing 01442 227271, or via the Internet at info@epson.co.uk. They can provide the following information:

- ❑ Information and literature on new Epson products (also available from Faxon Epson)
- ❑ Where to purchase genuine Epson consumables, accessories and options

Customer Support

Our Customer Support team can provide the following services:

- ❑ Technical information on installing, configuring and operating your Epson products
- ❑ Arranging for faulty Epson products to be repaired within the warranty period

For information on contacting our Customer Support team, please see the Service and Support Information booklet that came with your Epson product.

If this booklet is not available, details can be found on Faxon Epson faxback service, EPtec Bulletin Board Service or on Epson's World Wide Web site. See below for details.

Faxon Epson

Contact Faxon Epson Faxback Service for:

- ❑ Literature and Specifications on the latest Epson products.
- ❑ Support information including troubleshooting tips, switch settings and driver information.

To use Faxon Epson, call 01442 227332 using a touch-tone phone. You will be asked to follow a simple routine to register your document request and once you have entered your telephone and fax numbers, Faxon Epson will fax a copy of the document catalogue to your fax machine.

When you have found the documents that you need in the catalogue, call Faxon Epson again and enter the document ID numbers. The documents will be faxed to you automatically.

Eptec - Bulletin Board Service for latest drivers and utilities

You can call the Epson Bulletin Board Service on 01442 227479. No membership is required. Make sure that your communications software is set to 8 data bits, 1 stop bit, no parity bit, ANSI terminal mode emulation and a modem speed of up to 28.8 Kbps. Downloading protocols supported include Xmodem, Ymodem and Zmodem. See the documentation that came with your communications software and modem for more information.

When you first connect to the Bulletin Board Service, you will be asked for your name, company name, phone number and a password (which you can invent yourself).

World Wide Web

If you can connect to the Internet and have a Web Browser, you can access Epsons World Wide Web site at <http://www.epson.com>. Here you will find information on the latest Epson Products, software drivers and answers to frequently asked questions.

For Australian users

EPSON Australia wishes to provide you with a high level of Customer Service. As well as this *User's Guide*, we provide the following sources for obtaining information:

EPSON FAXBACK

EPSON FAXBACK will fax you the latest specifications and pricing for most EPSON products offered in Australia. There is also Technical Information including details of the latest software and drivers available. Phone (02) 9903 9075 and the system will guide you through a number of choices before faxing the information to your fax machine.

EPSON Bulletin Board System

This is where you can download the latest software and drivers. Visit the BBS to check out the latest versions. If you have a modem, phone (02) 9903 9070.

Internet URL <http://www.epson.com.au>

Access the Epson Australia World Wide Web pages. Worth taking your modem here for the occasional surf! You can get the same information as offered on the EPSON FAXBACK and the EPSON Bulletin Board plus more.

Your Dealer

Don't forget that your dealer can often help identify and resolve problems. The dealer should always be the first call for advice on problems. They can often solve problems quickly and easily as well as give you advice on the next step to take.

EPSON Helpdesk

EPSON Helpdesk is provided as a final backup to make sure our clients have access to advice. Operators on the Helpdesk can aid you in diagnosing hardware and software problems. They can also advise you on the latest EPSON products and where the nearest dealer or service agent is located. Many types of queries are answered here.

Access to the Helpdesk is at no charge to purchasers of new products for the first 12 months of that product's life. After that period, a different phone number is used and charges are debited to your telephone account. The current charge rates are specified when you ring the chargeable support number. You are asked to signify your acceptance before any charges are incurred.

The Helpdesk numbers are:

first 12 months	(02) 9903 9040
after 12 months	1 902 263 192
fax number	(02) 9903 9189

We encourage you to have all the relevant information on hand when you ring. The more information you prepare, the faster we can help solve the problem. This information includes the *User's Guide* for your EPSON product, type of computer, operating system, application programs, and any other information you feel is required.

For Hong Kong and Singapore users

Contact the phone or fax number shown below for your area:

Hong Kong

Phone: 2585 4300

Fax: 2827 7083

Singapore

Phone: 3377911

Fax: 3341185

Appendix A

Tips for Color Printing

Basics of Color A-2
Image Resolution and Image Size A-5
Basics of Color Documents A-7



Basics of Color

This section describes the basic properties of color, the relationships between colors, and how to use color to improve the quality of your printed documents.

Properties of color

Color is composed of three properties: Hue, Saturation, and Brightness.

Hue	The name of the color, such as red, blue, or violet. The circle that represents the relationship between all hues is called the hue circle.
Saturation	The vividness of the color. This represents the amount of gray in proportion to the hue.
Brightness	The relative lightness or darkness of the color.

The method for representing these properties is called the Munsell renotation color system. The hue circle and the Munsell renotation color system are useful to understand the properties of color. See also the *Color Guide*.

Synchronizing monitor colors and printer colors

Your printer produces images by printing tiny patterns of ink dots on paper. It uses the colors cyan (C), magenta (M), yellow (Y), and black (K) to create a blending effect that makes you think you are seeing millions of colors. This type of color, produced by pigments that absorb some colors of light and reflect others, is called subtractive.

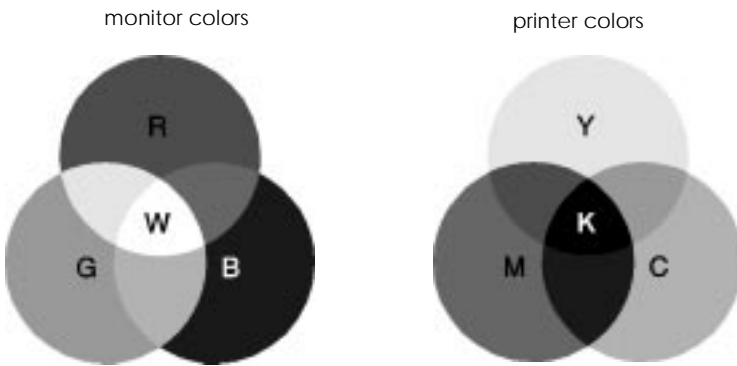
Note:

In theory, pure cyan, magenta, and yellow should produce black, but actually they produce a muddy brown and must be combined with black ink to produce a true black (K).

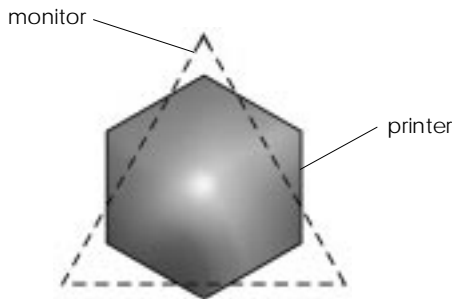
Your monitor produces images by illuminating color phosphors on the screen with an electron gun. (A phosphor is a substance that gives off light when irradiated.) Each screen point (pixel) has three colored phosphors: red (R), green (G), and blue (B).

Since the printer and monitor produce color images differently, and also the available range of color produced by the monitor and printer are different, the image on the screen does not exactly match your printed output all of the time. If you want to adjust, or calibrate, the printed color to more closely match the on-screen color, you may have to experiment with the printer driver settings.

Additionally, color management software is available from a variety of software and monitor companies to help you match colors produced by your monitor and printer. See your image-editing software user's guide for information on color matching.



The range of colors that can be displayed:



Note:

When printing a scanned image, you may find it more difficult to match colors. Because scanners create the original image data using CMYK, the data format of your image will be changed twice.

Process of color printing

A printer produces color images by printing tiny patterns of ink dots using CMYK colors as mentioned in the previous section. Because most ink jet printers are not able to print different gradations of the three primary colors, they must use a halftoning method in order to represent millions of colors or the gradation of colors as follows:



Dithering and error diffusion are the most commonly used halftoning methods.

Dithering

Dithering uniformly aligns individual dots of different colored inks to create the appearance of neutral colors. This method is suitable for printing documents that contain large areas of solid color, such as bar charts and graphs.

Error diffusion

Error diffusion blends individual colored dots with the colors of the surrounding dots to create the appearance of natural colors. By blending colored dots, the printer can achieve excellent colors and subtle color gradation. This method is best suited for printing documents that contain finely detailed graphics or photographic images.

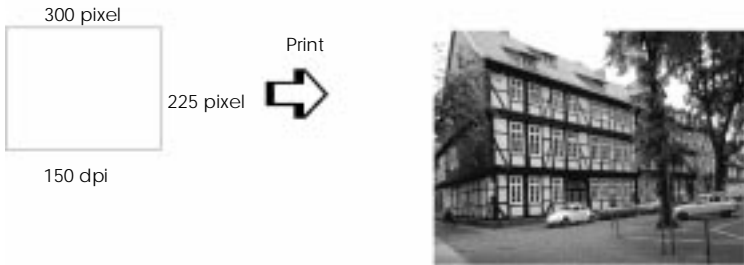
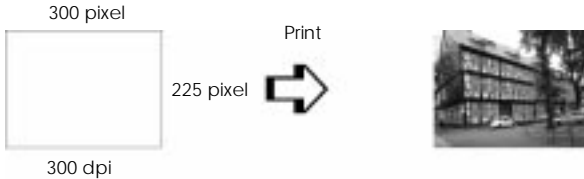
Image Resolution and Image Size

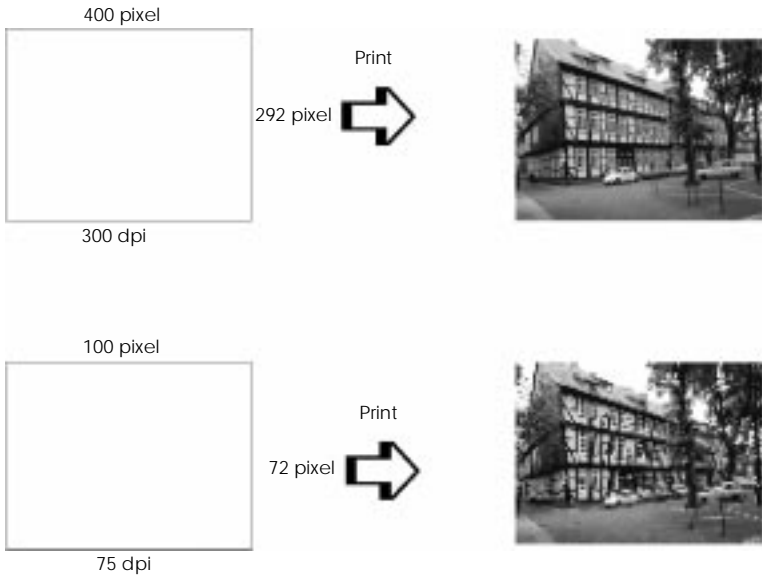
The resolution of your original image affects the quality of your printouts. Generally, the higher the resolution, the better the print quality. However, keep in mind that the higher the resolution, the longer the wait for processing and printing a document.

Generally, the printed image size is in inverse proportion to the image resolution, as shown below. The larger the image size, the lower the image resolution. Conversely, the smaller the image size, the higher the image resolution.

Note:

Some applications have a function that can correct this relationship.





Since increasing the image size means decreasing the image resolution, you must take care that print quality or color tone is not degraded when working with images pasted into documents created with word processing software. To avoid print quality and color tone problems, change the size and the resolution of the image in your graphics application before pasting it into your document.

Basics of Color Documents

To help you use color to maximize your document's impact on its readers, determine the who, what, when, where, why, and how of color printing.

Know WHO your readers are and WHAT your purpose is

Your documents are intended to communicate information, opinions, or feelings to one or more people and also to get results. Therefore, first you need to think about who is going to see your work: customer, co-worker, or other; and what your purpose is: to advise, sell, propose, and so on.

For example:

A marketing proposal with generous quantities of bright, fluorescent colors might fail to impress a conservative accounting firm, yet win over a music video company.

Know WHEN to use color

While color can enhance any document, you need to decide when color helps expand understanding of your message and when it distracts the reader. Sometimes a serious business message is best delivered without additional colors. (Remember that white and black are colors, too.)

For example:

A job offer letter to a prospective employee works best in black and white, while a list of safety rules benefits from attention-getting color.

Decide WHERE color will most benefit your document

If you use color on every page or all over a page, you may lose not only the impact of color, but also the clarity and readability of your work. When used consistently and strategically, color breaks up the monotony of black-and-white text reading.

Note:

- Avoid placing too many color pictures, tables, or icons on a page.*
- Size your color images so that they do not overpower text or graphics.*
- Avoid using too much colored text. It is more difficult to read than black-on-white or white-on-black text.*

Know WHY you are using color

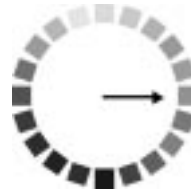
Color adds interest and clarity, and makes documents appear easier to understand. Just as you use fonts and graphics to create appeal and capture attention, color provides an additional visual interpretation of a document that influences the reader.

For example:

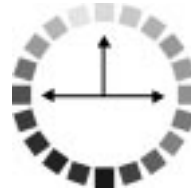
An overhead presentation of sales results by territory is far more interesting and memorable if you show the figures with colored charts and graphs.

Know How to select colors

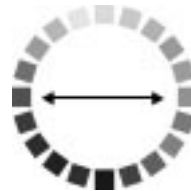
- Use just one hue in the hue circle to make your document unified. Modify saturation or brightness to add interest.



- Use contrasting hues to make your work more eye-catching.



- Use of complementary colors in documents is generally not recommended.



- Determine a rule for using color throughout the document.

Note:

See the Color Guide for the hue circle.

Appendix B

Using Optional Interfaces

Available Interfaces B-2

Installing Optional Interfaces B-3

 The C82305*/C82306* serial interface card B-5



Available Interfaces

You can use various interface cards to supplement the capabilities of your printer's built-in hardware interface. The following EPSON interface cards are compatible with your printer:

Interface card	Model number
Serial Interface Card	C82305*/C82306*
32KB Serial Interface Card	C82307*/C82308*
32KB Parallel Interface Card	C82310*
32KB IEEE-488 Interface Card	C82313*
LocalTalk™ Interface Card	C82312*
Twinax Interface Card	C82315*
Coax Interface Card	C82314*
Ethernet Interface Card	C82331*
Type B Bidirectional Parallel Interface Card	C82345*

*The asterisk is a substitute for the last digit, which varies by country.

If you are not sure whether you need an optional interface or if you want to know more about interfaces, contact your dealer.

If you are planning to install the LocalTalk interface card in your printer, you will need two LocalTalk Locking Connector Kits (DIN-8 version). Attach one connector box to the AppleTalk interface on the printer and the other box to the printer port on the Macintosh. Then attach the LocalTalk cable between the two connector boxes. See the owner's guide that comes with the connector kits for more details.

Installing Optional Interfaces

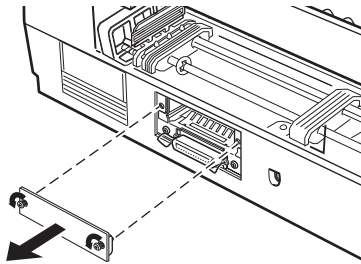
1. Turn off the printer.
2. Unplug the power cord from the electrical outlet (and from the back of the printer, if your printer's power cord is removable).



Warning:

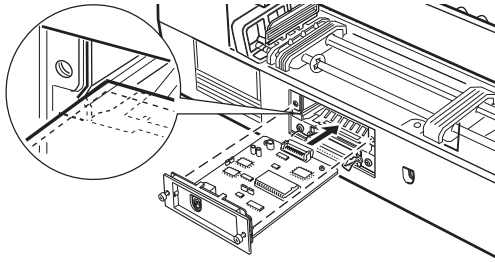
Do not install the interface card when the printer is connected to an electrical outlet. If you do, you may damage the printer or your computer.

3. Turn the printer around so that its back faces you, and disconnect any existing interface cable.
4. Use a cross-head screwdriver to remove the two screws securing the shield plate to the optional interface slot; then lift off the plate. Be sure to keep both screws; you may need to use them again when you re-install the shield plate.



5. Be sure to set any switches and jumpers on the card. See the interface card's manual for details. If your interface card has a jumper named JG, make sure that you set it to on, or the card will not work properly.

- Slide the interface card along the slots on both sides of the interface compartment. Push it in firmly to fully insert the connector at the rear of the interface card into the printer's internal socket.



- Secure the interface card in the slot with the two screws included with the interface card.
- Connect the proper interface cable to the interface card and to your computer. If the cable has a grounding wire, connect it with one of the screws securing the parallel interface.

Also, if you are using more than one computer, reconnect the other interface cable.

- Make sure the printer is turned off. Then plug in the power cord.

Before you use the optional interface, you may need to change the settings for the interface option in the default-setting mode. If you need to change any settings, see "Changing the default setting." in Chapter 8 for instructions.

To remove the interface card, follow the above steps in reverse order.

The C82305/C82306* serial interface card*

To use the C82305*/C82306* interface card, see the sections below to set the correct baud rate, handshake timing, and error handling.

For all other data transfer conventions, such as word structure and communications protocol, see the C82305*/C82306* interface card manual.

Selecting the baud rate

You can select from the following baud rates: 600, 1200, 2400, 4800, 9600, and 19200 bps (bits per second). To set the baud rate, see the bit-rate selection table in the C82305*/C82306* interface card manual.

Handshake timing

When the vacant area for data in the input buffer drops to 256 bytes, the printer outputs an X-OFF code or sets the DTR flag to 1 (MARK) to indicate that it cannot receive data. When the vacant area for data in the buffer increases to 512 bytes, the printer outputs an X-ON code or sets the DTR flag to 0 (SPACE) to indicate that it is ready to receive data.

Error handling

When the printer detects a parity error, it prints an asterisk (*). The printer ignores all other errors, including framing and overrun errors.

Appendix C

Specifications



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International character sets	C-32
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Technical Specifications

Printing

Printing method: On-demand ink jet

Nozzle configuration: Monochrome (black) 128 nozzles
Color (cyan, magenta, yellow) 192 nozzles
(64 (each color) × 3)

Printable columns and printing speeds:

Character Pitch (characters per inch)	Printing Column	LQ Printing Speed (characters per second)	Draft Printing Speed (characters per second)
10	136	400	800
12	163	480	960
15	204	600	1200
17 (10 condensed)	233	684	1378
20 (12 condensed)	272	800	1600

Resolution: Maximum 1440 dpi × 720 dpi

Print direction: Bidirectional with logic seeking for text and graphics. (Auto print direction can be set in the default-setting mode.)

Control code: ESC/P 2 and expanded raster graphics code
IBM XL24E emulation code

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

Paper feed speed: 107 milliseconds per 1/3-inch line

Input buffer: 64KB

Bitmap fonts:

Font	10 cpi	12 cpi	15 cpi	Proportional
EPSON Roman	○	○	○	○
EPSON Sans Serif	○	○	○	○
EPSON Courier	○	○	○	—
EPSON Prestige	○	○	○	—
EPSON Script	○	○	○	—

You can select other font/pitch combinations using ESC/P 2 commands. See "Command List" on page C-21 for more information.

Scalable fonts:

Font	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

Character tables: 1 italic and 26 graphics character tables

Character sets: 14 international character sets and 1 legal character set

Paper

Note:

Since the quality of any particular brand or type of paper may be changed by the manufacturer at any time, EPSON cannot attest to the quality of any non-EPSON brand or type of paper. Refer to the specifications below and test samples of paper stock before purchasing large quantities or printing large jobs.

Single sheets:

Size	A2 (420 × 594 mm) Super A3/B (13 × 19 inches) A3 (297 × 420 mm) Ledger (11 × 17 inches) US C (17 × 22 inches) A4 (210 × 297 mm) Letter (8.5 × 11 inches) Legal (8.5 × 14 inches) Half Letter (5.5 × 8.5 inches) Executive (190.5 × 254 mm) B3 (364 × 514 mm) B4 (257 × 364 mm) B5 (182 × 257 mm)
Paper types	Plain bond paper, special papers distributed by EPSON
Thickness	0.065 mm to 0.11 mm (0.0025 to 0.004 inch)
Weight	64 g/m ² (17 lb) to 90 g/m ² (24 lb) for sheet feeder 52 g/m ² (14 lb) to 90 g/m ² (24 lb) for manual feed slot

Transparencies, Glossy film:

Size	Super A3/B (13 × 19 inches)* A3 (297 × 420 mm)* A4 (210 × 297 mm) Letter (216 × 279 mm) A6 (105 × 148 mm)* *Glossy film only
Paper types	Special papers distributed by EPSON
Thickness	0.13 mm to 0.15 mm (0.005 to 0.006 inch)

Glossy paper:

Size	A2 (420 × 594 mm) A3 (297 × 420 mm) A4 (210 × 297 mm) Letter (216 × 279 mm)
Paper types	Special papers distributed by EPSON
Thickness	0.17 mm to 0.18 mm (0.0066 to 0.0070 inch)

Envelopes:

Size	No. 10 (240 × 104 mm) DL (220 × 110 mm) C5 (229 × 162 mm)
Paper types	Plain bond paper, air mail
Thickness	0.16 mm to 0.52 mm (0.006 to 0.02 inch)
Weight	45 g/m ² (12 lb) to 90 g/m ² (24 lb)

Index cards:

Size	A6 (105 × 148 mm) 5 × 8" (127 × 203 mm) 10 × 8" (254 × 203 mm)
Paper types	Special papers distributed by EPSON
Thickness	Less than 0.23 mm (0.0091 inch)
Weight	188 g/m ² (50 lb)

Self Adhesive sheets:

Size:	A4 (210 × 297 mm) Letter (216 × 279 mm)
Paper types:	Plain paper (use labels that completely cover the backing sheet), special papers distributed by EPSON.
Total thickness:	Maximum 0.2 mm
Continuous paper:	
Size:	101.6 mm to 406.4 mm × 101.6 mm (minimum folding length)
Paper types:	Plain paper
Thickness:	0.065 mm to 0.1 mm
Weight:	52 g/m ² to 82 g/m ² (14 lb to 22 lb)
Continuous labels:	
Size:	Backing sheet: 101.6 mm to 406.4 mm × 101.6 mm (minimum folding length) Label sheet: Minimum 63.5 mm × 23.9 mm
Paper types:	Plain paper
Thickness:	Total thickness: Maximum 0.2 mm Label thickness: Maximum 0.12 mm
Banner paper:	
Size:	210 mm to 432 mm × 5 m
Paper types:	Plain paper, special papers distributed by EPSON
Thickness:	0.08 mm to 0.1 mm (0.003 to 0.004 inch)
Weight:	64 g/m ² to 82 g/m ² (17 lb to 22 lb)

Back Light Film:

Size:	A2 (420 × 594 mm) A3 (297 × 420 mm)
Paper types	Special papers distributed by EPSON
Thickness	0.13 to 0.14 mm

Note:

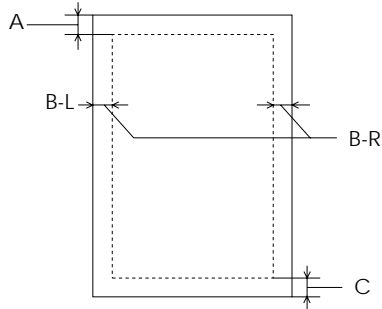
- Poor quality paper may reduce print quality and cause paper jams and other problems. If you encounter problems, switch to a higher grade of paper.*
- Do not load curled or folded paper.*
- Ink jet paper, envelopes, glossy film, glossy paper, transparencies and continuous or single sheet self adhesive sheets are only usable under normal conditions:*

Temperature:	15 to 25°C (59 to 77°F)
Humidity	40 to 60% RH
- EPSON Photo Quality Glossy Film and Self Adhesive Sheets should be stored under the following conditions:*

Temperature:	15 to 30°C (59 to 86°F)
Humidity	20 to 60% RH
- Use of the optional Banner Paper Kit is required for EPSON Banner Paper.*

Printable area:

Single sheets/index cards



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

B: The minimum left margin* is 3.0 mm (0.12 inch).

*For oversized paper, this margin is 25 mm for A3 landscape, A2 portrait, US B landscape, and US C portrait.

Move the right edge guide to the right as far as it will go; then load paper against the right side of the sheet feeder.

The minimum right margin* is 3 mm (0.12 inch).

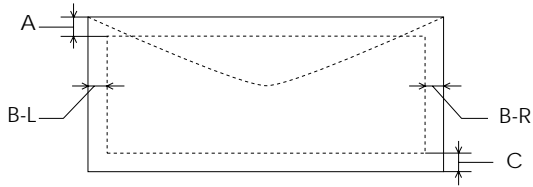
*For oversized paper, this margin is 50 mm for A3 landscape and A2 portrait, and 62 mm for US B landscape and US C portrait.

Note:

The maximum printable width is 345 mm (13.6 inches).

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

Envelopes



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

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

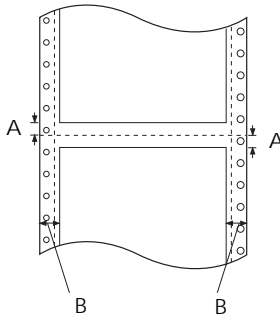
The minimum right margin is 3.0 mm (0.12 inch).

C: The minimum bottom margin is 14.0 mm (0.55 inch).

Note:

Load envelopes flap edge first.

Continuous paper



A The minimum top and bottom margins above and below the perforation are 9.0 mm (0.35 inch).

B The minimum left and right margins are 13 mm (0.51 inch).

Note:

The maximum printable width is 345 mm (13.6 inches).

Ink cartridges

Black ink cartridge (S020108):

Color	Black
Print capacity*	900 pages/A4 (ISO/IEC 10561 Letter Pattern at 360 dpi)
Cartridge life	2 years from production date (within 6 months after opening package, at 25°C (77°F))
Temperature	Storage: -20 to 40°C (-4 to 104°F) 1 month at 40°C (104°F) Transit: -30 to 60°C (-22 to 140°F) 1 month at 40°C (104°F) 120 hours at 60°C (140°F) Freezing:** -16°C (3.2°F)
Dimensions	27.8 mm (W) × 52.7 mm (D) × 38.5 mm (H)

Color ink cartridge (S020089):

Colors	Cyan, Magenta, and Yellow
Print capacity*	300 pages (A4, 360 dpi, 5% duty each color)
Cartridge life	2 years from production date (within 6 months of opening the package at 25°C (77°F))
Temperature	Storage: -20 to 40°C (-4 to 104°F) 1 month at 40°C (104°F) Transit: -30 to 60°C (-22 to 140°F) 1 month at 40°C (104°F) 120 hours at 60°C (140°F) Freezing:** -18°C (-0.4°F)
Dimensions	42.9 mm (W) × 52.7 mm (D) × 38.5 mm (H)

* The print capacity may vary, depending on how often you use the print head cleaning function.

** It thaws and is usable after approximately 3 hours at 25°C (77°F).

**Caution:**

- EPSON recommends the use of genuine EPSON ink cartridges. Other products not manufactured by EPSON may cause damage to your printer not covered by EPSON's warranties.
- Do not use an ink cartridge if the date on the package has expired.



Mechanical

Paper feed method:	Friction, tractor feeder
Paper path:	Sheet feeder, front entry Manual feed slot, rear entry Tractor feeder, rear entry
Sheet feeder capacity:	100 sheets at 64 g/m ² (17 lb) paper 70 sheets* of EPSON special paper 50 sheets of transparency film *For oversized special paper such as Super A3/B and A2, the sheet feeder capacity is 30 sheets.
Total print volume:	75,000 pages (A3, text only)
Dimensions:	Storage Width: 666 mm (26.2 inches) Depth: 333 mm (13.1 inches) Height: 202 mm (8.0 inches) Printing Width: 666 mm (26.2 inches) Depth: 619 mm (24.4 inches) (maximum) Height: 202 mm (8.0 inches)
Weight:	15 kg without the ink cartridges

Electrical

	120V Model	220–240V Model
Input voltage range	103.5 to 132V	198 to 264V
Rated frequency range	50 to 60 Hz	
Input frequency range	49.5 to 60.5 Hz	
Rated current	0.7A	0.4A
Power consumption	Approx. 21W (ISO/IEC 10561 Letter Pattern)	

Note:

Check the label on the back of the printer for the voltage of your printer.

Environmental

Temperature:

Operation: 10 to 35°C (50 to 95°F)

Storage:^{*1} -20 to 60°C (14 to 140°F)

1 month at 40°C (104°F)

120 hours at 60°C (140°F)

Humidity:

Operation: 20 to 80% RH

Storage:^{*1*2} 5 to 85% RH

^{*1}Stored in shipping container

^{*2}Without condensation

Safety approvals



Safety standards:

U.S. model	UL 1950 with D3, CSA 22.2 950 with D3
European model	EN60950 (TÜV, NEMKO)

EMC:

U.S. model	FCC part 15 subpart B class B
------------	-------------------------------

European model	EN 55022 (CISPR Pub. 22) class B
	EN 50082-1
	IEC 801-2
	IEC 801-3
	IEC 801-4
	EN 61000-3-2
	EN 61000-3-3
	AS/NZS 3548 Class B

Interface Specifications

Your printer is equipped with an 8-bit parallel interface.

Parallel interface

The built-in parallel interface has the following characteristics:

Forward channel

Data format:	8-bit parallel, IEEE-1284 compatibility mode
Synchronization:	$\overline{\text{STROBE}}$ pulse
Handshake timing:	BUSY and $\overline{\text{ACKNLG}}$ signals
Signal level:	TTL compatible (IEEE-1284 level 1 device)
Connector:	36-pin 57-30360 Amphenol connector or equivalent

Pin assignments

The parallel interface connector pin assignments and a description of the interface signals are shown in the table below.

Signal Pin	Return Pin	Signal	Direction	Description
1	19	$\overline{\text{STROBE}}$	IN	$\overline{\text{STROBE}}$ pulse to read data.
2	20	DATA 0	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.
3	21	DATA 1	IN	
4	22	DATA 2	IN	
5	23	DATA 3	IN	
6	24	DATA 4	IN	
7	25	DATA 5	IN	
8	26	DATA 6	IN	
9	27	DATA 7	IN	
10	28	$\overline{\text{ACKNLG}}$	OUT	About a 5- μ s pulse. LOW indicates data has been received and the printer is ready to accept more data.

Signal Pin	Return Pin	Signal	Direction	Description
11	29	BUSY	OUT	A HIGH signal indicates the printer can not 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	Pulled up to +5 V through 1 k Ω resistance
14	30	$\overline{\text{AUTO FEED XT}}$	IN	Not used
15	-	NC	-	Not used
16	-	GND	-	Logic ground level
17	-	CHASSIS GND	-	Printer's chassis ground, which is connected to the logic ground.
18	-	Logic H	OUT	Pulled up to +5 V through 3.9 k Ω 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.

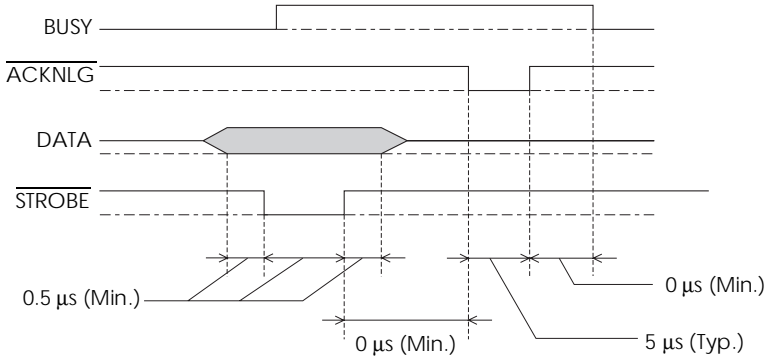
Signal Pin	Return Pin	Signal	Direction	Description
32	29	$\overline{\text{ERROR}}$	OUT	This signal level goes LOW when the printer: 1) Is out of paper 2) Has jammed paper 3) Is in an error state 4) Is out of ink
33	-	GND	-	Same as for Pins 19-30
34	-	NC	-	Not used
35	-	+5 V	OUT	Pulled up to +5 V through 3.3 K Ω resistance
36	30	$\overline{\text{SLIN}}$	IN	Not used

Note:

- The column heading "Direction" refers to the direction of signal flow as viewed from the printer.
- "Return" denotes the twisted-pair return 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.

Timing chart

The figure below shows the timing chart for the parallel interface.



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

Reverse channel

Transmission mode:	IEEE 1284 nibble mode
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
Connector:	36-pin 57-30360 Amphenol connector or equivalent

Pin assignments

The parallel interface connector pin assignments and a description of the interface signals are shown in the table below.

Signal Pin	Return Pin	Signal	Direction	Description
1	19	HostClk	IN	Host clock signal.
2	20	DATA 0	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.
3	21	DATA 1	IN	
4	22	DATA 2	IN	
5	23	DATA 3	IN	
6	24	DATA 4	IN	
7	25	DATA 5	IN	
8	26	DATA 6	IN	
9	27	DATA 7	IN	
10	28	PtrClk	OUT	
11	29	PtrBusy/ DataBit - 3, 7	OUT	Printer busy signal and reverse channel transfer data bit 3 or 7.
12	28	AckDataReq/ DataBit - 2, 6	OUT	Acknowledge data request signal and reverse channel transfer data bit 2 or 6.
13	28	Xflag/ DataBit - 1, 5	OUT	X-flag signal and reverse channel transfer data bit 1 or 5
14	30	HostBusy	IN	Host busy signal.
15	-	NC	-	Not used
16	-	GND	-	Logic ground level
17	-	CHASSIS GND	-	Printer's chassis ground, which is connected to the logic ground.
18	-	Logic H	OUT	Pulled up to +5 V through 3.9 k Ω resistance
19-30	-	GND	-	Logic ground level
31	30	$\overline{\text{INIT}}$	IN	Not used.

Signal Pin	Return Pin	Signal	Direction	Description
32	29	$\overline{\text{DataAvail/}}/$ DataBit - 0, 4	OUT	Data available signal and reverse channel transfer data bit 0 or 4.
33	-	GND	-	Same as for Pins 19-30
34	-	NC	-	Not used
35	-	+5 V	OUT	Pulled up to +5 V through 3.3 K Ω resistance.
36	30	1284-Active	IN	1284 active signal.

Note:

The column heading “Direction” refers to the direction of signal flow as viewed from the printer.

Serial interface

The printer’s built-in serial interface is based on the RS-423 standard. This interface has the following characteristics:

Standard:	Based on RS-423
Synchronization:	Synchronous
Bit rate:	Max. 1.8 Mbps.
Handshaking:	X-ON/X-OFF, 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 (Part number M0197)

Initialization

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

Hardware initialization	* The printer is turned on.
Control panel initialization	* Hold down Pause button for five seconds. * 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.

Each kind of initialization has slightly different effects. All three methods reset the font according to the default settings selected using the control panel. However, the control panel initialization does not initialize the printer mechanism, ESC @ does not initialize the printer mechanism, clear the input data buffer, or clear the user-defined character set.

Note:

When the printer initializes, all lights on the control panel come on for a moment and they return to their previous status.

Command List

C

This section lists the available printer commands by topic. Your printer works with the following commands.

ESC/P 2 control codes

Selecting EPSON ESC/P 2 printer in your software allows you to use the most advanced font and graphics handling available. See the *ESC/P Reference Manual* for details.

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 I, 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 SP, 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 (e, ESC (i, ESC (\, ESC (s

Color:

ESC r, ESC (r

Printing mode:

ESC (K

IBM XL24E emulation control codes

This printer emulates the IBM Proprinter with the following commands.
For detailed information, see IBM's X24/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^{*1}), ESC 0, ESC 1, ESC 2, ESC 3,
ESC 3 (AGM^{*1}), 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^{*1})

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 \

Bitimage:

ESC K, ESC L, ESC Y, ESC Z, ESC [g, ESC * (AGM^{*1})

^{*1} Alternate Graphics Mode

Character Tables

These character tables are selected with the default-setting mode or by using software commands.

Note:

Most of the tables are the same as the PC437 table for hex codes 00 through 7F and only the characters for hex codes 80 through FF are shown for that kind of tables.

PC437 (U.S., Standard Europe)

PC437 Greek (Greek)

PC850 (Multilingual)

PC853 (Turkish)

PC855 (Cyrillic)

PC852 (East Europe)

PC857 (Turkish)

C

PC860 (Portuguese)

PC863 (Canadian-French)

PC865 (Norwegian)

PC866 (Russian)

PC861 (Icelandic)

PC869 (Greek)

BRASCI
(Brazilian, Portuguese)

Abicomp
(Brazilian, Portuguese)

C

Roman 8

ISO Latin 1

MAZOWIA (Poland)

Code MJK (CSFR)

ISO 8859-7 (Latin/Greek)

ISO Latin 1T (Turkish)

Bulgaria (Bulgaria)

C

PC774 (LST 1283:1993)

Estonia (Estonia)

ISO8859-2

PC866 LAT. (Latvian)

Italic

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 with the 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 with the default-setting mode or with the ESC R command.

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

Characters available with ESC (^) command

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

C

Glossary

The following definitions apply specifically to printers.

AGM (Alternate Graphics Mode)

An option that improves the quality of your printout when using the printer in IBM X24E emulation mode.

application

A software program that helps you carry out a particular task, such as word processing or financial planning.

ASCII

American Standard Code for Information Interchange. A standardized coding system for assigning numerical codes to letters and symbols.

auto line feed

When this feature is selected in the default-setting mode, each carriage-return code (CR) is automatically followed by a line-feed (LF) code.

banding

The horizontal lines that sometimes appear when printing graphics. This occurs when the print head carriage return is misaligned. See also *MicroWeave*.

bidirectional printing

Printing in which the print heads print in both directions. This increases the speed of printing.

bit

A binary digit (0 or 1), which is the smallest unit of information used by a printer or computer.

brightness

The lightness or darkness of an image.

buffer

The portion of the printer's memory used to store data before printing it.

byte

A unit of information consisting of eight bits.

characters per inch (cpi)

A measure of the size of text characters, sometimes referred to as pitch.

character table

A collection of letters, numbers, and symbols that provides you with the characters used in a particular language.

CMYK

Cyan (blue-green), magenta, yellow, and black. These colored inks are used to create the subtractive system array of printed colors.

ColorSync

Macintosh software that is designed to help you get WYSIWIG (what you see is what you get) color output. This software prints colors as you see them on your screen.

control code

Special codes used to control printer functions, such as performing a carriage return or line feed.

cpi (characters per inch)

A measure of the size of text characters, sometimes referred to as pitch.

default

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

default-setting mode

A feature that allows experienced users to make special settings that they may not be able to make in their software or the driver.

dithering

A halftoning method in which dots are arranged in an orderly pattern. Dithering works best for printing images with solid colors, such as charts and graphs. See also *Halftoning*.

dot matrix

A method of printing in which each letter or symbol is formed by a pattern (matrix) of individual dots.

dpi

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

driver

A software program that sends instructions to a computer peripheral to tell it what to do. For example, your printer driver accepts print data from your word processing application and sends instructions to the printer on how to print this data.

economy printing

Printing in which images are printed with fewer dots to save ink.

emulation

Emulation means using the control codes of another kind of printer. Most users will never need to make this setting but some experienced users may find this helpful.

Error Diffusion

This halftoning setting smooths out edges by randomly placing dots of varying colors. This has the opposite effect of the Finest Detail setting.

ESC/P

Abbreviation for Epson Standard Code for Printers. This system of commands gives you control of your printer from your computer. It is standard for all EPSON printers and supported by most application programs for personal computers.

ESC/P 2

The enhanced version of the ESC/P printer command language. Commands in this language produce laser-like features, such as scalable fonts and enhanced graphics printing.

Finest Detail

This printer driver setting automatically makes your printed images sharper and clearer. This has the opposite effect of the Error Diffusion setting. Be aware that this may increase the time required for printing.

font

A style of type designated by a family name.

grayscale

A scale of shades of gray from black to white. Grayscale is used to represent colors when printing with black ink only.

halftones

Patterns of black or colored dots used to reproduce an image.

halftoning

A method of using dot patterns to represent an image. Halftoning makes it possible to produce varying shades of gray using only black dots, or a nearly infinite array of colors using only a few colors of dots.

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. This provides faster printing. This is also called bidirectional printing.

initialization

Returns the printer to its defaults (fixed set of conditions). This happens every time you turn on the printer or reset the printer.

ink jet

A method of printing in which each letter or symbol is formed by precisely spraying ink onto paper.

interface

The connection between the computer and a peripheral such as a printer. Generally, printers have two interfaces, parallel and serial. A parallel interface transmits data one byte, or eight bits, at a time. A serial interface transmits data one bit at a time.

italic

A typestyle in which the characters slant. *This sentence is italicized.*

line feed

A control code that advances the paper one line space.

loading position

The position to which the paper is automatically loaded.

IPS

Inches per second. This scale is used to measure the print head speed.

media

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

MicroWeave

Printing in which images are printed in finer increments to reduce the possibility of banding and to produce laser-like images. See also *banding*.

monochrome

This means printing with only one color of ink, which is generally black ink.

parallel interface

See *interface*.

power-on functions

These are special functions, like a self test, that you can do by holding down a control panel button while turning on the printer.

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. Often shortened to “driver.” See also *driver*.

print head alignment mode

This feature allows you to align the print heads if you can't use the print head alignment utility. See also *print head alignment*.

print head alignment

A maintenance procedure you should perform when the black and color inks on your printout are misaligned or the printout seems fuzzy.

print server

The print server acts as a post office for all print jobs sent over a network. It receives the jobs and then distributes them to the assigned printer. It also holds extra print jobs while the printer is busy. See also *print queue*.

print queue

If your printer is connected to a network, print jobs that are sent to the printer while it is busy are stored in a waiting line, or print queue, until they can be printed.

proportional printing

Printing in which the width of the character varies from character to character. For example, a capital W receives much more space than a lowercase i. The result looks more like a typeset book than a typewritten draft.

RAM

Random Access Memory. The portion of the printer's memory used as a buffer and for storing user-defined characters. All data stored in RAM is lost when the printer is turned off.

reset

To return a printer to its defaults either by sending a command, an INIT signal, or by turning the printer off and then back on.

resolution

The number of dots per inch used to represent an image.

ROM

Read Only Memory. A portion of memory that can only be read and cannot be used for data storage. ROM retains its contents when you turn off the printer.

RGB

Red, green, and blue. These colors, in phosphors irradiated by the computer monitor's electron gun, are used to create the additive array of screen colors.

sans serif

A type of font that does not have serifs, or lines crossing the ends of characters to enhance readability. The entries in the index are printed in a sans serif font, but the explanations are printed in a font with serifs.

scalable fonts

Fonts that can be enlarged or shrunk. Non-scalable fonts are called bitmap fonts and they can't change in size.

Screen Pattern

This setting prints shaded areas as they appear on screen, instead of printing them as halftones.

self test

A method for checking the operation of the printer. When you run the self test, the printer prints the characters stored in its ROM.

serial interface

See *interface*.

spool

The process by which the printer driver converts the print data into codes that your printer understands. This data is then sent to the printer directly or to the print server.

spool manager

A software program that converts print data into codes that your printer understands. See also *spool*.

status monitor

A software program that allows you to check the printer's status, such as the amount of ink remaining before printing.

subtractive colors

Colors produced by pigments that absorb some colors of light and reflect others. See also *CMYK*.

unidirectional printing

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

user-defined characters

Characters that are defined and stored in the printer by the user. Also called downloaded characters.

WYSIWIG

What-you-see-is-what-you-get. This term is used to describe printout that looks exactly like it appears on screen.

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