

# EPSON STYLUS™ COLOR 480

*Color Ink Jet Printer*

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Printed on Recycled Paper.



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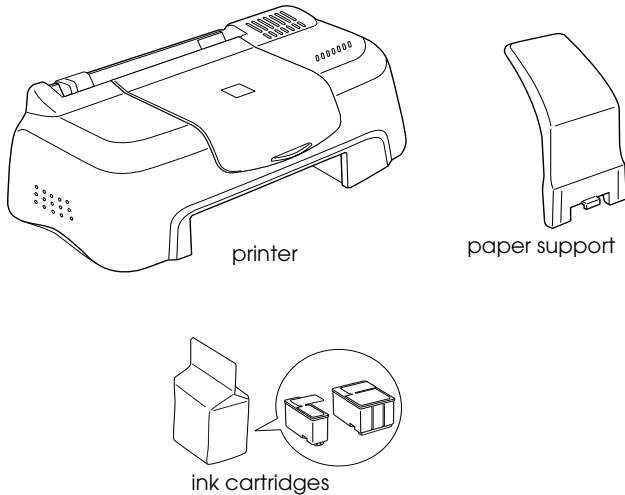
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# Printer Parts and Functions

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## Unpacking the Printer

Your printer box should include a CD-ROM containing printer software that runs your printer, and the items shown in the illustration.

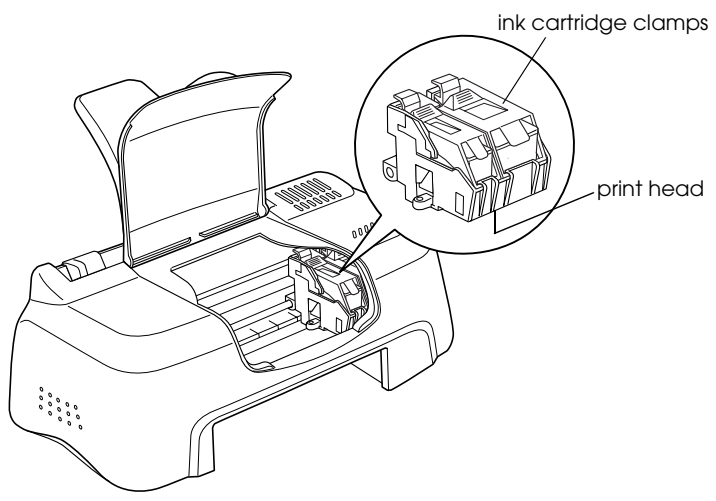
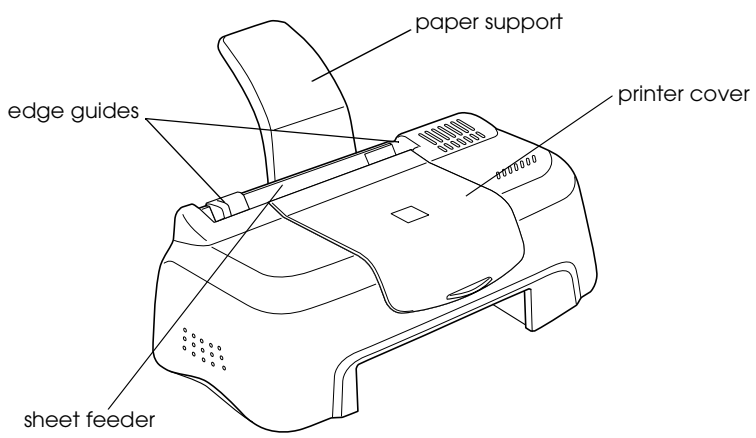


In some locations, the power cord comes attached to the printer. The shape of the AC plug varies by country; be sure the plug included is the right shape for your location.

Remove all protective materials packed with your printer before setting up and plugging in the printer. Follow the instructions included with the printer to remove these materials. Save all packaging and protective materials for transporting the printer in the future.

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# Printer Parts



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# ***Safety Instructions***

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## ***Important Safety Instructions***

Read all of these instructions before using your printer. Also, be sure to follow all warnings and instructions marked on the printer.

- ❑ Do not block or cover the openings in the printer's cabinet. Do not insert objects through the slots.
- ❑ Take care not to spill liquid on the printer.
- ❑ 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.
- ❑ Avoid electrical outlets controlled by wall switches or automatic timers.
- ❑ Keep the entire computer system away from potential sources of electromagnetic interference, such as loudspeakers or the base units of cordless telephones.
- ❑ Do not use a damaged or frayed power cord.
- ❑ Unplug the printer's power cord from the electrical outlet when you do not use the printer for a long period of time.
- ❑ 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 ampere rating of all devices plugged into the wall outlet does not exceed the wall outlet's ampere rating.

- ❑ Do not attempt to service the printer yourself.
- ❑ Unplug the printer and refer servicing to qualified service personnel under the following conditions:

The power cord or plug is damaged; liquid has entered the printer; the printer has been dropped or the cabinet damaged; the printer does not operate normally or exhibits a distinct change in performance.

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## ***A Few Precautions***

Take note of the following when using the printer, handling the ink cartridges, or choosing a location for the printer.

### ***When using the printer***

- ❑ Do not put your hand inside the printer or touch the ink cartridges during printing.
- ❑ Do not move the print head by hand; otherwise, you may damage the printer.
- ❑ Before transporting the printer, make sure the print head is in the home (far right) position and the ink cartridges are in place.

### ***When handling the ink cartridges***

- ❑ Keep ink cartridges out of the reach of children. Do not allow children to drink from or otherwise handle the cartridges.
- ❑ If ink gets on your skin, wash it off with soap and water. If it gets in your eyes, flush them immediately with water.
- ❑ Do not shake an ink cartridge; this can cause leakage.

- ❑ 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.
- ❑ Once you install an ink cartridge, do not open the clamp or remove the cartridge except to replace it with a new one. Otherwise, the cartridge may become unusable.
- ❑ 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.
- ❑ Do not dismantle the ink cartridges or try to refill them. This could damage the print head.

### ***When choosing a place for the printer***

- ❑ Place the printer on a flat, stable surface that extends beyond the printer base in all directions. The printer will not operate properly if it is tilted or at an angle.
- ❑ Leave enough space in front of the printer for paper to be ejected smoothly.
- ❑ Avoid places subject to rapid changes in temperature and humidity. Also, keep the printer away from direct sunlight, strong light, or heat sources.
- ❑ Avoid places subject to shocks and vibrations.
- ❑ Leave enough room around the printer to allow for sufficient ventilation.
- ❑ Place the printer near a wall outlet where the plug can be easily unplugged.
- ❑ Avoid places subject to dust.

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## **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.

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## **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 the 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.

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## ***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.*





## Chapter 1

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# **Paper Handling**

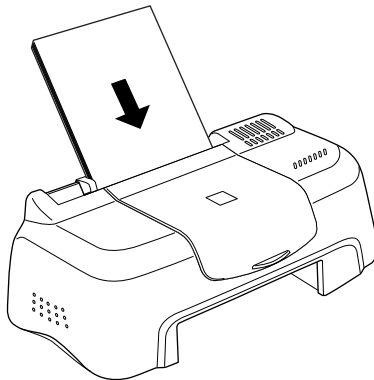
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## Loading Plain Paper

Follow the steps below to load plain paper in the printer.

1. Slide the left edge guide so that the distance between the edge guides is slightly wider than the width of your paper.
2. Fan a stack of paper, then tap it on a flat surface to even the edges.
3. Load the stack of paper in the sheet feeder with the printable side up and the right edge of the paper resting against the right edge guide. Then slide the left edge guide against the left edge of the paper.



### **Note:**

- Leave enough space in front of the printer for paper to be ejected smoothly.
- Always load paper into the sheet feeder short edge first.
- Make sure the paper stack fits under the arrow mark inside the edge guide.

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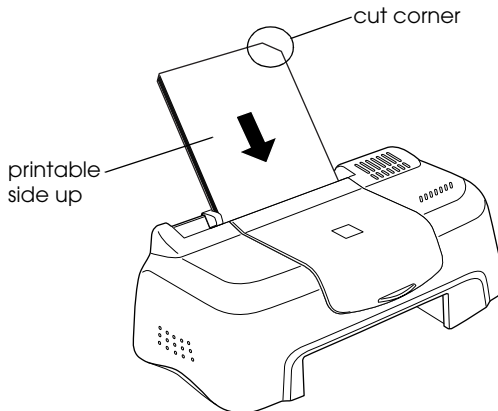
## ***Loading Special Paper and Other Media***

You can achieve good results with most types of plain bond paper. However, coated paper and glossy film result in higher quality printouts because these media absorb smaller amounts of ink.

EPSON provides special media that are formulated for the ink used in EPSON ink jet printers. EPSON recommends using media distributed by EPSON to ensure high-quality results. See “EPSON special media” on page 8-1 for a complete list of these products.

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

- ❑ Make sure the printable side of the paper is facing up when loading media into the sheet feeder. See the instruction sheets packed with the media to determine which side is the printable surface. Some media have cut corners to help identify the correct loading direction, as shown in the illustration.



**Note:**

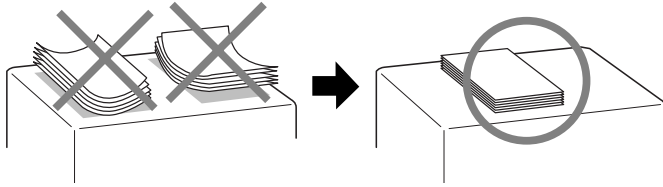
*If you extend the printable area by selecting the Maximum setting in the printer driver, the cut corner on special paper may mar your printout.*

- ❑ Make sure the paper stack fits under the arrow mark located on the inside surface of the left edge guide.
- ❑ The loading capacity for EPSON special media is explained below.

360 dpi Ink Jet Paper and Photo Quality Ink Jet Paper	Up to 30 sheets.
Photo Quality Ink Jet Cards, Ink Jet Note Cards, and Ink Jet Greeting Cards	Up to 30 index cards. Always place the included support sheet* under the cards.
Photo Quality Glossy Film	One sheet at a time. For A4 or Letter size glossy film, always put a sheet of plain paper under the film. For A6 size glossy film, always put the included support sheet* under the film.
Ink Jet Transparencies	One sheet at a time. Always put a sheet of plain paper under the transparency.
Photo Quality Self Adhesive Sheets	One sheet at a time.
Photo Paper	One sheet at a time.
Photo Stickers 16 and Photo Stickers 4	One sheet at a time.
Panoramic Photo Paper and Iron-On Cool Peel Transfer Paper	One sheet at a time.
Matte Paper-Heavyweight	One sheet at a time.

\*Take care not to print on support sheets loaded under special media.

- ❑ If the paper is curled, make sure to flatten it or curl it slightly toward the opposite side before loading. Printing on curled paper may smear your printout, especially when printing with Maximum selected as the Printable Area setting.



If you wish to print on the reverse side of an Ink Jet Card with Maximum selected as the Printable Area setting, flatten the card or curl it slightly toward the opposite side before loading.

## ***About special media cleaning sheets***

Cleaning sheets packaged with EPSON special media should not be used with this printer. The cleaning function performed by these sheets is not necessary with this type of printer, and the sheets could jam in the printer.

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## ***Loading Envelopes***

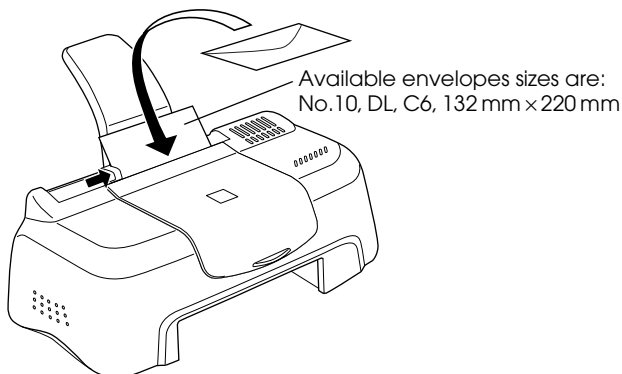
When printing on envelopes, please note the following:

- ❑ You can load up to 10 envelopes into the sheet feeder.

***Note:***

*The folding quality and thickness of envelopes varies widely. If the total thickness of the stack of envelopes exceeds 10 mm, press each envelope in the stack flat before loading. If print quality declines when a stack of envelopes is loaded, load one envelope at a time.*

- ❑ Load envelopes flap edge first with the flap side down, as shown in the illustration.



- ❑ Do not use envelopes that are curled or folded. Make sure to flatten the envelope flaps before loading. Avoid using envelopes that are too thin; they may curl during printing.
- ❑ Select Plain Paper as the Media Type setting in the printer driver.

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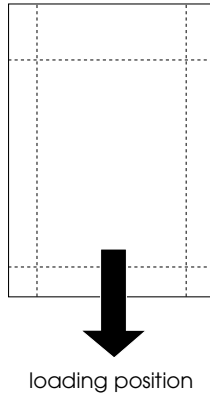
## ***Using EPSON Photo Paper (4 x 6 inch, 200 x 300 mm)***

EPSON Photo Paper (S041134, S041254) is perforated around the margins so you can trim your printed images to look like 4 × 6 inch (102 × 152 mm) or 200 × 300 mm photographs.

### ***Loading Photo Paper***

Note the following when loading EPSON Photo Paper.

- ❑ Load the paper printable side up with the perforated margins positioned as shown in the illustration.

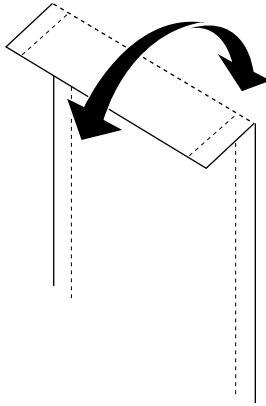


- ❑ Use flat, undamaged paper. If the paper is curled, flatten it before loading to avoid paper feeding problems.
- ❑ You can load up to one sheet of 4 × 6 inch Photo Paper or one sheet of 200 × 300 mm Photo Paper into the sheet feeder.
- ❑ Do not fold the paper before printing.
- ❑ Cut or tear the paper at the perforation only after printing.
- ❑ Select Photo Paper as the Media Type setting and Photo Paper 4 × 6 in or Photo Paper 200 × 300 mm as the Paper Size setting in your printer driver.

## ***Removing the perforated margins***

Note the following when removing the perforated margins.

- ❑ To remove the perforated margins, fold the paper back and forth a few times along the perforations, then carefully tear the margins off.



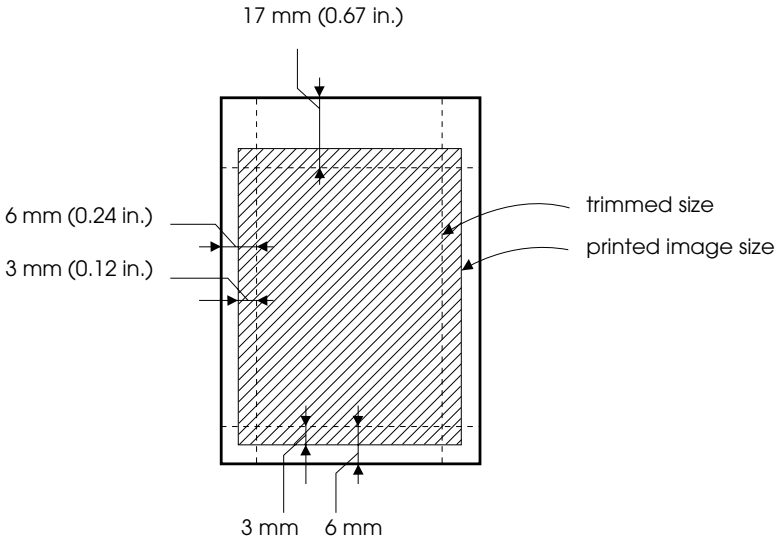
- ❑ You can also remove the margins by cutting along the perforations.

**Note:**

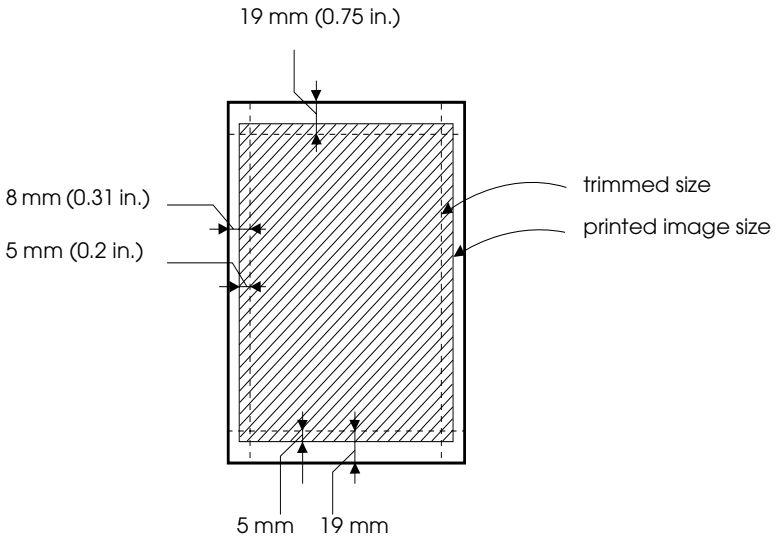
*Keep in mind that the edges of your image might be cut off when you remove the perforated margins. See the illustrations below.*



4 x 6 inch



200 x 300 mm



## **Storing EPSON Photo Paper**

Keep the following points in mind when storing Photo Paper.

- ❑ Return unused paper to the original package as soon as you finish printing, and avoid storing it in places exposed to high temperature, humidity, or direct sunlight.
- ❑ EPSON recommends storing your printouts in a resealable plastic bag and keeping them away from high temperature, humidity, and direct sunlight.

## Chapter 2

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# Using the Printer Software

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## **Printer Software Introduction**

The printer software which comes with your printer 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 operating condition.

### **Getting more information**

For information on using the printer driver, see “Making Changes to Printer Settings” on page 2-3.

For information on using the printer utilities, see “Using the Printer Utilities” on page 2-25.

**Note:**

*The specific features available in the printer software vary depending on the version of Windows you are using.*

Online help provides more information about the printer software. See “Getting Information Through Online Help” on page 2-31 for instructions on accessing help.

### **Accessing the printer software**

You can access the printer software from most Windows applications, or from the Windows Start menu (Windows 98, 95, 2000 and NT 4.0).

When you access the printer software from a Windows application, the settings you make apply only to the application you are using.

When you access the printer software from the Start menu, the settings you make apply to all of your Windows applications.

## ***From Windows applications***

1. From the File menu, click Print or Print Setup.
2. In the dialog box that appears, click Printer, Setup, Options, or Properties. (Depending on your application, you may need to click a combination of these buttons.) The printer driver opens.

## ***From the Windows Start menu***

1. Click Start, point to Settings, then click Printers.
2. For Windows 95 and 98, select your printer, then click Properties on the File menu. For Windows 2000, select your printer, then click Printing Preferences on the File menu. For NT 4.0, select your printer, then click Document Defaults on the File menu. The printer driver opens.

---

## ***Making Changes to Printer Settings***

The printer driver features the following menus and settings.

Main:       Media Type, Ink, Mode

Paper:       Paper Size, Copies, Orientation, Printable Area

Layout:     Reduce/Enlarge, Multi-Page, Watermark

The Mode settings on the Main menu are arranged to give you four levels of control over the printer driver, as explained below.

<b>Automatic</b>	This mode provides the quickest and easiest way to start printing. See "Using the Automatic mode" on page 2-7.
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<b>PhotoEnhance</b>	This mode lets you choose from a variety of image-correction settings specially designed for photos. See "Using the PhotoEnhance mode" on page 2-8.
<b>Custom</b>	This mode lets you choose from a list of ready-made or personalized settings suited to the kind of document you want to print. When Custom is selected, the Advanced button is enabled, allowing you to access the Advanced dialog box. See "Using the Custom mode" on page 2-9.
<b>Advanced</b>	This button opens the Advanced dialog box, where you can make detailed settings to fit your individual needs. From the Advanced dialog box, you can add your personalized settings to the Custom Settings list. See "Using the Advanced settings" on page 2-10.

In addition to making comprehensive Mode settings that affect overall print quality, you can also modify individual aspects of your printout using the Paper and Layout menus. See "Modifying the printout style" on page 2-17.

## ***Making the Media Type setting***

The Media Type setting determines what other settings are available, so you should always make this setting first.

On the Main menu, select the Media Type setting that matches the media which is loaded in the printer. To find out what Media Type you are using, find your media in the list below, and refer to the corresponding Media Type under which it is grouped (shown in larger type). For some media, there are several Media Type settings to choose from.

## Plain Paper

### Plain paper

#### Envelopes

EPSON Premium Ink Jet Plain Paper (A4) S041214

### 360 dpi Ink Jet Paper

EPSON 360 dpi Ink Jet Paper (A4) S041059

EPSON Iron-On Cool Peel Transfer Paper (A4) S041154

### Photo Quality Ink Jet Paper

EPSON Photo Quality Ink Jet Paper (A4) S041061

EPSON Photo Quality Ink Jet Cards (A6) S041054

EPSON Photo Quality Ink Jet Cards (5 × 8") S041121

EPSON Photo Quality Ink Jet Cards (8 × 10") S041122

EPSON Photo Quality Self Adhesive Sheets (A4) S041106

EPSON Ink Jet Note Cards A6 (with envelopes) S041147

EPSON Ink Jet Greeting Cards 5 × 8"  
(with envelopes) S041148

EPSON Ink Jet Greeting Cards 8 × 10"  
(with envelopes) S041149

### Matte Paper-Heavyweight

EPSON Matte Paper-Heavyweight (A4) S041259



## Photo Paper

EPSON Photo Paper (A4)	S041140
EPSON Photo Paper (4 × 6")	S041134
EPSON Panoramic Photo Paper (210 × 594 mm)	S041145
EPSON Photo Paper Cards (A4)	S041177

## Photo Quality Glossy Film

EPSON Photo Quality Glossy Film (A4)	S041071
EPSON Photo Quality Glossy Film (A6)	S041107
EPSON Photo Stickers 16 (A6)	S041144
EPSON Photo Stickers 4 (A6)	S041176

## Ink Jet Transparencies

EPSON Ink Jet Transparencies (A4)	S041063
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**Note:**

*The availability of special media varies by location.*

## Using the Automatic mode

When Automatic is selected as the Mode setting on the Main menu, the printer driver takes care of all detailed settings based on the current Media Type and Ink settings. To make the Ink setting, click **Color** to print in color, or **Black** to print in black-and-white or grayscale. To make the Media Type setting, see “Making the Media Type setting” on page 2-4.



### Note:

- ❑ Depending on the media selected in the Media Type list (while Automatic is selected), a slider appears under the Custom radio button that lets you choose from Quality or Speed settings. Select Quality when print quality is more important than speed.
- ❑ Most Windows applications feature paper size and page layout settings that override similar settings on the printer driver. However, if your application does not have these settings, verify the settings on the printer driver's Paper menu.

## Using the PhotoEnhance mode

The PhotoEnhance mode provides a variety of image-correction settings that you can apply to your photo images before printing. PhotoEnhance does not affect your original data.



### Note:

- This mode is only available when printing 16-, 24-, or 32-bit color data.
- Printing with PhotoEnhance selected may increase the time required for printing, depending on your computer system and the amount of data contained in your image.

You can select from the following settings.

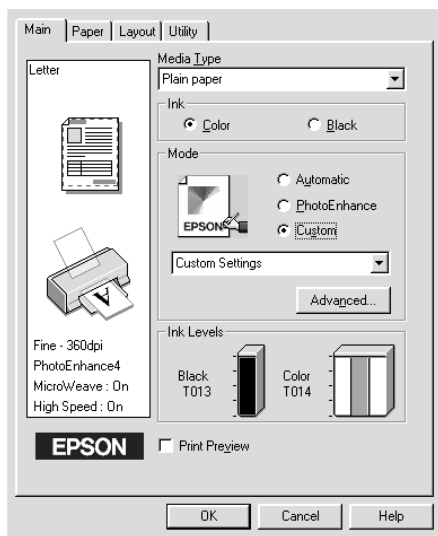
<b>Standard</b>	This setting provides standard image correction for most photos. Try this first.
<b>People</b>	This setting is best for photos of people.
<b>Nature</b>	This setting is best for outdoor scenery such as mountains, sky, and oceans.

<b>Soft Focus</b>	This setting makes your photos look as if they were taken with a soft-focus lens.
<b>Sepia</b>	This setting applies a sepia tone to your photos.

Selecting PhotoEnhance also enables the Digital Camera Correction check box. Select this check box when you are printing photos taken with a digital camera to give your printed images the smooth, natural appearance of photographs taken with a film camera.

## Using the Custom mode

The Custom mode offers ready-made settings designed for printing text and graphs and for applying a color-matching method. You can also create and save your own custom settings. See “Using the Advanced settings” on page 2-10 for details.



You can select from the following ready-made settings.

<b>ICM</b> (For Windows 98, 95 and 2000)	This setting automatically adjusts printout colors to match colors on your screen. ICM stands for Image Color Matching.
<b>sRGB</b>	This setting is best for color matching with other sRGB devices.

Follow the steps below to select a Custom setting.

1. Select Custom as the Mode setting on the Main menu.
2. Click anywhere in the list box to open it, then select the most appropriate setting for the type of document or image you wish to print.
3. When you select a Custom setting, other settings such as Print Quality and Color Adjustment are made automatically. Changes to these settings are reflected in the display on the left side of the Main menu.
4. Before printing, be sure to verify the Media Type and Ink settings, as they may be affected by the Custom setting you select. See “Making the Media Type setting” on page 2-4.

## ***Using the Advanced settings***

The settings in the Advanced dialog box give you complete control over your printing environment. Use these settings to experiment with new printing ideas, or to fine-tune a range of print settings to meet your individual needs. Once you are satisfied with your new settings, you can give them a name and add them to the Custom Settings list on the Main menu.

### ***Making the Advanced settings***

Follow the instructions in this section to make the Advanced settings.

**Note:**

*The printer driver screens that appear in this procedure are for Windows 95 and 98. The Windows 2000 and NT 4.0 printer driver screens differ only slightly.*

1. Select Custom as the Mode setting on the Main menu and then click Advanced. The following dialog box appears.



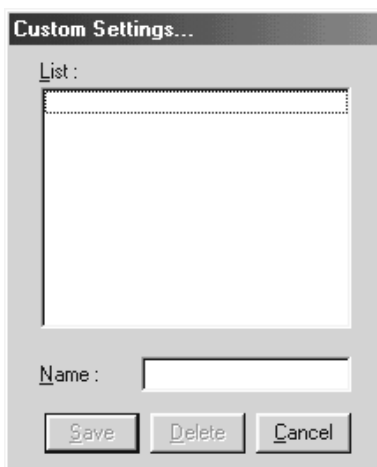
2. Select the Media Type you loaded in the printer. For details, see “Making the Media Type setting” on page 2-4.
3. Choose Color or Black as the Ink setting.
4. Specify a Print Quality setting.
5. Make other settings as necessary. For details, see online help.

**Note:**

- ❑ *The PhotoEnhance option under Color Management only affects images, not text or graphs. For example, if Monochrome is selected from the Tone list (enabled when PhotoEnhance is selected), only the images in a document will be printed in monochrome. Any colored text or graphs in the same document will be printed in color.*
  
  - ❑ *Some settings may be unavailable depending on the Media Type, Ink, and Print Quality settings you make.*
6. Click OK to apply your settings and return to the Main menu. If you want to return to the Main menu without applying your settings, click Cancel. To save your Advanced settings, see the next section.

### ***Saving and deleting your settings***

To save your Advanced settings in the Custom Settings list, click Save Settings in the Advanced dialog box. The Custom Settings dialog box appears.



Type a unique name for your settings in the Name box, then click **Save**. Your Advanced settings will be added to the Custom Settings list.

**Note:**

- ❑ *You cannot apply the names of settings provided by EPSON to your custom settings.*
  
- ❑ *You cannot delete the ready-made settings from the Custom Settings list.*

To delete a setting from the Custom Settings list, select the setting name in the Custom Settings dialog box and click **Delete**.

### ***Using your saved settings***

To select your settings, click the **Custom** button on the Main menu, then select your setting in the Custom Settings list, located to the right of the **Custom** button.

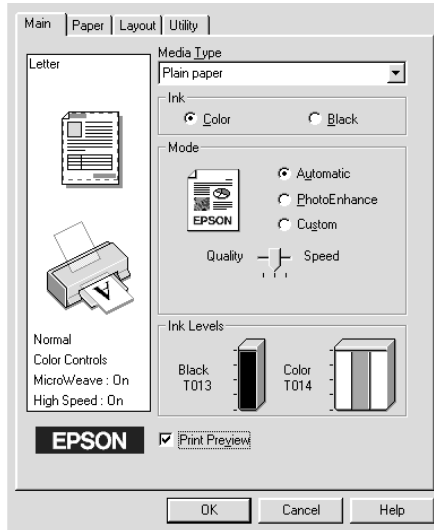
If you change the Media Type or Ink settings when one of your customized settings is selected in the Custom Settings list, the selection shown in the list returns to Custom Settings. The customized setting that was previously selected is not affected by the change. To return to your customized setting,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



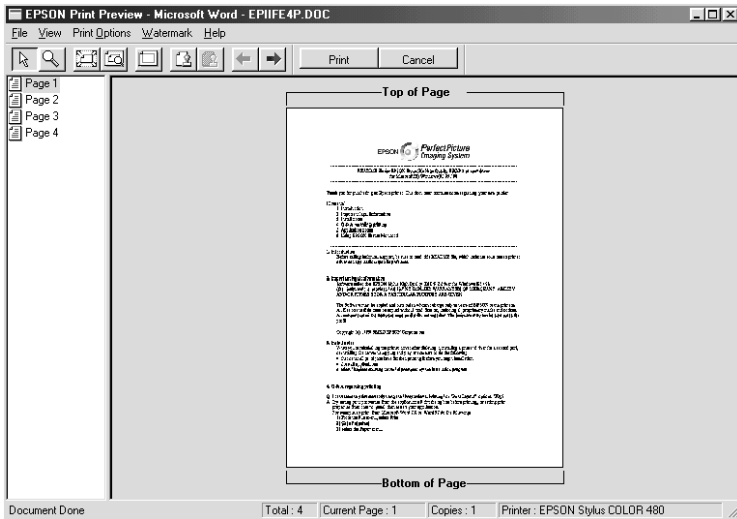
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## Previewing your printout






Select the Print Preview check box on the Main menu when you wish to view a preview of your document before printing.







When you send a print job to the printer, the Print Preview window opens, allowing you to make changes before printing.




The Preview dialog box contains several icon buttons which you can use to perform the following functions:


	Drag 'n' Drop	This button lets you select and move watermarks.
	Zoom	This button enlarges or reduces the size of the previewed page.
	Fit-to-screen	This button scales the previewed page so that it fits the size of the window. Select this option if you want to see the entire page at one time.
	Maximum zoom	This button displays the previewed page at the maximum possible zoom ratio.
	Printable area on/off	This button displays a rectangle on the page being previewed. This rectangle is the printable area for the page. The printer cannot print anything which exceeds this rectangle. Press the icon button again to turn this feature off.

	Watermark	This button opens the watermark settings dialog box, where you can change any of the current watermark settings.
	Reset watermark settings	This button returns all watermark settings to what they were when the Print Preview window was first opened. If nothing has been changed, this feature is not available.
	Previous page	This button displays the page previous to the one currently being previewed. If there is no previous page then this feature is not available.
	Next page	This button displays the next page in the document. If there is no next page then this feature is not available.

You can also manipulate the previewed document in the following ways:

- Select and preview individual pages.
- Reduce or enlarge the size of the preview.
- Select and print any or all pages.
- Apply watermarks. The watermark you select will appear in the previewed image. For detailed information on customizing watermarks, see “Printing a watermark on your document” on page 2-22.
- Specify which pages in the document you would like printed using the Add and Remove features. To add or remove a page, you must first click the page icon in the list appearing on the left side of the preview window. Then add or remove it using the commands in the Print Options menu.

	Add page	This button will add the highlighted pages to the list of pages to be printed.
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	Remove page	This button will remove the highlighted pages from the list of pages to be printed.
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After you have previewed the document, click **Print** to print the document, or click **Cancel** to cancel printing.

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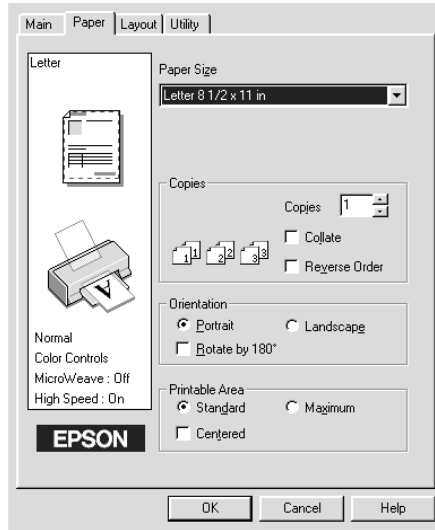
## ***Modifying the printout style***

You can modify your printout style using a variety of printer driver settings located on the **Paper** and **Layout** menus.

On the **Paper** menu, you can set the paper size, the number of copies, the orientation of your printout, and the printable area. On the **Layout** menu, you can automatically match the document size to the paper size, print two or four pages on a single sheet of paper, print poster-size images by enlarging one page to cover several sheets, or place watermarks on documents.

## Making the Paper menu settings

Use the settings on the Paper menu to change the paper size, set the number of copies and other copy parameters, specify the paper orientation, and adjust the printable area.



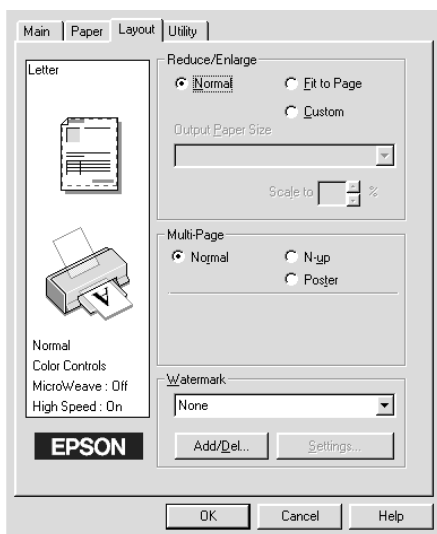
You can make the following settings on the Paper menu:

<b>Paper Size</b>	Select the paper size you want to use. You can also add a custom paper size.
<b>Copies</b>	Select the number of copies you wish to print. You can select Collate to print one set at a time or Reverse Order to determine the order in which you wish to print multiple copies of your document.
<b>Orientation</b>	Select Portrait (tall) or Landscape (wide) to change the orientation of your printout. If you need to print closer to the bottom of the page, select the Rotate by 180° check box.

<p><b>Printable Area</b></p>	<p>Select Centered if you want to center the printout. Select Maximum if you need to increase the printable area.</p> <p><b>Note:</b> When Maximum is selected, the print quality may decline at the edges of the printout. Before printing large jobs using this setting, print a single sheet to confirm quality. When Maximum is selected, make sure the paper loaded in the sheet feeder is not curled.</p>
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## Fitting your document to the paper size

Use the Reduce/Enlarge options on the Layout menu to fit your document to the paper size you will print on.



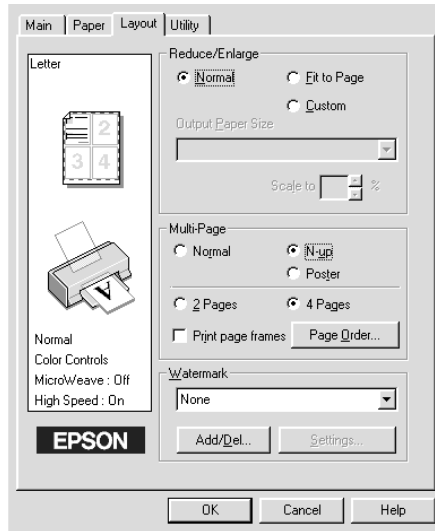
You can select from the following settings.

<p><b>Normal</b></p>	<p>Prints your document at its normal size.</p>
<p><b>Fit to Page</b></p>	<p>Proportionally enlarges or reduces the size of your document to make it fit the paper size you select in the Paper Size list on the Paper menu.</p>

<b>Custom</b>	Allows you to manually reduce or enlarge an image. Click the arrows next to the Scale to box to select a percentage between 10% and 400%.
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## Printing two or four pages on one sheet

Select N-up as the Multi-Page setting on the Layout menu to print two or four pages of your document on one sheet of paper.



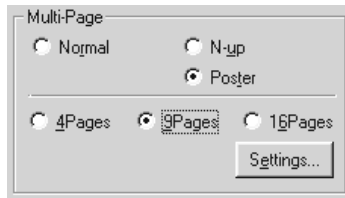
To print more than one page on the piece of paper, you should make the following settings:

<b>2 Pages 4 Pages</b>	Prints two or four pages of your document on a single piece of paper.
<b>Page Order</b>	Opens the Print Layout dialog box, where you can specify the order in which the pages will be printed on the sheet of paper. Some settings may be unavailable, depending upon your Orientation selection on the Paper menu.

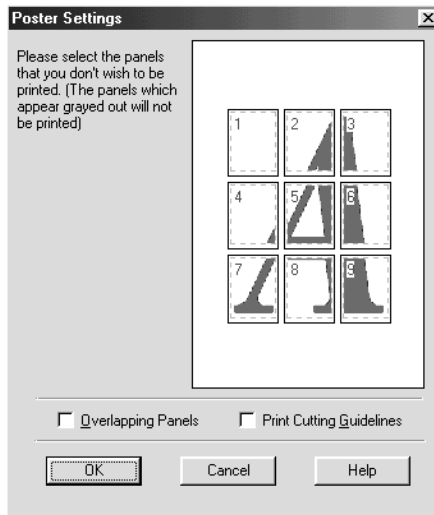
<b>Print page frames</b>	Prints a frame around each page that is printed on the sheet of paper.
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## Printing posters

A single document page can be enlarged to cover 4, 9, or 16 printed sheets of paper. Select Poster as the Multi-Page setting to print a poster-size image.



Click the Settings button to adjust the way your poster will print. The Poster Settings dialog box opens.





You can make the following settings.

<b>Overlapping Panels</b>	Slightly overlaps the images so that they can be aligned more precisely.
<b>Print Cutting Guidelines</b>	Prints border lines on the images to guide you when trimming the pages.

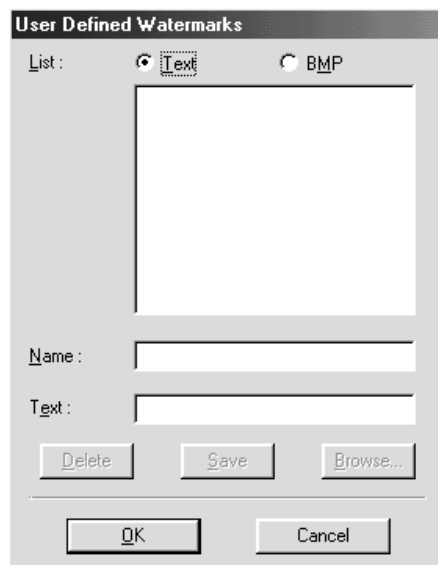
If you only want to print a few of the panels without printing the entire poster, click the panels you don't wish to print, then click OK to close the Poster Settings dialog box.

## ***Printing a watermark on your document***

To print a watermark on your document, click anywhere in the Watermark list box on the Layout menu, and select from the list of predefined watermarks.

You can also add your own text-based or image-based watermarks to the Watermark list.

To add a watermark, click the Add/Del button. The following dialog box appears.



Creating an image-based watermark:

1. Select BMP.
2. Click the Browse button to specify the bitmap file you want to use, then click OK.
3. Type a name for your watermark in the Name box, then click Save. Click OK to return to the Layout menu.

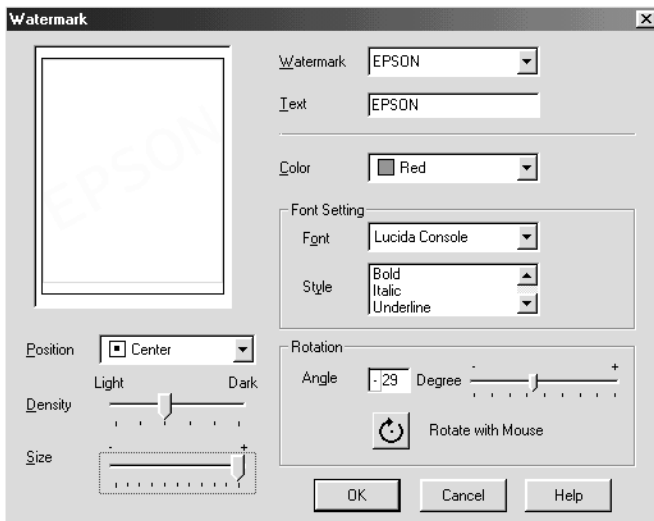
Creating a text-based watermark:

1. Select Text.
2. Type your text in the Text box. The text that you enter will also be assigned to the watermark as a watermark name.

3. If you want to change the watermark name, type a new name in the Name box, then click Save. Click OK to return to the Layout menu.

Making settings for your watermark:

1. Click the Settings button. The following dialog box appears.



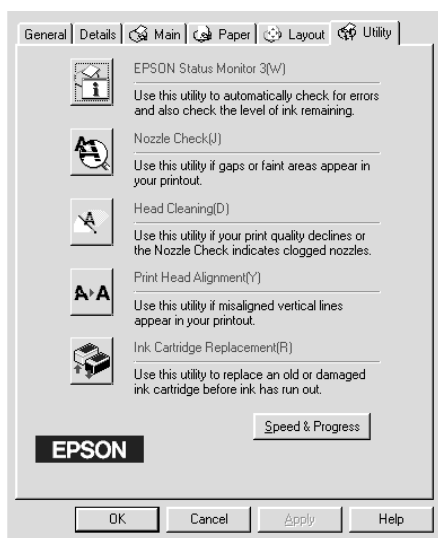
2. From the Watermark list box, select the watermark you want to make settings for, then make Color, Position, Density, Size, Font, Font Style and Angle settings. For details, please see the online help. Your settings are reflected in the display on the left side of the dialog box.
3. When you are finished making the settings, click OK.

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## Using the Printer Utilities

EPSON printer utilities allow you to check the current printer status and to perform some printer maintenance from your computer. Utilities to check the current printer status are also available.

To use the utilities, click the Utility tab in the printer software window, then click the button for the utility you wish to use. For information on how to access the printer software, see “Accessing the printer software” on page 2-2.



### 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.*
  
- ❑ *Do not use the Nozzle Check, Head Cleaning, and Print Head Alignment utilities if your printer is connected to your computer through a network.*

- ❑ *Do not use the Nozzle Check, Head Cleaning, Print Head Alignment, and Ink Cartridge Replacement utilities while printing is in progress; otherwise, your printout may be marred.*

## **Status Monitor 3**

Status Monitor 3 provides you with printer status information, such as the amount of ink remaining, and checks for printer errors.

This utility is only available when both of the following conditions are met:

- ❑ The printer is connected directly to the host computer via the parallel port.
- ❑ Your system is configured to support bidirectional communication.

## **Nozzle Check**

The Nozzle Check utility checks the print head nozzles for clogging. Check the nozzles if you notice print quality has declined and after cleaning to confirm that the print head nozzles have been cleared. If the nozzle check indicates the print head needs cleaning, you can access the Head Cleaning utility directly from the Nozzle Check utility. See “Checking the Print Head Nozzles” on page 6-1.

## **Head Cleaning**

The Head Cleaning utility cleans the print head. You may need to clean the print head when you notice print quality has declined. Use the Nozzle Check utility first to confirm that the print head needs to be cleaned. You can access the Nozzle Check utility directly from the Head Cleaning utility. See “Cleaning the Print Head” on page 6-3.

## ***Print Head Alignment***

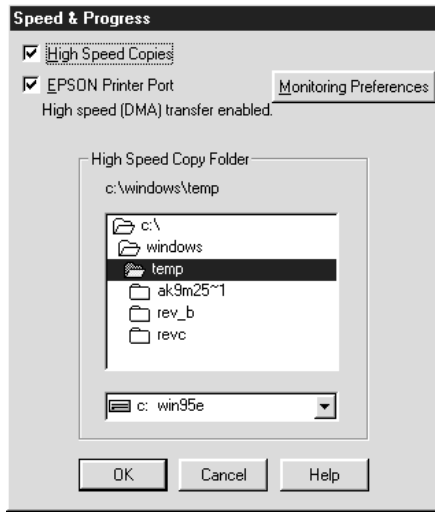
The Print Head Alignment utility aligns the print head. Use this utility if you notice a misalignment of vertical lines. Follow the on-screen instructions to use this utility.

## ***Ink Cartridge Replacement***

The Ink Cartridge Replacement utility guides you through replacing an old and damaged ink cartridge before ink has run out. This utility is only available when you access the printer software through the Printers folder. Otherwise, the utility will be unavailable. To access the printer software through the Printers folder, click Start, point to Settings, then click Printers. For Windows 95 and 98, right click your printer's icon and select Properties from the shortcut menu, then click the Utilities tab. For Windows 2000, select your printer and click Printing Preferences on the File menu, then click the Utilities tab. For NT 4.0, select your printer and click Document Defaults on the File menu, then click the Utilities tab.

## Speed & Progress

You can make settings related to print speed and progress in this dialog box.



The available settings are as follows.

### *High Speed Copies*

To print multiple copies of your document faster, select High Speed Copies.

### *EPSON Printer Port (For Windows 95 and 98 only)*

To speed up the data transfer rate to EPSON printers, select EPSON Printer Port.

If your computer supports ECP mode, enable DMA transfer to speed up printing.

For more details, see “Using Speed & Progress” on page 2-34.

### *Always Spool Raw Datatype (For Windows 2000 and NT only)*

Select this check box to have Windows NT-based clients spool documents using the RAW format instead of the EMF (metafile) format (Windows NT-based applications use the EMF format by default).

Try using this option if documents spooled in EMF format do not print correctly.

Spooling RAW datatype requires less resources than EMF, so some problems (“Insufficient Memory/Disk Space to Print”, “Slow print speed”, etc.) can be solved by selecting the “Always spool RAW datatype” check box.

When spooling RAW datatype, print progress as displayed by the Progress Meter may differ from actual print progress.

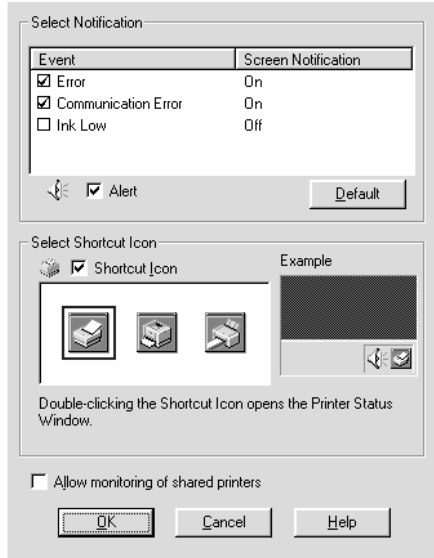
### *Monitoring Preferences*

Click this button to open the Monitoring Preferences dialog box where you can make settings for EPSON Status Monitor 3. The settings are described in detail in the next section.



## Monitoring Preferences

When you click the Monitoring Preferences button, the following dialog box appears.



You can make the following settings:

<p><b>Select Notification</b></p>	<p>Displays the current error item notification settings. In this area, you can designate whether to have general error messages, communication error messages, or ink status messages displayed during printing or copying. Select the appropriate check box to specify the error types for which you wish to receive notification. Also select the Alert check box if you wish to be notified of error messages with an audio alert.</p>
<p><b>Select Shortcut Icon</b></p>	<p>Select the Shortcut Icon check box to have a shortcut icon placed in your Windows taskbar. Clicking the shortcut icon in the taskbar will open EPSON Status Monitor 3. Right-clicking the icon will display a shortcut menu, where you can access some of the printer utilities. To select which icon will be displayed, click the icon you prefer from the choices given; your selection will be shown at the right.</p>

<b>Allow monitoring of shared printers</b>	Select this check box to allow monitoring of a shared printer by other computers.
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**Note:**

*Click the Default button to revert all Select Notification settings to their defaults.*

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## ***Getting Information Through Online Help***

Your printer software has an extensive online help feature, which provides you with instructions on printing, making printer driver settings, and using printer utilities.

### ***Accessing help from your application***

Open the File menu and choose Print or Print Setup. Then click Printer, Setup, Options, or Properties. (Depending on your application, you may need to click a combination of these buttons.) Click Help at the bottom of the Main, Paper, Layout, and Utility menus for help related to the items on that menu.

You can get specific help related to any item on a menu by right-clicking the item, then clicking the What's This? command.

### ***Accessing help from the Windows Start menu***

Click the Start button, point to Programs and Epson (for Windows 98 and 95) or EPSON Printers (for Windows 2000 and NT 4.0), then click EPSON Stylus COLOR 480 Help. The help contents window opens.

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## ***Increasing the Print Speed***

Follow the instructions in this section to increase the printing speed of your printer.

### ***General tips***

Just as printing at a high resolution requires more processing time, printing in color takes longer than printing in black 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 fast print speed.

However, even if your document requires the highest resolution and extensive use of color, for example when you are 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).

<b>Print quality Print speed</b>		<b>Lower Faster</b>	<b>Higher Slower</b>	<b>Printer driver menu</b>
<b>Printer driver settings</b>	Print Quality	Economy, Normal	Photo	Advanced dialog box
	High Speed	On	Off	
	Finest Detail	Off	On	
<b>Data characteristics</b>	Image size	Small	Large	-
	Resolution	Low	High	

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

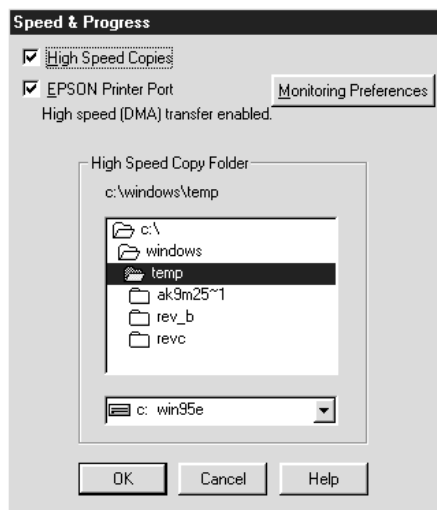
Print speed		Faster	Slower	Printer driver menu
Printer driver settings	Ink	Black	Color	Advanced dialog box, Main menu
	Flip Horizontal*	Off	On	Advanced dialog box
	Collate*	Off	On	Paper menu
	Reverse Order*	Off	On	
Data characteristics	Variety of colors	Grayscale**	Full color	-
Hardware resources	System speed	Faster	Slower	-
	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 driver and application software you are using.

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

## Using Speed & Progress

You can make certain print speed settings in the Speed & Progress dialog box. Click the Speed & Progress button on your printer software's Utility menu. The following dialog box appears.



### *High Speed Copies*

Select this check box to turn on high-speed printing for multiple copies. This speeds up printing by using your hard disk space as a cache when printing multiple copies of your document.

### *EPSON Printer Port (For Windows 95 and 98 only)*

Select this check box to enable the EPSON printer port, which is optimized for EPSON printers, instead of the Windows default printer port. This speeds up the data transfer rate to EPSON printers.

## Use DMA transfer (For Windows 95 and 98 only)

If your computer has a parallel port which supports ECP mode, you can enable DMA transfer to speed up printing. See your computer manual to determine if it supports ECP mode and DMA transfer.

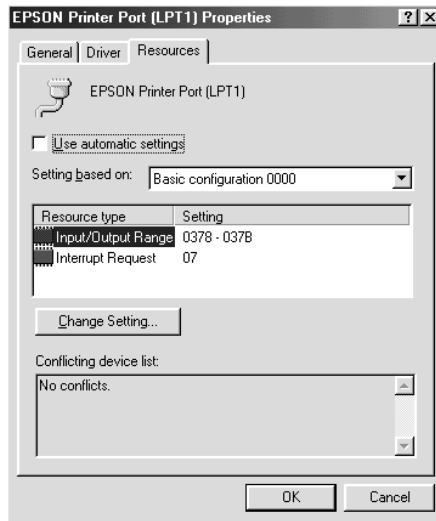
To determine whether you need to enable DMA transfer, compare the message below the EPSON Printer Port check box to this table, and take the recommended action.

Message	Action
High Speed (DMA) Transfer enabled.	DMA transfer is already enabled. Click OK to close the dialog box.
For higher data transfer rates, use DMA Transfer.	Follow the steps below this table to enable DMA transfer.
(No message)	<p>Your system's parallel port setting does not allow DMA transfer. However, if you change the parallel port setting to ECP or Enhanced using your computer's BIOS Setup program, you may be able to use DMA transfer. Consult your computer manual or computer manufacturer for instructions. Once you change the parallel port setting, follow the steps below this table to enable DMA transfer.</p> <p><b>Note:</b> Before you run the BIOS Setup program, uninstall the printer driver using Add/Remove Programs in the Control Panel. After running the BIOS Setup program, reinstall the printer driver.</p>

If you need to enable DMA transfer, follow the steps below.

1. Double-click the My Computer icon on your desktop, then double-click Control Panel.
2. Double-click the System icon and click the Device Manager tab.

3. Double-click the Ports (COM & LPT) icon and double-click LPT1. If you have connected your printer to a port other than LPT1, double-click the appropriate port icon.
4. Click the Resources tab, then clear the Use automatic settings check box. Write down the Input/Output Range settings shown in the resource settings box.



5. Select a basic configuration setting from the Setting based on list that uses the same Input/Output Range settings as those you wrote down in Step 4, and make sure the Direct Memory Access channel and Interrupt Request numbers are allocated and displayed. Confirm also that the Conflicting device list box shows No conflicts.
6. Click OK to save the settings.
7. Reopen the Speed & Progress dialog box to verify whether DMA transfer has been enabled.

**Note:**

You may not be able to use DMA transfer on some computers even after you make the settings explained above. Consult your computer maker for information on the DMA transfer capability of your computer.

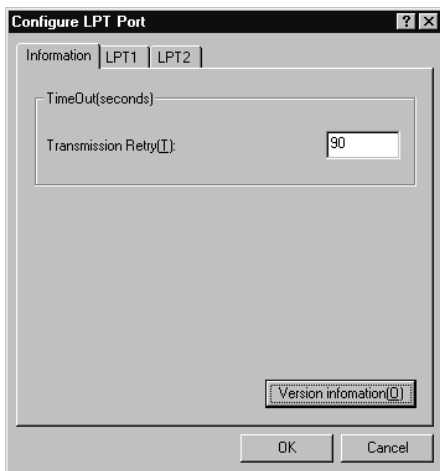
## Using Port Configuration (Windows NT 4.0 only)

**Note:**

Port settings for Windows NT 4.0 are complicated and should only be made by an experienced person with administrative privileges.

If your computer has a parallel port that supports ECP mode, you can make certain print speed settings in the Port Configuration dialog box. Before making settings, make sure that ECP mode has been selected in your computer settings. For details about ECP mode, see your computer manual.

To access the Port Configuration dialog box, click the Start button, point to Settings, and click Printers. Then select your printer and click Properties on the File menu. The printer driver opens. Click the Ports tab, then click Configure Port. The following dialog box appears.

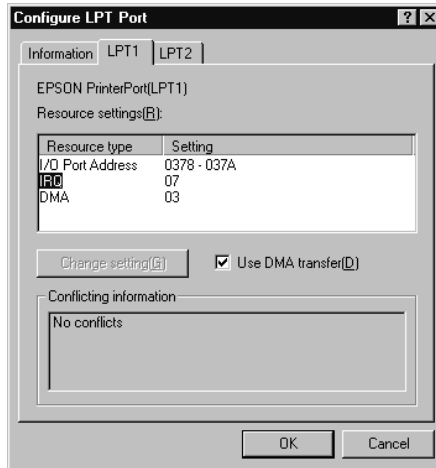




Click the LPT port tab for the port to which your printer is connected, then click the Port Configuration button.

**Note:**

*If your printer is connected to LPT1, only the LPT1 tab is available.*



### *Resource Settings (IRQ and DMA)*

If you have connected your printer to LPT2 or LPT3, making IRQ and DMA settings here may speed up printing. Input the same configuration numbers for IRQ and DMA which you have made with your expansion board. See your computer documentation to determine the settings for IRQ and DMA.

### *Use DMA transfer*

Using DMA transfer to send print data to the computer may help you speed up printing. If the Use DMA Transfer check box is not accessible, you must first enable DMA transfer in your computer settings. For details, see your computer documentation.



## Chapter 3

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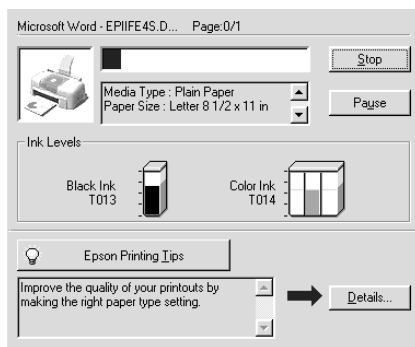
# **Checking Printer Status and Managing Print Jobs for Windows**

Using the Progress Meter . . . . .	3-2
Using EPSON Spool Manager . . . . .	3-3
Using EPSON Status Monitor 3 . . . . .	3-4
Accessing EPSON Status Monitor 3 . . . . .	3-4
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## Using the Progress Meter

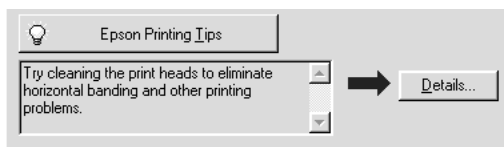
When you send a print job to the printer, the Progress Meter opens, as shown in the illustration below.



The Progress Meter indicates the progress of the current print job and provides printer status information when bidirectional communication between the printer and computer is established. This meter also displays helpful tips for better printing and error messages, as explained below.

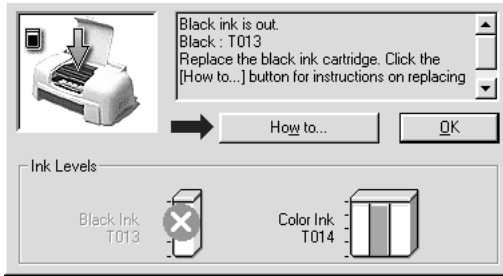
### *Epson Printing Tips*

Tips for getting the most out of your EPSON printer driver appear in the text box at the bottom of the Progress Meter window. A new tip appears every 30 seconds. For more details on a tip which is currently displayed, click the Details button.



## Error messages

If a problem occurs during printing, an error message appears in the text box at the top of the Progress Meter window. When the ink runs low or out, a How To button appears below the text box. Click How To and EPSON Status Monitor 3 will lead you step-by-step through the cartridge replacement procedure.



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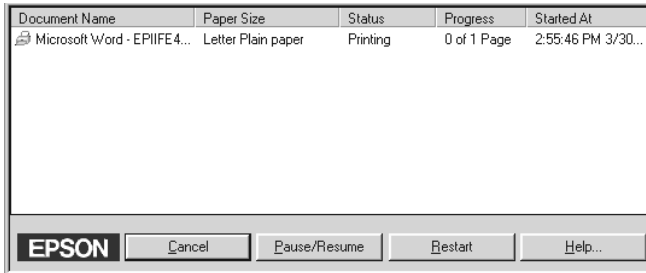
## Using EPSON Spool Manager

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

**Note:**

*EPSON Spool Manager is not available for Windows 2000 and NT.*

After you send a print job, an EPSON Stylus COLOR 480 button appears on the taskbar. Click this button to open the EPSON Spool Manager. From the Spool Manager, you can view print status information about the print jobs which have been sent to your printer. You can also cancel, pause and resume, or restart selected print jobs.



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## Using EPSON Status Monitor 3

EPSON Status Monitor 3 displays detailed information on the printer status.

**Note:**

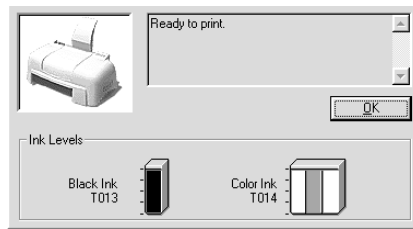
*Before using EPSON Status Monitor 3, be sure to read its README file. To open this file, click Start, point to Programs and then EPSON or EPSON Printers, then click EPSON Stylus COLOR 480 Readme.*

## Accessing EPSON Status Monitor 3

There are two ways to access EPSON Status Monitor 3.

- ❑ Double-click the printer-shaped shortcut icon on the Windows taskbar. See “Monitoring Preferences” on page 2-30.
- ❑ Open the printer driver, click the Utility tab, then click EPSON Status Monitor 3.

When you access EPSON Status Monitor 3, the following window appears.



## ***Viewing information in EPSON Status Monitor 3***

EPSON Status Monitor 3 provides the following information.

- ❑ **Current Status:**

EPSON Status Monitor 3 provides you with detailed printer status information, a graphic display, and status messages. If the ink runs low or out, the **How to** button appears in the EPSON Status Monitor 3 window. Clicking **How to** displays cartridge replacement instructions and moves the print head to the cartridge replacement position.
- ❑ **Ink Levels:**

EPSON Status Monitor 3 provides a graphic display of the amount of ink remaining. For the color ink cartridge, the chamber with the least amount of ink remaining determines the level that is displayed for all the colors in the cartridge.





## Chapter 4

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# **Setting Up Your Printer on a Network**

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## ***For Windows 95 and 98 Users***

This section tells you how to set up your printer so that other computers on the network can use it. When using EPSON Stylus COLOR 480 as a shared printer, only the computer which is directly connected to the printer can be used to perform such operations as replacing ink cartridges and removing jammed paper. Computers that are connected to the printer through a network are limited to certain operations.

First, you need to set up the printer as a shared printer on the computer to which the printer is connected. Then, you must specify the network path to the printer from each computer that will use it, and install the printer software on those computers.

***Note:***

*This section describes how to use your printer as a shared printer on a network. To connect your printer directly to a network without setting it up as a shared printer, consult your network administrator.*

### ***Setting up your printer as a shared printer***

Follow these steps to share a printer connected directly to your computer with other computers on a network.

1. Click Start, point to Settings, then click Control Panel.
2. Double-click Network.
3. Click the File and Print Sharing button.

4. Select the I want to be able to allow others to print to my printer(s) check box and click OK.

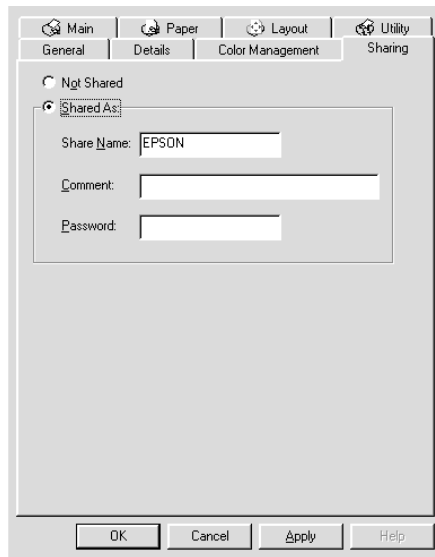


5. In the Network dialog box, click OK.
6. In the Control Panel, double-click Printers.

**Note:**

- ❑ *If a dialog box requesting the Windows 98 or 95 CD-ROM appears, insert the CD-ROM in the CD-ROM drive, then follow the messages on the screen.*
  - ❑ *If a dialog box appears requesting you to restart your computer, do so. Then open the Printers folder, and continue from step 7.*
7. Select your printer in the Printers folder, and click Sharing on the File menu.

8. Select **Shared As** and type the printer information as necessary, then click **OK**.



## ***Accessing the printer through a network***

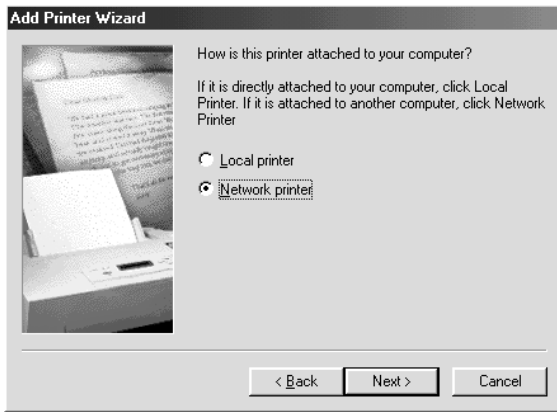
To access your printer from another computer on the network, follow these steps.

### ***Note:***

*Before you can access it from another computer, your printer must be set up as a shared resource on the computer to which it is directly connected. For instructions, see "Setting up your printer as a shared printer" on page 4-2.*

1. On the computer from which you want to access the printer, click **Start**, point to **Settings**, and click **Printers**.
2. Double-click the **Add Printer** icon.
3. The **Add Printer Wizard** screen appears. Click **Next**.

4. Select Network printer, then click Next.



5. Click Browse.
6. Double-click the icon of the computer that is directly connected to the printer. Then click the printer's icon.



7. Click OK and follow the messages on the screen.

---

## ***For Windows 2000 and NT 4.0 Users***

This section tells you how to set up your printer so that other computers on the network can use it. When using EPSON Stylus COLOR 480 as a shared printer, only the computer which is directly connected to the printer can be used to perform such operations as replacing ink cartridges and removing jammed paper. Computers that are connected to the printer through a network are limited to certain operations.

***Note:***

*This section is written for small network users only. If you are on a large network and would like to share your printer, consult your network administrator.*

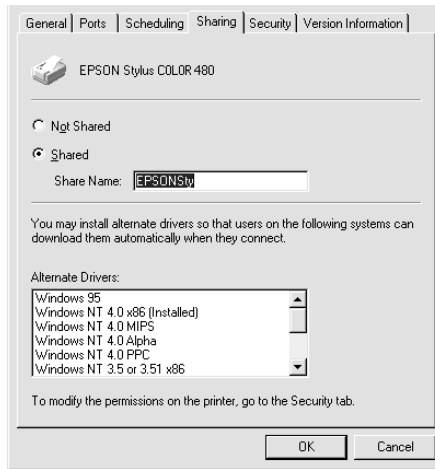
First, you need to set up the printer as a shared printer on the computer to which the printer is connected. Then, you must specify the network path to the printer from each computer that will use it, and install the printer software on those computers.

### ***Setting up your printer as a shared printer***

Follow these steps to share a printer that is connected directly to your computer with others on a network.

1. Click Start, point to Settings, and click Printers.
2. Select your printer, then click Sharing on the File menu.

3. Click Shared and type the Share Name.



4. Click OK.

**Note:**

*Do not choose any drivers from the Alternate Drivers list.*

## ***Accessing the printer through a network***

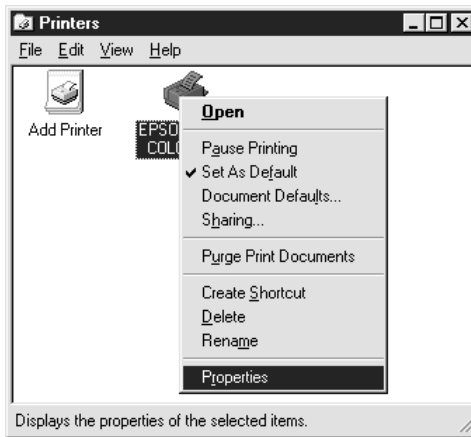
To access your printer from another computer on the network, follow these steps.

**Note:**

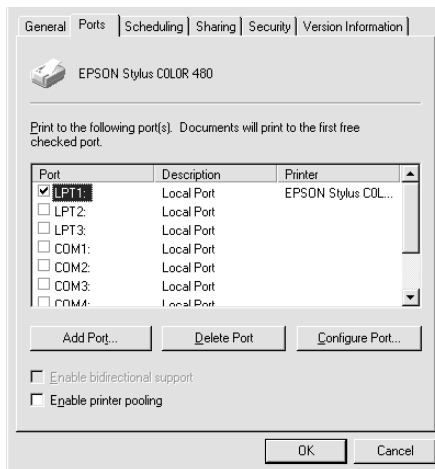
*Before you can access it from another computer, your printer must be set up as a shared resource on the computer to which it is directly connected. For instructions, see “Setting up your printer as a shared printer” on page 4-5.*

1. Install the printer driver to the client computer from the software CD-ROM.

2. Double-click the Printers icon in the Control Panel folder, right-click on your printer's icon, then click Properties from the list of options.

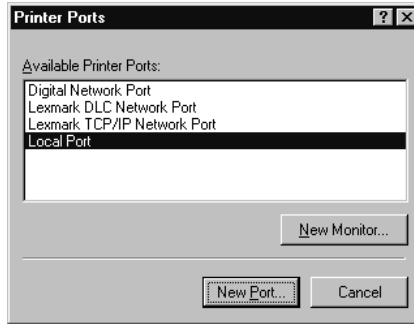


3. Click the Ports tab, then click Add Port.

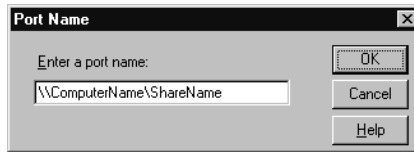




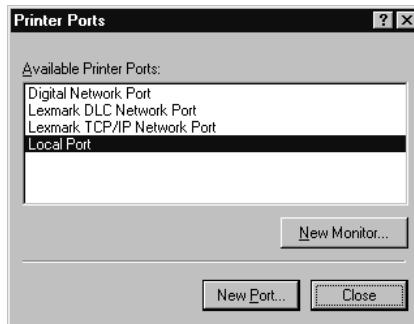
- The following dialog appears. Select Local Port, then click New Port.



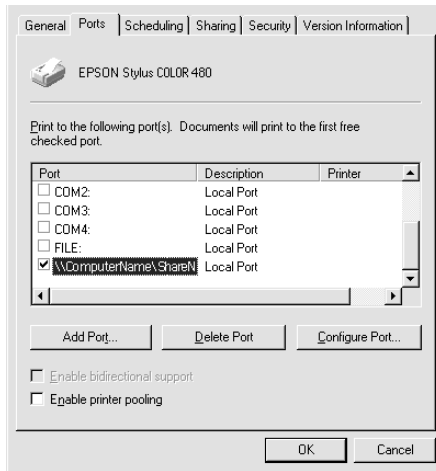
- The following dialog box appears. In the text box, type: \\name of computer that is connected to the printer\nname of the shared printer.



- Click OK.
- In the Printer Ports dialog box, click Close to return to the Ports menu.



- On the Ports menu, make sure that the new port is added and the corresponding check box is selected. Click OK to close the printer driver.



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## **Replacing Ink Cartridges**

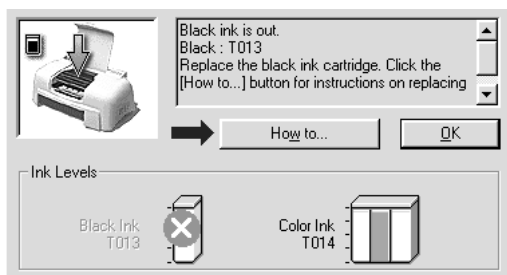
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---

## Replacing an Empty Ink Cartridge

The Status Monitor 3 utility lets you monitor the remaining ink levels from your computer and view on-screen instructions for replacing a low or empty ink cartridge.

When an ink cartridge is low or empty, click the How to button in the Status Monitor's Printer Status window; the print head moves to the ink cartridge replacement position. Follow the on-screen instructions to replace the cartridge.



For more information on using the Status Monitor, see "Using EPSON Status Monitor 3" on page 3-3.

*If you need to replace an ink cartridge before it is empty, see "Replacing an Old or Damaged Ink Cartridge" on page 5-3.*

Please read the following information regarding ink cartridges and the print head before replacing the ink cartridges.



### **Warning:**

- Keep ink cartridges out of reach of children. Do not allow children to drink from or otherwise handle the cartridges.*
- If ink gets on your hands, wash them thoroughly with soap and water. If ink gets into your eyes, flush them immediately with water. If discomfort or vision problems remain after a thorough flushing, see a doctor immediately.*



**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 remove the used cartridge from the printer until you have obtained a replacement. Otherwise, the ink remaining in the print head nozzles may dry out.*
- ❑ *You must remove the yellow tape seal from the cartridge before installing it; otherwise, a fatal error will occur and the cartridge will become unusable.*
- ❑ *Do not remove the blue portion of the tape seal from the top of the cartridge; otherwise, the print head may become clogged and unable to print.*
- ❑ *Do not remove the tape seals from the bottom of the cartridge; otherwise, ink will leak.*
- ❑ *Once you install the ink cartridges, do not open the ink cartridge clamps again until you replace the cartridges; otherwise, the cartridges may become unusable.*
- ❑ *Do not move the print head by hand; otherwise, you may damage the printer.*

**Note:**

- ❑ *Do not continue to print when one ink cartridge is empty, even if the other cartridge still contains ink. Before printing, replace the empty cartridge.*
- ❑ *In addition to the ink used during document printing, ink is consumed during print head cleaning, ink cartridge replacement, and the self-cleaning cycle which is performed when the printer is turned on.*

---

## **Replacing an Old or Damaged Ink Cartridge**

In some circumstances, you may need to replace an ink cartridge before it is empty. For example, if the quality of your printouts remains poor even after repeatedly cleaning and aligning the print head, one or both of the ink cartridges may be old or damaged and should be replaced.

To replace an ink cartridge before the Status Monitor notifies you that the cartridge is empty, use the Ink Cartridge Replacement utility included with your printer software.

**Note:**

*If an on-screen message instructs you to replace an ink cartridge, replace it as described in “Replacing an Empty Ink Cartridge” on page 5-1.*

## **Using the Ink Cartridge Replacement utility**

Follow the steps below to use the Ink Cartridge Replacement utility.

**Note:**

*You can only access the Ink Cartridge Replacement utility from the Utilities menu in your EPSON printer driver.*

1. Access the printer software. For instructions on accessing the software, see “Accessing the printer software” on page 2-2.
2. Click the Utility tab, then click the Ink Cartridge Replacement button.
3. Follow the instructions on your screen.



**Caution:**

- ❑ *Once you remove an installed ink cartridge from the printer, it becomes unusable and cannot be reinstalled even if ink remains.*
- ❑ *Do not remove the used cartridge from the printer until you are ready to replace it with a new one.*
- ❑ *You must remove the yellow tape seal from the cartridge before installing it; otherwise, a fatal error will occur and the cartridge will become unusable.*
- ❑ *Do not remove the blue portion of the tape seal from the top of the cartridge; otherwise, the print head may become clogged and will be unable to print.*
- ❑ *Do not remove the tape seals from the bottom of the cartridge; otherwise, ink will leak.*
- ❑ *Once you install the cartridges, do not open the ink cartridge clamps again until you replace the cartridges; otherwise, the cartridges may become unusable.*





## Chapter 6

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# Maintenance

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---

## Checking the Print Head Nozzles

If you find that the printed image is unexpectedly faint or dots in the printed image are missing, you may be able to identify the problem by checking the print head nozzles.

You can check the print head nozzles from your computer with the Nozzle Check utility, accessed through the printer software or the shortcut icon.

### Using the Nozzle Check utility

**Note:**

- ❑ *Before using the utility, make sure that A4 or Letter size paper is loaded in the sheet feeder.*
- ❑ *Do not use the Nozzle Check utility while printing is in progress; otherwise, your printout may be marred.*

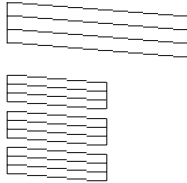
There are two ways to access the utility:

- ❑ Right-click the printer-shaped icon on the Windows taskbar and select Nozzle Check.
- ❑ Access the printer software and click the Utility tab, then click the Nozzle Check button. For details on accessing the printer software, see “Accessing the printer software” on page 2-2.

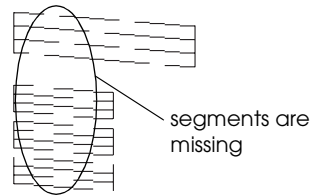
After opening the utility, follow the on-screen instructions.

The printer prints a nozzle check page. Below are sample printouts.

Good sample



Print head needs to be cleaned



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

If the nozzle check page does not print satisfactorily (for example, if any segment of the printed lines is missing) there is a problem with the printer. This could be a clogged ink nozzle or a misaligned print head. See the next section for details on cleaning the print head. For information on aligning the print head, see “Aligning the Print Head” on page 6-5.

---

## ***Cleaning the Print Head***

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 head, which ensures that the nozzles are delivering ink properly.

You can clean the print head from your computer using the Head Cleaning utility, accessed through the printer software or the shortcut icon.

### ***Note:***

- ❑ *Print head cleaning uses both color and black ink. To avoid wasting ink, clean the print head only if print quality declines; for example, if the printout is blurry or the color is incorrect or missing.*

- ❑ *Use the Nozzle Check utility first to confirm that the print head needs to be cleaned. This saves ink.*
- ❑ *Do not start the Head Cleaning or Nozzle Check utility while printing is in progress; otherwise, your printout may be marred.*

## **Using the Head Cleaning utility**

**Note:**

*If the Status Monitor or Progress Meter displays a message indicating that the ink cartridges need replacing, you cannot clean the print head. Replace the appropriate ink cartridge first.*

There are two ways to access the utility:

- ❑ *Right-click the printer-shaped icon on the Windows taskbar and select Head Cleaning.*
- ❑ *Access the printer software and click the Utility tab, then click the Head Cleaning button. For details on accessing the printer software, see “Accessing the printer software” on page 2-2.*

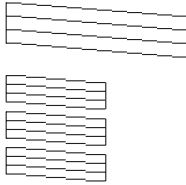
After opening the utility, follow the on-screen instructions. Click Print nozzle check pattern in the Head Cleaning dialog box to confirm that the head is clean and to reset the cleaning cycle.

**Note:**

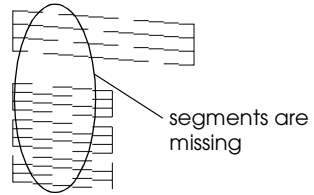
*The cleaning cycle takes about thirty seconds to complete.*

Below are nozzle check patterns:

Good sample



Print head needs to be cleaned



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, unplug the power cord of your printer and leave it alone overnight. Then do the head cleaning again.

If the print quality still has not improved, one or both of your ink cartridges may be old or damaged and may need to be replaced. To replace an ink cartridge, see "Replacing an Empty Ink Cartridge" on page 5-1.

If print quality remains a problem after replacing the ink cartridges, contact your dealer.

**Note:**

*To maintain print quality, we recommend turning on the printer for at least one minute every month.*

---

## ***Aligning the Print Head***

If you notice a misalignment of vertical lines, you may be able to solve this problem from your computer with the Print Head Alignment utility, accessed through your printer software or the shortcut icon.

***Note:***

*Do not start the Print Head Alignment utility while printing is in progress; otherwise, your printout may be marred.*

There are two ways to access the utility:

- ❑ Right-click the printer-shaped icon on the Windows taskbar and select Print Head Alignment.
- ❑ Access the printer software and click the Utility tab, then click the Print Head Alignment button. For details on accessing the printer software, see “Accessing the printer software” on page 2-2.

After opening the utility, follow the on-screen instructions.

---

## ***Cleaning the Printer***

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

1. Unplug the printer’s power cord.
2. Remove any paper from the sheet feeder.
3. Use a soft brush to carefully clean away all dust and dirt from the sheet feeder.

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 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 of 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, carefully prepare and repack it as described below using the original box (or a similar box that the printer fits snugly into) and packing materials.

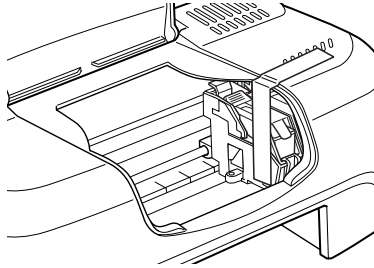
1. Open the printer cover and make sure that the print head is in the home (far right) position. If not, plug in the printer and wait until the print head returns to the home position. Then close the printer cover and unplug the printer.



**Caution:**

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

2. Disconnect the interface cable from the printer.
3. Remove the paper from the sheet feeder and remove the paper support.
4. Open the printer cover again. Secure the ink cartridge holder to the printer with tape as shown below, then close the printer cover.



5. Attach the protective materials to both sides of the printer.
6. Repack the printer and power cord in the original box.
7. Keep the printer level during transport.

---

## ***Updating Software***

Follow the directions in this section if you have upgraded your computer from Windows 95 to Windows 98 or if you are a Windows NT 4.0 or Windows 2000 user and wish to update your printer driver from a previous version.



## ***Updating to Windows 98***

If you have upgraded your computer's operating system from Windows 95 to Windows 98, you must uninstall your printer software and then install it again. Uninstall the printer software by double-clicking the Add/Remove Programs icon in the Windows Control Panel and selecting EPSON Printer Software from the list. Click the Add/Remove button and then Yes in the dialog box that appears. Click OK in the Add/Remove Programs Properties dialog box and install the printer software again.

## ***Updating the driver in Windows 2000***

When you update the printer driver in Windows 2000, please be sure to uninstall the previous printer driver before you install the new driver. Installing over the existing printer driver results in a failure to update. To uninstall the printer driver, double-click the Add/Remove Programs icon in the Windows Control Panel. The Add/Remove Programs properties dialog box appears. Select EPSON Printer Software from the list, click Add/Remove, and then OK. Then, install the printer software again.



## Chapter 7

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# Troubleshooting

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## ***Diagnosing the 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 Status Monitor utility.

Use the information presented in this chapter to pinpoint the source of your problem, then apply the recommended solutions until the problem is solved.

The Status Monitor 3 utility provides status messages and a graphic display showing the current state of the printer.

If a problem occurs while printing, an error message appears in the Progress Meter window. Click the HOW TO button to have the Status Monitor provide instructions for dealing with the problem.

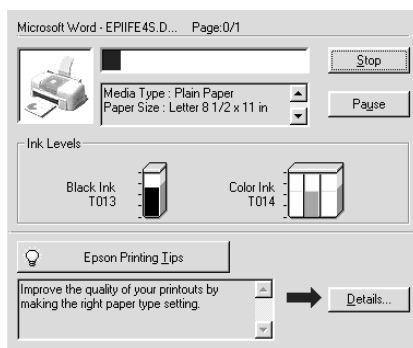
When the ink is out, click the HOW TO button in the Status Monitor or Progress Meter window and EPSON Status Monitor 3 will lead you step-by-step through the cartridge replacement procedure.

---

## ***Cancelling Printing***

If the printouts are not what you expected and contain incorrect or garbled characters or images, you may need to cancel printing. To cancel printing, follow the instructions below.

When you send a print job to the printer, the Progress Meter appears on your computer screen.



Click the Stop button to cancel printing.

---

## ***Print Quality Could Be Better***

If you are having print quality problems, try the solutions offered in this section.

### ***Horizontal banding***

Try one or more of these solutions:

- Make sure the printable side of the paper is face up in the sheet feeder.
- Run the Head Cleaning utility to clear any clogged ink nozzles.
- Select Automatic as the Mode setting on your printer driver's Main menu.

- ❑ Make sure there are no error messages displayed. If an error message indicates that the ink cartridges need replacing, click the HOW TO button and follow the instructions on-screen.
- ❑ Make sure that Maximum is not selected as the Printable Area setting in your printer driver. When this setting is selected, banding may occur in the expanded area.
- ❑ Make sure the Media Type selected in the printer driver is appropriate for the type of media loaded in the printer.

## ***Vertical misalignment or banding***

Try one or more of these solutions:

- ❑ Make sure the printable side of the paper is face up in the sheet feeder.
- ❑ Run the Print Head Alignment utility.
- ❑ Clear the High Speed check box in the Advanced dialog box of your printer driver. For instructions, see “Using the Advanced settings” on page 2-10.
- ❑ Run the Head Cleaning utility to clear any clogged ink nozzles.
- ❑ Make sure the Media Type setting selected in the printer driver is appropriate for the type of media loaded in the printer.

## ***Color gaps***

Try one or more of these solutions:

- ❑ Make sure your paper is not damaged, dirty, or too old. Also, make sure the printable side of the paper is face up in the sheet feeder.

- ❑ Run the Head Cleaning utility to clear any clogged ink nozzles.
- ❑ Make sure there are no error messages displayed. If an error message indicates that the ink cartridges need replacing, click the HOW TO button and follow the instructions on-screen.
- ❑ Adjust the color settings in your application software or your printer driver. For instructions, see “Using the Advanced settings” on page 2-10.
- ❑ Select Automatic as the Mode setting on your printer driver’s Main menu.
- ❑ Make sure the Media Type setting selected in the printer driver is appropriate for the type of media loaded in the printer.

### ***Incorrect or missing colors***

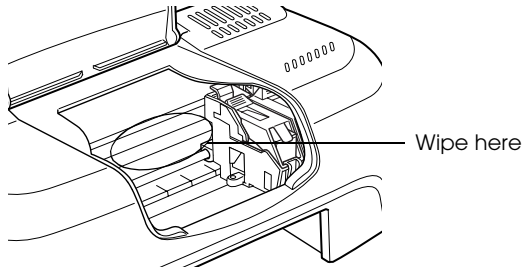
Try one or more of these solutions:

- ❑ Change the Ink setting in your printer driver to COLOR. For instructions, see “Using the Automatic mode” on page 2-7.
- ❑ Adjust the color settings in your application software or your printer driver. For instructions, see “Using the Advanced settings” on page 2-10.
- ❑ Run the Head Cleaning utility. If colors are still incorrect or missing, replace the color ink cartridge. If the problem persists, replace the black ink cartridge. See “Replacing an Empty Ink Cartridge” on page 5-1.

### ***Blurry or smeared printout***

Try one or more of these solutions:

- ❑ Make sure your paper is dry and the printable side is facing up. Also, make sure you're using an acceptable paper type. See "Paper" on page B-2 for specifications.
- ❑ Select Automatic as the Mode setting on your printer driver's Main menu.
- ❑ If the paper is curled toward the printable side, flatten it or curl it slightly toward the opposite side.
- ❑ Remove each sheet from the output tray as it is printed, especially if you are using transparencies.
- ❑ If you're printing on glossy media or transparencies, place a support sheet (or a sheet of plain paper) beneath the stack. Or, load one sheet at a time.
- ❑ Run the Head Cleaning utility.
- ❑ Run the Print Head Alignment utility.
- ❑ Ink may have leaked inside the printer; wipe the inside of the printer with a soft, clean cloth.



**Warning:**

*Be careful not to touch the gears inside the printer.*



---

## ***Printouts Are Not What You Expected***

If one of the following problems has occurred, try the solutions listed for the problem.

- Incorrect or garbled characters
- Incorrect margins
- Inverted image
- Blank pages print
- Printout has smears on the bottom edge
- Printing is too slow

### ***Incorrect or garbled characters***

Try one or more of these solutions:

- Select your printer as the default printer in Windows.
- Clear any stalled print jobs from the Spool Manager. For instructions, see "Using EPSON Spool Manager" on page 3-2.
- Unplug the printer and turn off the computer. Make sure the printer's interface cable is securely plugged in.
- If you are using Windows NT 4.0, try to uninstall the EPSON Printer Port. Click Start, point to Programs, then point to EPSON Printers and click EPSON Printer Port Uninstall. Follow the on-screen instructions.

### ***Incorrect margins***

Try one or more of these solutions:

- ❑ Check the margin settings in your application software. Make sure the margins are within the printable area of the page. See “Paper” on page B-2 for specifications.
- ❑ Check the settings in the Paper menu. Make sure the settings are appropriate for the paper size you are using.

## ***Inverted image***

Turn off the Flip Horizontal setting in the printer driver, or the “Mirror” setting in your application software. For instructions, see the online help for the printer driver or for your application.

## ***Blank pages print***

Try one or more of these solutions:

- ❑ Select your printer as the default printer in Windows.
- ❑ Check the settings in the Paper dialog box. Make sure they are appropriate for the paper size you are using.
- ❑ Run the Head Cleaning utility to clear any clogged nozzles.

## ***Printout has smears on the bottom edge***

Try one or more of these solutions:

- ❑ If the paper is curled toward the printable side, flatten it or curl it slightly toward the opposite side.
- ❑ Clear the High Speed check box in your printer driver’s Advanced dialog box. The Advanced dialog box is accessible through the Main menu when Custom is selected as the Mode setting. To turn this option off, you may also need to change the Print Quality setting.

## ***Printing is too slow***

Try one or more of these solutions:

- Make sure the Media Type setting in your printer driver is correct. For instructions, see “Making the Media Type setting” on page 2-4.
- Select Automatic as the Mode setting on your printer driver’s Main menu and then move the slider to Speed. For instructions, see “Using the Automatic mode” on page 2-7.
- Close any applications you are not using at the moment.
- If you upgraded from Windows 95 to Windows 98, uninstall the printer software using Add/Remove Programs in the Windows Control Panel, then install the software again.

---

## ***Printer Doesn't Print***

Try one or more of these solutions:

- Turn off computer and unplug the printer. Make sure the printer’s interface cable is securely plugged in.
- Make sure there is no packing material in the printer.
- The printer’s voltage may not match the outlet rating. Unplug the printer immediately. Then, check the printer labels.

If the voltage does not match, **DO NOT PLUG YOUR PRINTER BACK IN.** Contact your dealer.

- If you’re trying to print a large image, your computer may not have enough memory to print. Try printing a smaller image.

- ❑ If you are using Windows NT 4.0, try to uninstall the EPSON Printer Port. Click Start, point to Programs and EPSON Printers, then click EPSON Printer Port Uninstall. Follow the on-screen messages.
- ❑ Clear any stalled print jobs from the Spool Manager. For instructions, see “Using EPSON Spool Manager” on page 3-2.
- ❑ If the printer sounds like it’s trying to print, but is unable to, run the Head Cleaning utility.

If this doesn’t work, replace the ink cartridges. See “Replacing an Empty Ink Cartridge” on page 5-1 for instructions.

- ❑ Make sure there are no error messages displayed. If an error message indicates that the ink cartridges need replacing, click the How To button and follow the instructions on-screen.

---

## ***Paper Doesn't Feed Correctly***

If one of the following problems has occurred, try the solution(s) listed for the problem.

- ❑ Paper doesn't feed
- ❑ Multiple pages feed
- ❑ The paper jams
- ❑ Paper isn't ejected fully or is wrinkled

## ***Paper doesn't feed***

Remove the stack of paper and make sure of the following:

- ❑ The paper isn’t curled or creased.

- ❑ The paper isn't too old. See the instructions that came with the paper for more information.
- ❑ The paper isn't loaded above the arrow on the left edge guide.
- ❑ Paper isn't jammed inside. If it is, remove the jammed paper.
- ❑ The black and/or color ink cartridges are not out. If one is, replace the appropriate cartridge. See "Replacing an Empty Ink Cartridge" on page 5-1.

Then, load the paper again. Make sure you follow any special loading instructions that came with your paper. See also "Paper Handling" on page 19.

## ***Multiple pages feed***

Remove the stack of paper and make sure the paper is not too thin. See "Paper" on page B-2 for specifications. Fan the edges of the stack to separate the sheets, then reload the paper.

If too many copies of a document are being printed, check the Copies setting in both the printer driver and your application. For instructions, see "Modifying the printout style" on page 2-17 for Windows.

## ***The paper jams***

Follow the on-screen instructions. Click Eject to eject any jammed paper. If paper is still jammed inside the printer, click Stop then open the printer cover and remove the paper.

### ***Note:***

*If you cannot remove the foreign object easily by yourself, do not use force and do not disassemble the printer. Call your dealer for assistance.*

If your paper jams frequently, make sure of the following:

- The paper is smooth, not curled or wrinkled.
- The paper is of high-quality, loaded with the printable side up.
- The paper stack was fanned before loading.
- The paper isn't loaded above the arrow on the left edge guide.
- The left edge guide is adjusted to fit your paper.

## ***Paper isn't ejected fully or is wrinkled***

If the paper doesn't eject fully, click Stop on the Progress Meter, then open the printer cover and remove the paper. Also check the Paper Size setting in your application or printer driver.

If the paper is wrinkled when it comes out, it may be damp or too thin. Load a new stack.

### ***Note:***

*Store any unused paper in its original packaging in a dry area. See "Paper" on page B-2 for specifications.*

---

## ***Where to Get Help***

If your printer is not operating properly and you cannot solve the problem using the troubleshooting information in your printer documentation, contact customer support services for assistance.

Customer support will be able to help you much more quickly if you provide them with the following information.

- 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  
(Click About in your printer driver)
- Windows version you are using
- Software application(s) you normally use with your printer  
and their version number(s)





*Chapter 8*

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***Consumable Products***

Consumable Products.....8-2

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## **Consumable Products**

The following ink cartridges and EPSON special media are available for your printer.

### ***Ink cartridges***

You can use the following cartridges with your printer.

Black ink cartridge	T013051
Color ink cartridge	T014051

#### ***Note:***

*The product numbers of ink cartridges may vary by location.*

### ***EPSON special media***

EPSON offers specifically designed media for ink jet printers to meet most high-quality printing needs.

EPSON Premium Ink Jet Plain Paper (A4)	S041214
EPSON 360 dpi Ink Jet Paper (A4)	S041059
EPSON Photo Quality Ink Jet Paper (A4)	S041061
EPSON Photo Quality Ink Jet Cards (A6)	S041054
EPSON Photo Quality Ink Jet Cards (5 × 8")	S041121
EPSON Photo Quality Ink Jet Cards (8 × 10")	S041122
EPSON Photo Quality Self Adhesive Sheets (A4)	S041106
EPSON Ink Jet Note Cards A6 (with envelopes)	S041147
EPSON Ink Jet Greeting Cards 5 × 8" (with envelopes)	S041148
EPSON Ink Jet Greeting Cards 8 × 10" (with envelopes)	S041149
EPSON Photo Quality Glossy Film (A4)	S041071
EPSON Photo Quality Glossy Film (A6)	S041107
EPSON Ink Jet Transparencies (A4)	S041063

EPSON Photo Paper (A4)	S041140
EPSON Photo Paper (4 × 6")	S041134
EPSON Photo Paper Cards (A4)	S041177
EPSON Photo Stickers 16 (A6)	S041144
EPSON Photo Stickers 4 (A6)	S041176
EPSON Panoramic Photo Paper (210 × 594 mm)	S041145
EPSON Iron-On Cool Peel Transfer Paper (A4)	S041154
EPSON Matte Paper-Heavyweight (A4)	S041259

**Note:**

*The availability of special media varies by location.*



*Appendix A*

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***Tips for Color Printing***

Basics of Color .....A-2  
Image Resolution and Image Size.....A-5  
Guidelines for Using Color .....A-7

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## **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.

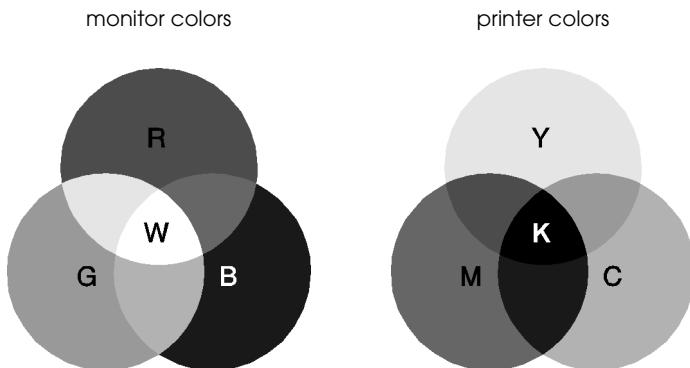
**Note:**

*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.*

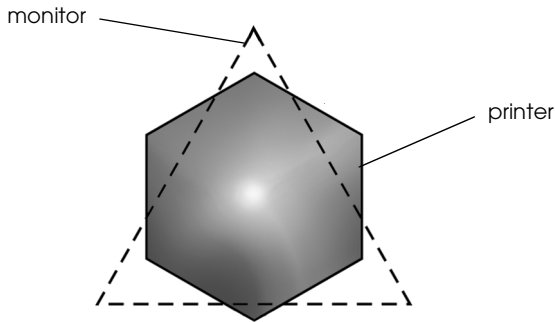
A cathode-ray tube (CRT) monitor produces images by illuminating color phosphors on the screen with an electron gun. (A phosphor is a substance that gives off light when irradiated.) Each screen point (pixel) has three colored phosphors: red (R), green (G), and blue (B).

Since the printer and monitor produce color images differently, and 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 documentation for information on color matching.



The range of colors that can be displayed:

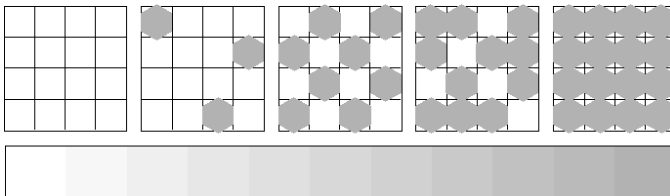


**Note:**

*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. This method is shown in the image below.



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 natural 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 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.*

300 pixel



Print  
225 pixel →



300 dpi

300 pixel

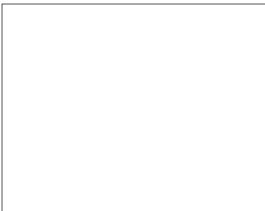


Print  
225 pixel →



150 dpi

400 pixel



Print  
292 pixel →



300 dpi

100 pixel



Print  
72 pixel →



75 dpi

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.

---

## ***Guidelines for Using Color***

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—will it be a customer, a co-worker, or some other person? Also you should consider what your purpose is—do you wish to advise, sell, or propose, or do you have some other purpose?

#### **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 the reader's 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:**

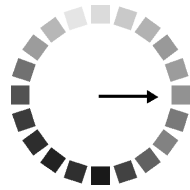
An overhead presentation of sales results by territory is far more interesting and memorable if you show the figures with colored charts and graphs.

**Know HOW to select colors**

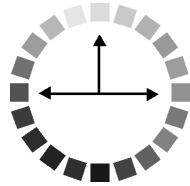
Determine a rule for using color throughout the document. Follow the rules below to make your color document more appealing and effective.

- ❑ Use just one hue in the hue circle to make your document unified. Modify saturation or brightness to add interest.

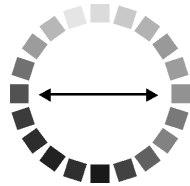
*or*



- ❑ Use contrasting hues to make your work more eye-catching.



- ❑ Do not use complementary colors in documents.



**Note:**

*See the Color Guide for details on the hue circle.*



# Appendix B

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## **Printer Specifications**

Printing .....	B-2
Paper .....	B-2
Paper specifications .....	B-3
Printable area .....	B-5
Ink Cartridges .....	B-7
Mechanical .....	B-9
Electrical .....	B-9
Environmental .....	B-10
Safety Approvals .....	B-10
System Requirements .....	B-11
For using the printer .....	B-11

---

## Printing

Printing method	On-demand ink jet
Nozzle configuration	Monochrome (black) 48 nozzles Color (cyan, magenta, yellow) 45 nozzles (15 [each color] × 3)
Resolution	Maximum 720 dpi × 720 dpi
Print direction	Bidirectional with logic seeking
Control code	ESC/P Raster EPSON Remote
Input buffer	32 KB

---

## 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. Always test samples of paper stock before purchasing large quantities or printing large jobs.*



## ***Paper specifications***

### Single sheets:

Size	A4 (210 mm × 297 mm) A5 (148 mm × 210 mm) Letter (216 mm × 279 mm) Legal (216 mm × 356 mm)
Paper types	Plain bond paper, special papers distributed by EPSON
Thickness (for plain bond paper)	0.08 mm to 0.11 mm (0.003 to 0.004 inch)
Weight (for plain bond paper)	64 g/m <sup>2</sup> (17 lb) to 90 g/m <sup>2</sup> (24 lb)

### Envelopes:

Size	No. 10 (104.8 mm × 241 mm) DL (110 mm × 220 mm) C6 (114 mm × 162 mm) 132 mm × 220 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 <sup>2</sup> (12 lb) to 75 g/m <sup>2</sup> (20 lb)

### Index cards:

Size	A6 (105 mm × 148 mm) 5 × 8" (127 mm × 203 mm) 8 × 10" (203 mm × 254 mm)
Paper types	Special papers distributed by EPSON

Transparencies, glossy film:

Size	A4 (210 mm × 297 mm) Letter (216 mm × 279 mm) A6 (105 mm × 148 mm)* * for glossy film
Paper types	Special papers distributed by EPSON

Self-adhesive sheets:

Size	A4 (210 mm × 297 mm)
Paper types	Special paper distributed by EPSON

Matte Paper-Heavyweight:

Size	A4 (210 mm × 297 mm) Letter (216 mm × 279 mm)
Paper types	Special papers distributed by EPSON

Photo paper:

Size	A4 (210 mm × 297 mm) Letter (216 mm × 279 mm) 4 × 6" (102 mm × 152 mm) 100 mm × 150 mm 200 mm × 300 mm
Paper types	Special papers distributed by EPSON

Photo Stickers:

Size	A6 (105 mm × 148 mm) with 4 or 16 frames
Paper types	Special paper distributed by EPSON

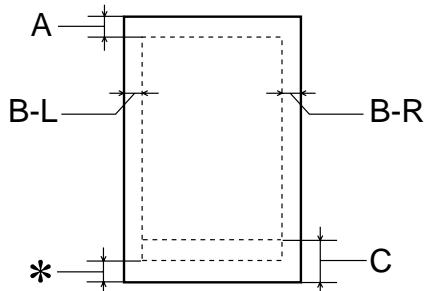
**Note:**

- ❑ *Poor quality paper may reduce print quality and cause paper jams or other problems. If you encounter problems, switch to a higher grade of paper.*

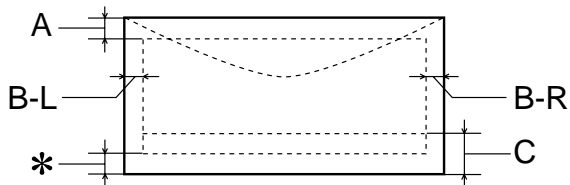
- ❑ Do not load curled or folded paper.
- ❑ Use paper under normal conditions:  
Temperature 15 to 25°C (59 to 77°F)  
Humidity 40 to 60% RH

## Printable area

Single sheets (including panoramic size) and index cards



Envelopes



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

When loading multiple sheets of EPSON Photo Quality Glossy Film, the minimum top margin is 30.0 mm (1.2").

- B-L: The minimum left margin is 3.0 mm (0.12").
- B-R: The minimum right margin is 3.0 mm (0.12").
- C: The minimum bottom margin is 14.0 mm (0.55").

When printing near the minimum bottom margin, some colors may not be printed properly. If this occurs, try increasing the bottom margin.

- \*: You can extend the minimum bottom margin to 3 mm by selecting Maximum as the Printable Area setting on the printer driver's Paper menu. However, print quality may decline in the expanded area. Before printing large jobs using this setting, print a single sheet to confirm printout quality.

**Note:**

*Always load paper into the sheet feeder short edge first. Load envelopes flap edge first with the flap side down.*

---

## ***Ink Cartridges***

### **Black ink cartridge (T013)**

Color	Black
Print capacity*	320 pages, comparable with 3.5% ECMA (ISO 10561) at 360 dpi 220 pages, 5% in calculation
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	19.8 mm (W) × 52.7 mm (D) × 38.5 mm (H)

## Color ink cartridge (T014)

Color	Cyan, magenta, and yellow
Print capacity*	180 pages, 5% each CMY (total 15%) in calculation
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 and how often you use the printer.

\*\* Ink thaws and is usable after approximately 3 hours at 25°C (77°F).



### **Caution:**

- ❑ *EPSON recommends the use of original EPSON ink cartridges only. 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
Paper path	Sheet feeder, rear entry
Sheet feeder capacity	About 100 sheets at 64 g/m <sup>2</sup> (17 lb) paper
Dimensions	Storage Width: 431 mm (17.0 inches) Depth: 210 mm (8.3 inches) Height: 160 mm (6.3 inches) Printing Width: 431 mm (17.0 inches) Depth: 311 mm (12.2 inches) Height: 271 mm (10.7 inches)
Weight	3.0 kg (6.6 lb) without the ink cartridges

---

## ***Electrical***

	<b>120 V Model</b>	<b>220-240 V Model</b>
Input voltage range	99 to 132 V	198 to 264 V
Rated frequency range	50 to 60 Hz	
Input frequency range	49.5 to 60.5 Hz	
Rated current	0.4 A	0.2 A
Power consumption	Approx. 21 W (ISO10561 Letter Pattern)	
	Approx. 5 W in standby mode	Approx. 5.5 W in standby mode

**Note:**

*Check the label on the back of the printer for the voltage of your printer.*

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## **Environmental**

Temperature	Operation: 10 to 35°C (50 to 95°F) Storage: -20 to 40°C (-4 to 104°F) 1 month at 40°C (104°F) Transit:* -20 to 60°C (-4 to 140°F) 120 hours at 60°C (140°F)
Humidity	Operation: 20 to 80% RH Storage:*,** 5 to 85% RH

\* Stored in shipping container

\*\* Without condensation

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## **Safety Approvals**

Safety standards:

U.S. model	UL 1950 CSA C22.2 No.950
European model	Directive 73/23/EEC EN60950



EMC:

U.S. model	FCC part 15 subpart B class B
European model	Directive 89/336/EEC EN 55022 (CISPR Pub. 22) class B EN 50082-1 IEC 60801-2 IEC 60801-3 IEC 60801-4 EN 61000-3-2 EN 61000-3-3
Australian model	AS/NZS 3548 class B

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## ***System Requirements***

### ***For using the printer***

To use your printer, you need Microsoft® Windows® 98, Windows® 95, Windows® 2000 or Windows NT® 4.0 installed and a shielded, twisted-pair parallel cable connected.

Your computer should also meet the following system requirements.

<b>Minimum System Requirements</b>	<b>Recommended System</b>
i486/25 MHz for Windows 95 and NT 4.0 i486/66 MHz for Windows 98 Pentium 133 MHz for Windows 2000	Pentium or higher processor for Windows 98, 95 and NT 4.0 133 MHz or higher processor for Windows 2000
16 MB RAM for Windows 98, 95 and NT 4.0 32 MB RAM for Windows 2000	32 MB RAM or more for Windows 98 and 95 64 MB or more for Windows 2000 and NT 4.0

20 MB hard disk space for Windows 98 and 95 40 MB for Windows 2000 and NT 4.0	50 MB or more hard disk space for Windows 98 and 95 100 MB or more for Windows 2000 and NT 4.0
VGA monitor	VGA or better monitor

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

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# Glossary

The following definitions apply specifically to printers.

**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.

**banding**

The horizontal lines that sometimes appear when printing graphics. This occurs when the print head is misaligned. See also *MicroWeave*.

**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.

**CMYK**

Cyan (blue-green), magenta, yellow, and black. These colored inks are used to create the subtractive system array of printed colors.

**color matching**

A method of processing color data so that colors displayed on a computer screen closely match colors in printouts. A variety of color-matching software is available.

**cpi**

See *characters per inch*.

**default**

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

**DMA**

Direct Memory Access. A data transfer feature that bypasses a computer's CPU and allows direct communication between a computer and peripheral devices (like printers), and between one peripheral device and another.

**dpi**

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

**drive**

A memory device, such as CD-ROM, hard disk, or floppy disk. In Windows, a letter is assigned to each drive for easy management.

**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 processor 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.

**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 detailed graphics or photographic images.

**ESC/P**

Abbreviation for EPSON Standard Code for Printers, the system of commands your computer uses to control your printer. It is standard for all EPSON printers and is supported by most application software for personal computers.

**Finest detail**

This printer driver setting automatically makes your printout sharper and clearer, especially for text. 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.

**high speed printing**

Printing in which images are printed in both directions. This provides faster printing.

**ICM (Image Color Matching)**

The color matching method used by Windows 95, 98, and 2000 to match the colors in your printout with the colors displayed on your screen.

**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 cartridge**

Contains the ink your printer uses when printing.

**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 the printer. A parallel interface transmits data one character or code at a time. A serial interface transmits data one bit at a time.

**interface cable**

The cable that connects the computer and the printer.

**local printer**

The printer connected to the computer's port directly by interface cable.

**media**

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

**memory**

The part of the printer's electronic system that is used to store information (data). Some information is fixed and is used to control how the printer operates. Information that is sent to the printer from the computer is stored in memory temporarily. See also *RAM* and *ROM*.

**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**

Printing with only one color of ink, usually black.

**nozzle**

Fine tubes in the print head through which ink is sprayed onto the page. Print quality may decline if the print head nozzles are clogged.

**operation check**

A method for checking the operation of the printer. When you perform a printer operation check, the printer prints the ROM version, code page, ink counter code, and a nozzle check pattern.

**parallel interface**

See *interface*.

**port**

An interface channel through which data is transmitted between devices.

**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”.

**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.

**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 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 a cathode ray tube (CRT) monitor's electron gun, are used to create the additive array of screen colors.

**serial interface**

See *interface*.

**spool**

The first step in printing, in which the printer driver converts the print data into codes that your printer understands. This data is then sent directly to the printer or to the print server.

**spool manager**

The software program that converts print data into codes that your printer understands. See also *spool*.

**sRGB**

The color management method used to maintain color consistency between devices which adhere to the sRGB standard.

**status monitor**

The software program that allows you to check the printer's status.

**subtractive colors**

Colors produced by pigments that absorb some colors of light and reflect others. See also *CMYK*.

**USB interface**

Universal Serial Bus interface. Enables the user to connect up to 127 peripheral devices (such as keyboards, mice, and printers) to the computer through a single, general-purpose port. The use of USB hubs allows you to add additional ports. See also *interface*.

**WYSIWYG**

What-you-see-is-what-you-get. This term is used to describe printout that looks exactly like it appears on screen.

