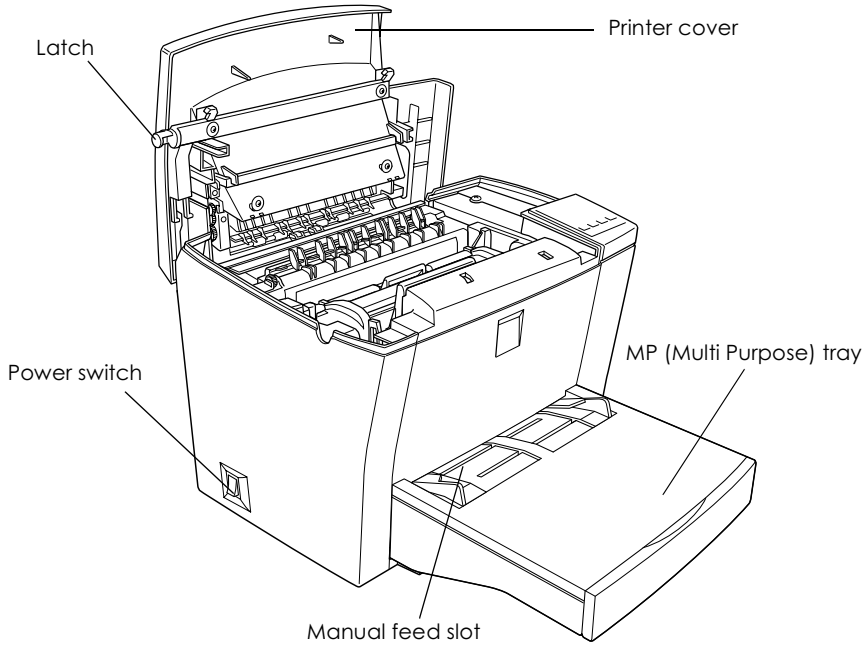
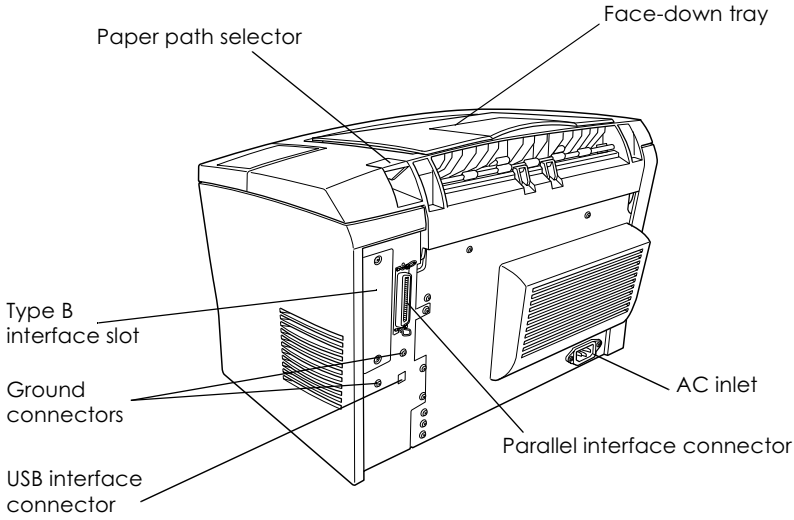
Printer Parts





EPSON®

Laser Printer

EPL-5800

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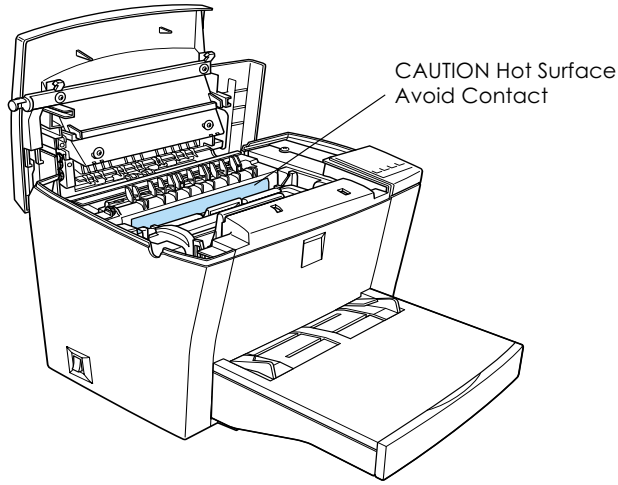
Safety Precautions

Be sure to follow these precautions carefully to ensure safe, efficient operation:

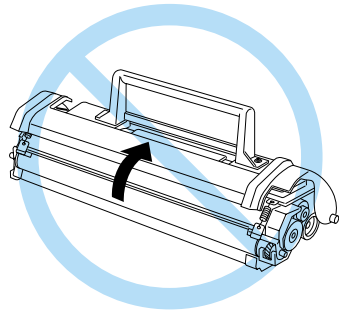
- ❏ Be careful not to touch the fuser, which is marked CAUTION Hot Surface Avoid Contact, or the surrounding areas. If the printer has been in use, the fuser and the surrounding areas may be very hot.



- ❏ Avoid touching the components inside the printer unless instructed to do so in this guide.

- ❏ Never force the printer's components into place. Although the printer is designed to be sturdy, rough handling can damage it.

❏ When removing the developer cartridge, never touch the developing roller under the flap; otherwise, print quality will decline.



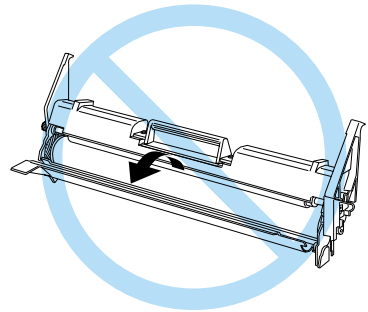
❏ Do not turn the cartridge upside down or stand it on its ends.

❏ When handling the cartridge, always place it on a clean, smooth surface.

❏ Do not attempt to modify or take the cartridge apart. It cannot be refilled.

❏ Do not touch the toner and avoid all contact with your eyes.

- ❏ When removing or installing a photoconductor unit, protect the light-sensitive drum from exposure to light any longer than necessary. The light-sensitive drum is the green cylinder visible through the openings in the unit. Overexposing the drum might cause abnormally dark or light areas to appear on the printed page and may shorten the service life of the unit.



- ❏ Be careful not to scratch the surface of the drum. When you remove the photoconductor unit from the printer, always place the unit on a clean, smooth surface. Avoid touching the drum, since oils from your skin can permanently damage its surface and affect print quality.

- ❏ To get the best print quality, do not store the photoconductor unit in an area subject to direct sunlight, dust, salty air, or corrosive gases (such as ammonia). Avoid locations subject to extreme or rapid changes in temperature or humidity.

- ❏ Wait for at least one hour before using a developer cartridge or a photoconductor unit after moving it from a cool to a warm environment to prevent damage from condensation.

Warning:
Do not dispose of used developer cartridges or photoconductor units in fire, as they can explode and cause injury. Dispose of them according to local regulations.

- ❏ Be sure to keep the consumable components out of the reach of children.
- ❏ Do not leave jammed paper in the printer. It can cause the printer to overheat.
- ❏ Avoid using outlets that other appliances are plugged into.
- ❏ Use only an outlet that meets the power requirements of this printer.

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 about the operation of your printer.*

Getting Started

The EPSON EPL-5800 Advanced printer combines high performance and reliability with a wide range of features.

To get started with your laser printer, please:

- ❏ Read the safety information, laser printer precautions, and important safety instructions in the *Setup Guide*.
- ❏ Use your *Setup Guide* to set up and test your new printer.

See this *Reference Guide* for detailed information about your printer.

About This Guide

This guide contains information about using your printer. For information about installing and setting up the printer, see the *Setup Guide*.

Chapter 1, "Using Your EPL-5800," explains how to operate the printer. It also contains information on how to optimize print quality.

Chapter 2, "Using Options," gives step-by-step instructions for installing the options available for the printer.

Chapter 3, "EPSON Status Monitor 3," explains how you can view printer status information such as the remaining amount of toner and check for any printer errors.

Chapter 4, "Remote Control Panel Utility," gives you instructions on how to use the Remote Control Panel utility to change printer settings.

Chapter 5, "Troubleshooting," gives helpful information for what to do if you encounter problems.

Chapter 6, "Maintenance and Transportation," provides instructions on how to clean and transport your printer.

Appendix A, "Technical Specifications," contains the technical specifications of the printer.

Appendix B, "Symbol Sets," lists the symbol sets available in each emulation mode, with tables showing the characters in each set.

Appendix C, "Command Summary," lists the commands that can be embedded in print jobs to control the printer. The information in this appendix is intended for advanced programming.

Appendix D, "Working with Fonts," describes the steps you need to follow to add more fonts. It also lists and shows samples of the available fonts.

Appendix E, "Contacting Customer Support," explains customer support information.

About Your Printer

Your printer is the latest in EPSON's advanced line of laser printers.

The printer offers high-quality printouts at true 1200-dpi resolution, enhanced 600-dpi resolution, or 600-dpi resolution. When using 600-dpi printing, you can enhance the results using EPSON's Resolution Technology (RITech) and Enhanced MicroGray technology. RITech works by smoothing out the jagged edges of diagonal and curved lines in both text and graphics, while Enhanced MicroGray improves the halftone quality of graphics.

The printer is easy to install and use. You simply set up the printer, connect it to your computer, and install the printer driver as described in the *Setup Guide*.

The printer supports ECP mode in Microsoft® Windows® 98/95 and Windows NT® 4.0. ECP mode provides for high-speed data transfer and bi-directional communication with your computer.

Features

The printer comes with a full set of features that contributes to ease of use and consistent, high-quality output. The main features are described below.

High-quality printing

Your printer provides 1200-dpi printing at a speed of up to 5 pages per minute, and 600-dpi printing at up to 10 pages per minute. You'll appreciate the professional print quality produced by your printer and its quick processing speed.

Toner Save mode

To reduce the amount of toner used in printing documents, you can print drafts using the Toner Save mode.

Options and consumable products

Options and consumable products are sold separately, and can be installed easily. To purchase options or consumable products, contact your dealer or the customer support representative in your area. The last digit of the product number, represented by an asterisk (*), varies by country. Be sure to mention the product number when placing your order.

Memory

The printer comes with 16 MB of memory, which can be expanded up to 256 MB.

Interface

The printer comes with a bi-directional parallel interface and a USB interface. Optional interface cards give you the option to add a serial, coaxial, twinaxial, Ethernet, GPIB, or an extra parallel connection.

ROM module

The Adobe® PostScript® 3™ Kit (C83239*) ROM module is a useful option that generates crisp PostScript output.

500-Sheet Lower Paper Cassette Unit (C81336)*

This unit installs onto the bottom of the printer. It automatically feeds up to 500 sheets of paper without reloading, and serves as a second paper source to your printer. Depending on the country of purchase, the unit takes either A4 or Letter size paper.

Face-up Tray (C81337)*

The Face-up Tray is recommended for printing on media that require a straight-through paper path, such as labels and transparencies.

Developer Cartridge

This cartridge includes the toner that creates the image on paper. The printer comes with this cartridge already installed. The service life of the cartridge is approximately 6,000 printed pages.

Photoconductor Unit

The photoconductor unit contains a light-sensitive drum that permanently fixes the toner onto paper. The printer comes with this unit already installed. This unit requires replacement after approximately 20,000 pages of printing.

Chapter 1

Using Your EPL-5800

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Making the Printer Settings

Printer settings can be made either through the printer driver or the Remote Control Panel utility. You should always try to make the settings in the printer driver because settings made in the printer driver override those made in the Remote Control Panel utility. However, the Remote Control Panel utility gives you access to certain settings that are not available in the printer driver.

The printer driver

You can access your printer driver directly from most Windows-based applications, or from your Windows operating system, as explained below. The printer driver settings made from many Windows applications override settings made when the driver is accessed from the operating system, so you should try to access the driver from your application to make sure you get the results you want.

- ❏ To access the printer driver from your application software, click the Print or Page Setup command on the File menu. You may also need to click Setup, Options, Properties, or a combination of these buttons.

- ❏ To access the printer driver from Windows 98/95 and Windows NT 4.0, click Start, point to Settings, and click Printers. Next, right-click the EPSON EPL-5800 Advanced icon and click Properties (in Windows 98/95) or Document Defaults (in Windows NT 4.0).

- ❏ To access the printer driver from Macintosh, select Chooser from the Apple menu. Then click the EPSON EPL-5800 Advanced icon and click Setup.

Accessing Online Help

Online help provides you with detailed information and instructions on using the printer driver, and can be accessed from within the printer driver itself. It is automatically installed when you install the printer driver.

Remote Control Panel utility

Note:
Before using this utility, be sure to read the README file located in the RCP_UK or RCP_US folder in the printer software CD-ROM. (The folder name depends on the country of purchase.) This file contains important information about the utility.

The Remote Control Panel utility is included in the printer software CD-ROM. This utility runs only on the DOS operating system. For information on installation and operating environment, see "Remote Control Panel Utility Overview" on page 4-2.

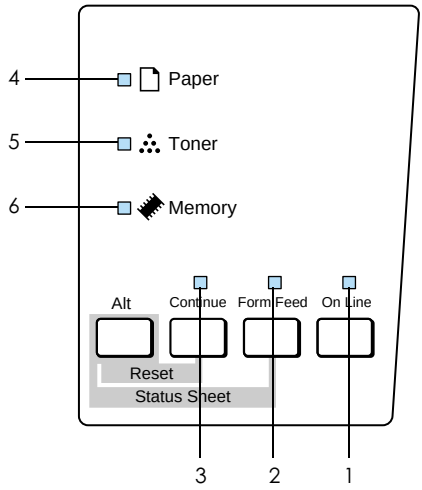
The Remote Control Panel utility should only be used to make basic printer settings such as paper size, paper type, and orientation if you are not able to change those settings from within your application or if you are running DOS programs. Most application programs give you access to the printer driver, where you can change settings that affect the final printed output. Settings you make from your application override those made from the Remote Control Panel utility.

However, the Remote Control Panel utility is the only software interface for making changes in printer emulation mode and other settings dependent on the emulation type. For more information, see the chapter dedicated to the "Remote Control Panel Utility (Windows)" on page 4-1.

Control Panel Operation

The printer's control panel has six indicator lights and four buttons. The indicator lights inform you of basic printer status, errors and warnings. The buttons allow you to control a number of basic printer operations.

Indicator lights



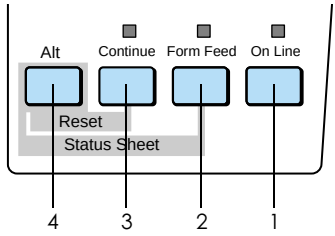
1	On Line	On when the printer is online, indicating that the printer can receive and print data. When the printer is offline, this light is off.

2	Data	On when data is received and stored in the printer buffer (printer memory reserved for receiving data), but not yet printed. Flashing indicates that the printer is processing data. When no data remains in the printer buffer, this light turns off.
3	Continue	Flashes or turns on in combination with other lights to indicate printer status and errors. When this light flashes in combination with another light, the error indicated can usually be temporarily cleared by pressing the Continue button. However, if this light comes on solid, the user has to perform a certain procedure before the error can be cleared, like clearing a paper jam or loading paper into an empty paper source. In these cases, the Continue light automatically turns off once the procedure is completed successfully, and printing resumes.
4	Paper	Turns on or flashes, sometimes in combination with the Continue light, to indicate a paper-related problem. On solid usually indicates a paper jam, while flashing indicates problems with the paper source, such as when the paper source is empty.

5	Toner	On when the printer's developer cartridge has run out of toner. Flashes to indicate that toner is running low. If this light is flashing, have a new developer cartridge ready. When the light comes on solid in combination with the Continue light, replace the used cartridge with a new one.
6	Memory	Turns on or flashes in combination with other lights to indicate an error, status, or warning that is usually, but not always, memory-related.

Buttons

This section explains how to use the control panel's buttons.



1	On Line	Toggles the printer online and offline.
2	Form Feed	Pressing this button when the printer is offline and when there is data remaining in the printer's memory (Data light on) prints out the data and clears the buffer.

3	Continue	Press this button to resume printing when an error occurs. However, this button is effective only if the Continue light is flashing, and not when it is on solid.
4	ALT	Use this button in combination with the Form Feed or Continue button. Press ALT+Form Feed to print a status sheet. Press ALT+Continue to reset the printer.

Paper Handling

The printer can feed paper from either of two sources: the MP tray or the optional 500-Sheet Lower Paper Cassette Unit.

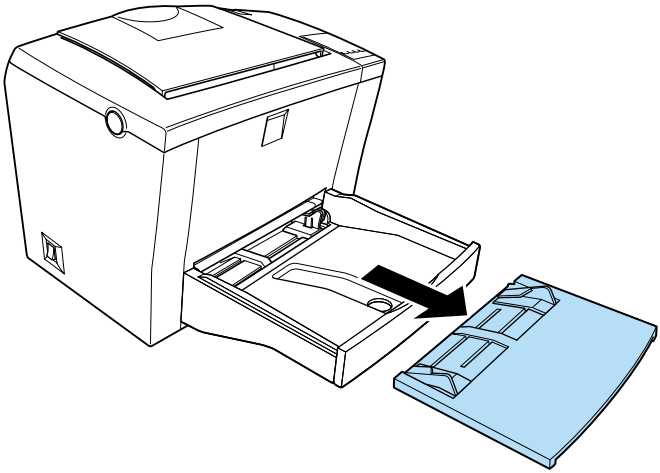
Please note the following points:

- ❏ Paper should be of high quality and be relatively smooth, with a weight between 60 and 90 g/m² (16 to 24 lb).
- ❏ The printer is extremely sensitive to moisture. Be sure to store paper in a dry environment.
- ❏ Use of colored paper is acceptable, but coated paper should be avoided.
- ❏ You may use paper with preprinted letterheads, provided that the paper and ink are both of laser-printer type.

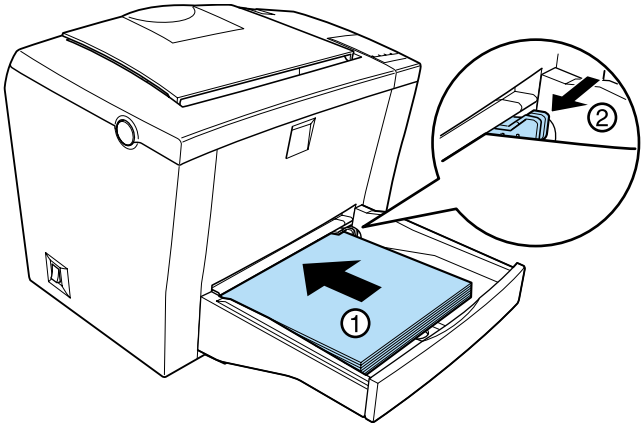
Loading paper into the MP tray

You can load up to 150 sheets of plain paper into the MP tray. To load paper, follow these steps:

1. Lift off the tray cover.



2. Fan a stack of paper and tap it on a flat surface to even the edges. Insert the paper printable side up into the tray and adjust the paper guides.

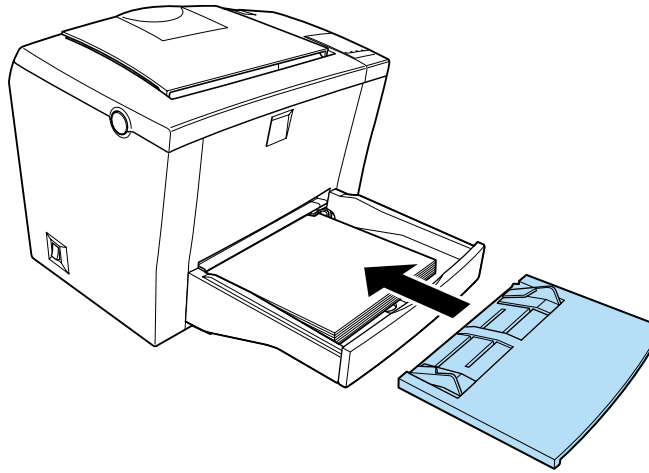


Note:

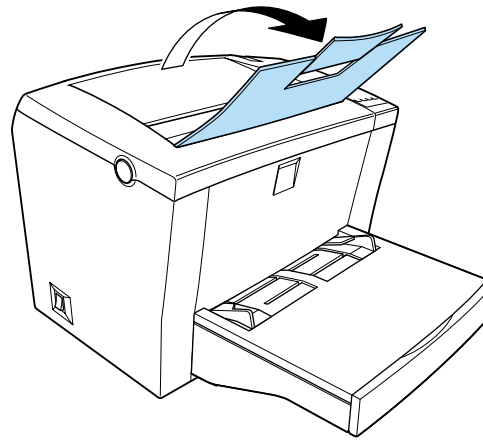
❏ *To widen the paper guides, you have to press on the lever of the right paper guide while sliding it outwards.*

❏ *Load letterheads printable side up and with the letterhead portion at the top.*

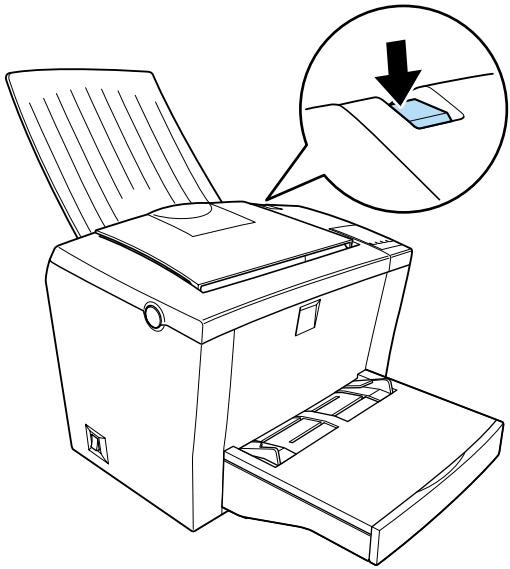
3. Place the cover back on the MP tray.



4. Raise the face-down tray and lift up the paper support on the top to prevent paper from falling off the edge.



If you installed the optional Face-up Tray and you want the sheets to come out face-up, then raise the Face-up Tray instead, and set the paper path selector down.



Note:

- ❏ *Before printing, make sure that the Paper Size setting in your printer driver matches the paper you load.*
- ❏ *If you want to print on paper heavier than 90g/m² (24 lb) or on special paper (such as envelopes, labels, or transparencies), see "Printing on special media" on page 1-12.*

Manually loading paper

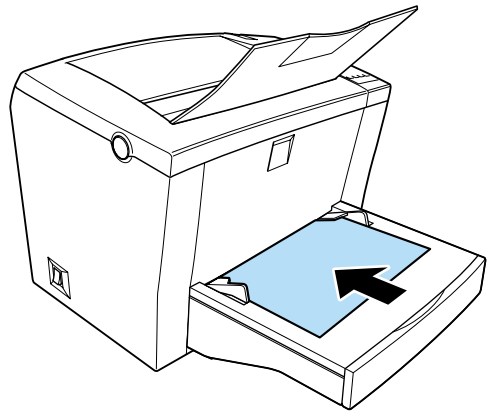
Follow these steps to load a single sheet of paper from the manual feed slot:

1. Make sure that the Manual Feed check box in your printer driver's Basic Settings tab is selected.

Note:
If you are printing from a DOS application, turn Manual Feed on in the Remote Control Panel utility instead.

2. Make sure the cover is in place on the MP tray.

3. Insert a single sheet, with the printable side up, as far as it will go into the manual feed slot above the tray cover. Adjust the paper guides to match the paper size you are using.



Note:
Load letterheads printable side up and with the letterhead portion at the top.

4. Send the print data from the computer. The Data light on the control panel starts flashing.

5. Press the Continue button. The printer loads the paper from the manual feed slot.

Note:
❏ *You have to press the* Continue *button for each sheet that you feed manually.*

❑ *When you no longer need to feed paper manually, be sure to clear the* Manual Feed *check box in the printer driver's Basic Settings tab before printing from the MP tray or the optional 500-Sheet Lower Paper Cassette Unit.*

Printing on special media

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

The EPL-5800 Laser Printer can print on special paper stock such as heavy paper, envelopes, labels, and transparencies.

Envelopes

You can load five to ten envelopes into the MP tray, depending on the envelope thickness (60 to 90 g/m²). Load envelopes with the flap side down and short edge first.

To print on envelopes, choose Thick Narrow in the printer driver's Paper setting found inside the Extended Settings dialog box. This dialog box is accessed through the printer driver's Optional Settings tab. In the Remote Control Panel utility, this option is referred to as Thick N, and is available in the Paper Type setting accessed through the Printer Setup button.

The printing quality on envelopes may be irregular because different parts of an envelope have different thicknesses. Print one or two envelopes to check the print quality. If the printing is too light, adjust the print density as described in "Adjusting print density" on page 1-15.

Do not use window envelopes unless they are specially designed for laser printers. The plastic on most window envelopes will melt when it comes into contact with the hot fuser.

Labels

You can load five to ten sheets of labels into the MP tray. However, you may need to feed some types of labels one sheet at a time.

Use only labels designed for laser printers or plain-paper copiers.

To prevent the adhesive from coming into contact with printer parts, always use labels that completely cover the backing sheet, with no gaps between the individual labels.

You should test the label sheet for leaking adhesive by pressing a sheet of paper on top of a sheet of labels. If the paper sticks, do not use the labels.

Transparencies

You can load up to five transparencies into the MP tray. However, you may need to feed some types of transparencies one sheet at a time.

You can only use overhead projector transparencies and adhesive drafting film made for use with laser printers or plain-paper copiers.

When printing on transparencies, make sure you choose Transparency in the Paper Type setting.

Optimizing Print Quality

The print quality of documents can be optimized by using EPSON's Resolution Improvement Technology (RITech), EPSON's Enhanced MicroGray technology, and by changing the print density setting in the printer driver.

Resolution Improvement Technology (RITech)

Resolution Improvement Technology (RITech) is an original EPSON printer technology that improves the appearance of printed lines, text, and graphics.

The RITech setting

The default setting for RITech is On. RITech gives the best quality text and graphics for nearly all purposes. You may not need to turn the setting off. However, if you are printing gray shading or screen patterns, change the setting to Off.

To change the RITech setting, select or clear the RITech check box in the More Settings dialog box in the printer driver's Basic Settings tab.

If the pattern still needs to be improved, you may also have to change the print density setting. See "Adjusting print density" on page 1-15 for more information.

Enhanced MicroGray

Enhanced MicroGray (Enh.MG) is a new EPSON printer technology created especially for high-quality output of photos and other images with smooth tonal changes.

Enh.MG off

Enh.MG on

To use the Enhanced MicroGray function, select the Enh.MG check box in the More Settings dialog box in the printer driver's Basic Settings tab.

Adjusting print density

Do not change the print density unless it is necessary. Changing the print density affects all text and graphics, so check the new setting by printing several pages with various kinds of text and graphics.

If your printout is too light or too dark, adjust the print density by changing the Density setting in the Extended Settings dialog box in the printer driver's Optional Settings tab.

Note:
Increasing the print density increases toner consumption. If you select darker print, you may need to replace the developer cartridge more often.

Choosing the Printer Port

You have to specify the interface you are using to print. The standard interfaces that come with your printer are parallel and USB. To specify the interface, you need to choose the appropriate printer port setting in the printer driver.

Parallel connection

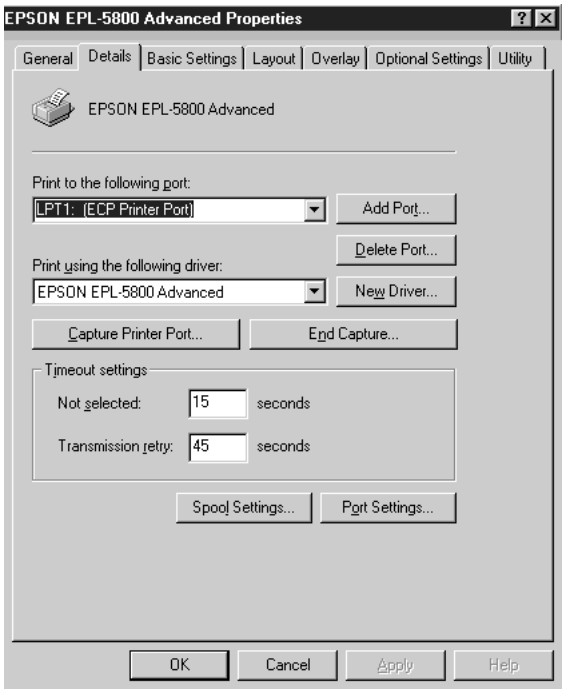
The Windows platform support the parallel interface. The instructions given below are for Windows 98, but the procedure is similar on other Windows operating systems.

1. Click the Start button, point to Settings, and then click Printers.

2. Right-click the EPSON EPL-5800 Advanced icon, and click Properties in the menu that appears.

3. Select the Details tab.

4. Click the arrow next to the Print to the following port drop-down list, then select LPT1: (ECP Printer Port).



5. Click OK to save this setting.

Using the ECP mode

To use the ECP mode with the parallel (IEEE 1284-B compliant) connector, your computer must support the ECP mode.

To use the ECP mode, follow these steps:

1. Make the ECP mode settings in the BIOS setting program that comes with your computer. (For details of the settings and the program, see your computer manual.)

2. Click the Start button, point to Settings, and then click Control Panel.

3. Right-click the System icon, and click Open in the menu that appears.

4. Select the Device Manager tab.

5. Select ECP Printer Port under Ports [COM & LPT], then click the Properties button.

6. Select the Resources tab.

7. Make the appropriate setting in the Resource settings dialog box. (This setting depends on your computer system. For details, see your computer manual.)

8. Click OK to save the settings.

USB connection

The USB interface that comes with your printer complies with Microsoft Plug and Play (PnP) USB specifications.

Note:
Only Macintosh® and PC systems equipped with a USB connector and running Mac® OS 8.1 (or later) and Windows 98 respectively support the USB interface.

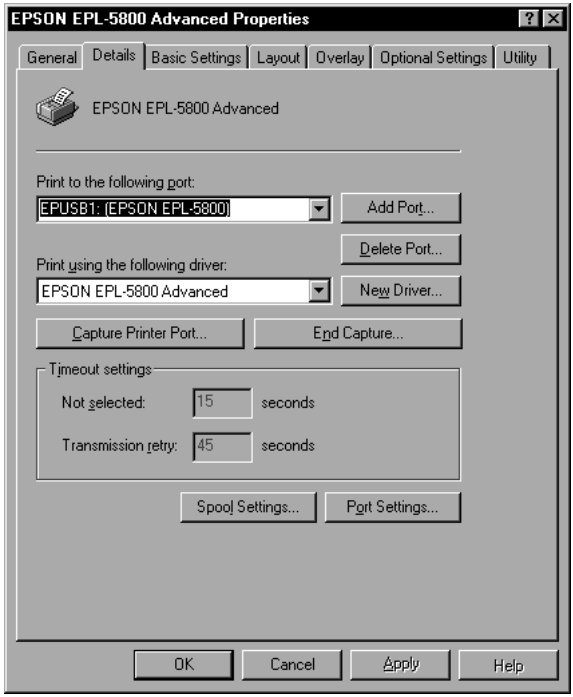
For Windows 98

1. Click the Start button, point to Settings, and then click Printers.

2. Right-click the EPSON EPL-5800 Advanced icon, and click Properties in the menu that appears.

3. Select the Details tab.

4. Click the arrow next to the Print to the following port drop-down list, then select EPUSB1: (EPSON EPL-5800).



5. Click OK to save this setting.

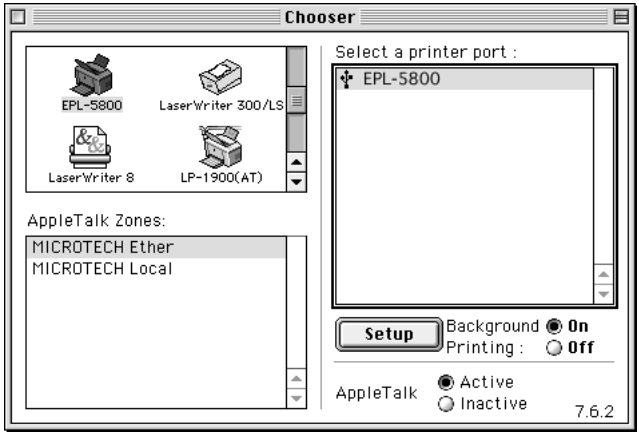
For Macintosh Users

Note:

- ❏ *The USB interface is not compatible with the Macintosh operating system's QuickDraw GX.*

- ❏ *If you are connecting the USB cable to your Macintosh through USB hubs, be sure to connect using the first hub in the chain. The USB interface may be unstable depending on the hub used. If you experience problems with this type of setup, connect the USB cable directly to your computer's USB connector.*

1. Select Chooser from the Apple menu. Click your printer's icon and then click the USB port your printer is connected to.



2. Click the Background Printing radio buttons to turn background printing on or off.

   Note:

   ❏ *Background printing must be turned on for the EPSON Status Monitor 3 to manage print jobs.*

   ❏ *When background printing is on, you can use your Macintosh while it is preparing a document for printing.*

3. Close the Chooser.

Chapter 2

Using Options

Printer Options 2-2

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Settings After Installing and Removing Options 2-32

Printer Options

You can add to your printer's capabilities by installing any of the following options:

- ❏ 500-Sheet Lower Paper Cassette Unit (C81336✻) increases paper feeding capacity.
- ❏ Face-up Tray (C81337✻) enables face-up output.
- ❏ Optional memory module expands your printer's memory.
- ❏ Adobe Postscript 3 Kit ROM module (C83239✻) generates crisp PostScript output.
- ❏ Interface cards provide your printer with serial, parallel, coaxial, twinaxial, or other connections, depending on the specific interface card installed.

Note:
The asterisk (✻) is a substitute for the last digit of the product number, which varies by country.

Each of these options is discussed in its own section.

If you purchased your printer and the options at the same time, first set up the printer and run the print test by following the instructions in the *Setup Guide*. Then install the options.

Caution:
Before installing an option, carefully read the manual that comes with the option.

500-Sheet Lower Paper Cassette Unit

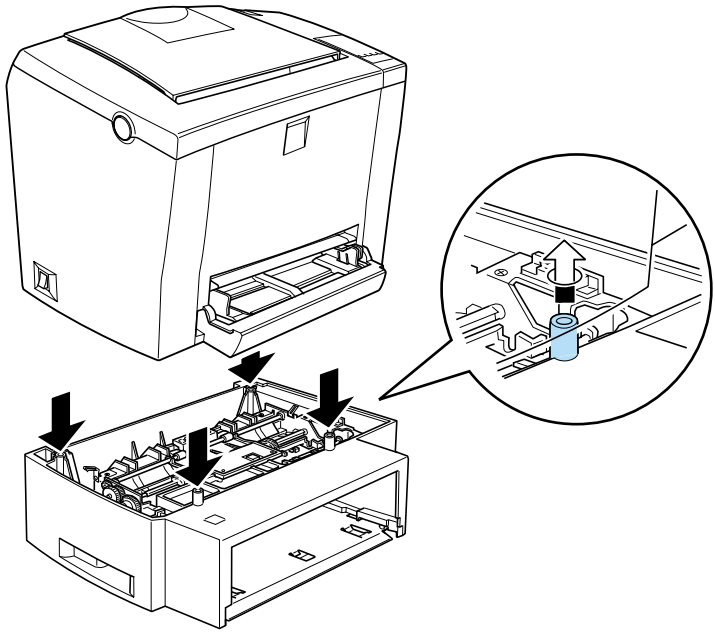
The optional 500-Sheet Lower Paper Cassette Unit gives you a second paper source in addition to the MP tray. This section describes how to install the cassette unit and load paper.

Installing

Follow the instructions below to install the 500-Sheet Lower Paper Cassette Unit:

1. Turn off the printer.
2. Unplug the printer's power cord from the electrical outlet and from the printer.
3. Remove all interface cables from the interface connectors.

4. Make sure that the printer and the cassette unit are facing the same way. Lift the printer and align the pins on the cassette unit with the holes on the bottom of the printer, then lower the printer until it rests securely on the cassette unit.



5. Reconnect any interface cables you removed.

6. Make sure that the printer's power switch is turned off before plugging the power cord into the printer and into an electrical outlet.

7. Turn on the printer.

To confirm that the 500-Sheet Lower Paper Cassette Unit is installed correctly, print a status sheet. See "Testing the Printer Connection" in the *Setup Guide*. Confirm that the 500-Sheet Lower Paper Cassette Unit is listed under the Hardware Configurations section of the status sheet as one of the available options. If it is not listed on the status sheet, try reinstalling it.

To use the 500-Sheet Lower Paper Cassette Unit as the paper source, be sure to choose Lower Cassette in the printer driver or Lower Cassette in the Remote Control Panel utility as the Paper Source setting.

If your computer is running Windows 98/95 or Windows NT 4.0, you can also confirm that the 500-Sheet Lower Paper Cassette Unit is correctly installed by checking the information displayed in the Optional Settings tab of the printer driver.

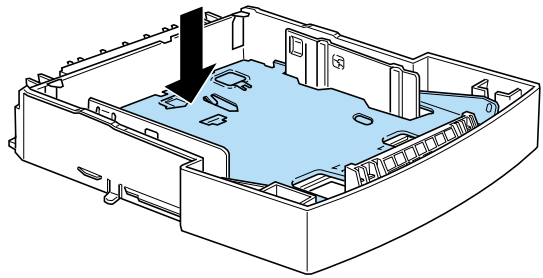
If your computer is running Windows 3.1 or Windows NT 3.51, see "Settings After Installing and Removing Options" on page 2-32 for instructions on how to update the information in the printer driver after installation or removal of the optional 500-Sheet Lower Paper Cassette Unit.

Loading paper

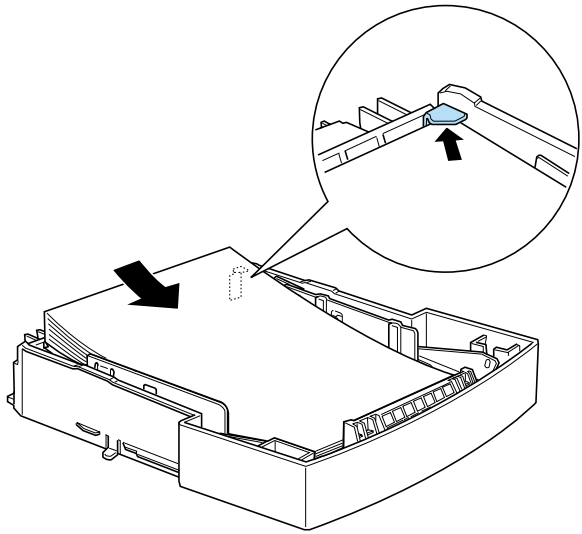
Follow the steps below to load paper into the 500-Sheet Lower Paper Cassette Unit:

1. Pull the paper-tray out from the cassette unit.

2. Press down on the plate in the paper-tray until it locks into position.

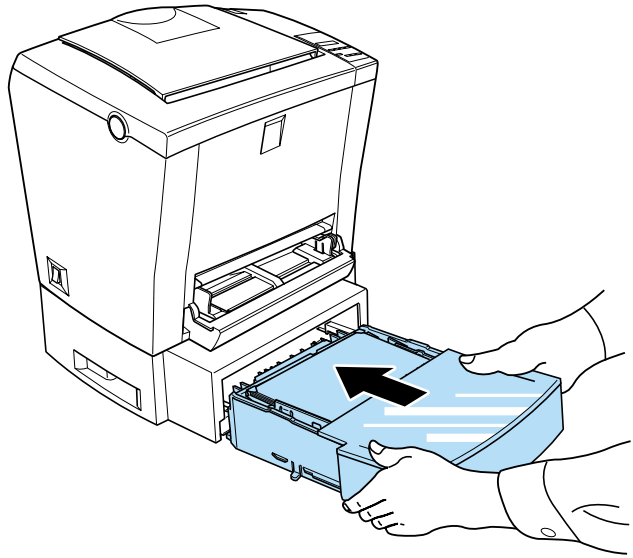


3. Fan a stack of paper and tap it on a flat surface to even the edges. Insert the paper printable-side up into the tray.



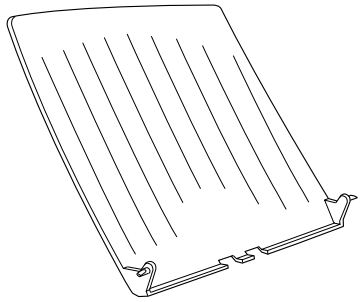
Note:
Load letterheads printable side up and with the letterhead portion at the top.

4. Insert the loaded paper-tray back into the unit.



Face-up Tray

The printer normally outputs paper face-down on top of the printer. If you want face-up output, you can install the optional Face-up Tray (C81337*). This tray gives you immediate viewing of your printed output and is recommended for printing on media that require a straight-through paper path, such as labels and transparencies.

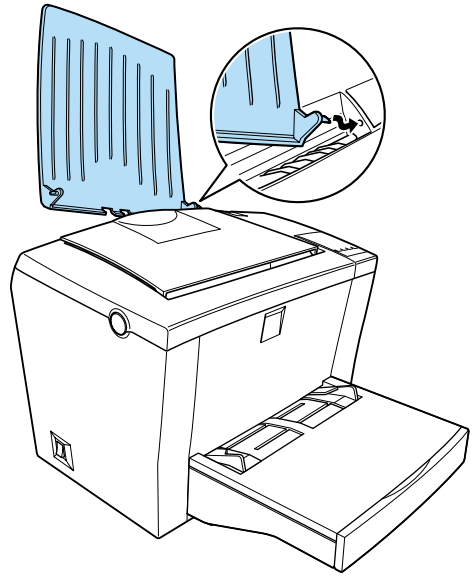


Installing

Follow the instructions below to attach the Face-up Tray to the printer:

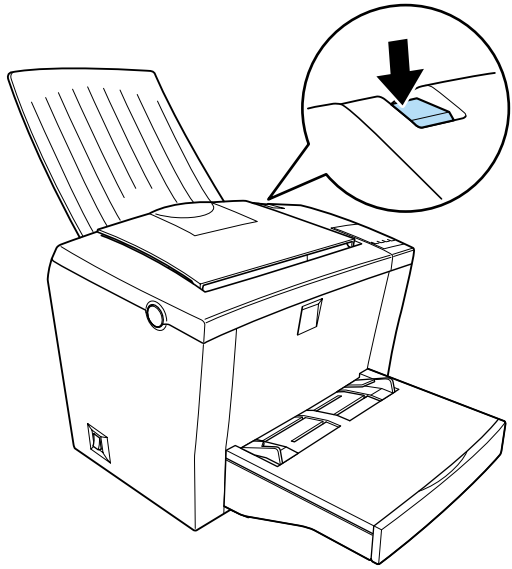
1. Turn off the printer.

2. Attach the Face-up Tray by sliding the mounting pins into the corresponding holes, one at a time. Do not force both sides in at once.



Using

The printer is factory set for face-down output. After installing the Face-up Tray, you can switch the paper path from face-down to face-up by pushing the paper path selector down. The paper path selector is located on the right side of the printer, near the back.



Memory Module

By installing a Dual In-line Memory Module (DIMM), you can increase printer memory up to 256 MB (printer standard 16 MB plus optional 32, 64, 128 or 256 MB). You may want to add additional memory if you are having difficulty printing complex graphics or if you regularly use numerous downloaded fonts.

Note:
The maximum expandable memory is 256 MB. Even with 272 (16+256) MB installed, only 256 MB are accessible.

You can purchase DIMMs from various vendors. Be sure that the DIMM you purchase meets the following requirements:

- ❏ SDRAM type
- ❏ Capacity of 32, 64, 128 or 256 MB
- ❏ 168-pin type, 64 bit, with SPD
- ❏ Access speed of 66.66 MHz or higher (15 ns or less)
- ❏ Height of less than 40 mm

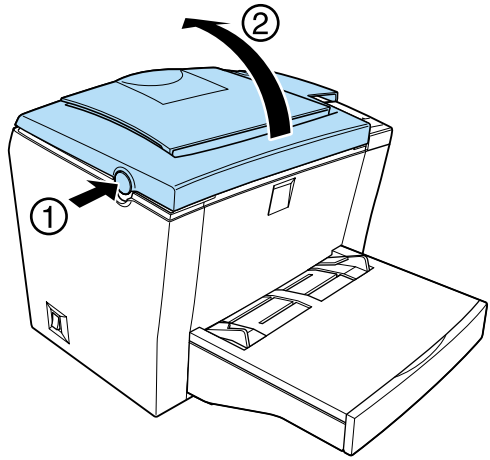
Installing

Follow the instructions below to install a DIMM into the printer:

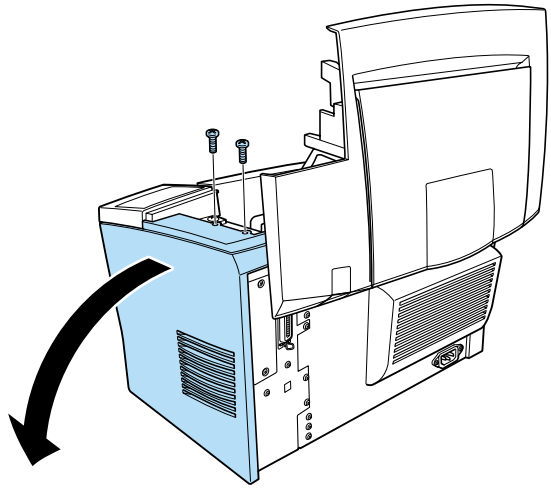
Warning:
To avoid electrical shock, do not attempt to install a DIMM unless the printer is turned off.

1. Make sure that the printer is not plugged in.

2. Press the latch on the left side of the printer, and raise the printer cover.

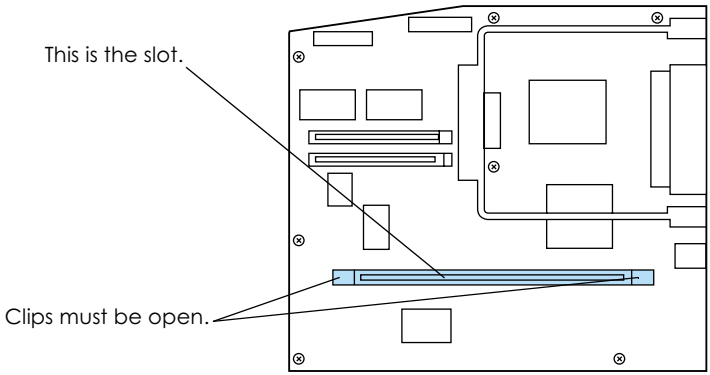


3. Face the right side of the printer, and using a crosshead screwdriver, remove the two screws holding the side cover in place. Pull the side cover off toward you.



Note:
Be careful to avoid dropping screws into the printer when removing them. It may be helpful to use a magnetic screwdriver.

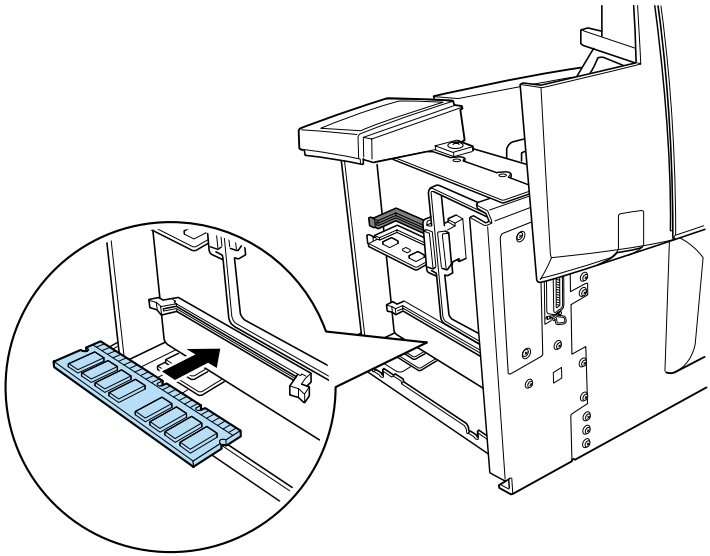
4. Identify the slot into which the DIMM is to be installed—the long slot with the two clips at the ends. Make sure that the clips are open (leaning away from the slot).



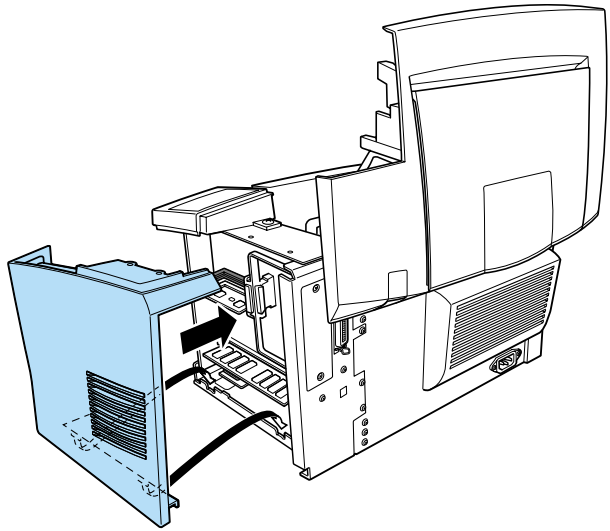
Warning:
Avoid touching the electrical components that are exposed after you remove the side cover. Be aware that these components may become hot while the printer is in use.

Caution:
Before you install the module, be sure to discharge any static electricity by touching a grounded piece of metal. Otherwise, you may damage static-sensitive components.

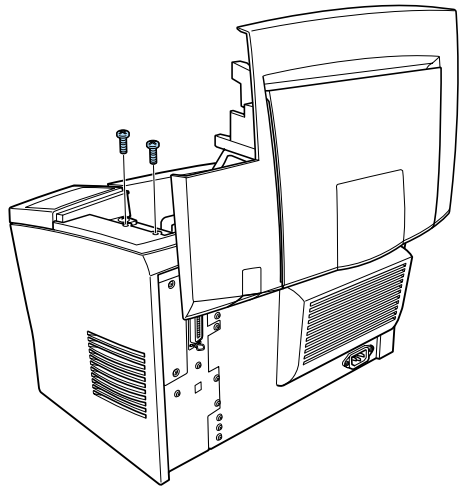
5. Insert the DIMM firmly into the slot, but without forcing it. Be sure that the ends of the DIMM engage the clips, so that the clips click closed over the ends as the DIMM snaps into place.



6. Set the side cover back into place.



7. Fasten the side cover with the two screws.



8. Gently close the printer cover.

9. Plug in the printer and turn it on.

To verify that memory is correctly installed, print a status sheet. See "Testing the Printer Connection" in the *Setup Guide*.

If an incorrect amount of memory is shown on the status sheet, turn off the printer and review the steps above to make sure you correctly installed the DIMM. If the amount of memory is still incorrect, contact your dealer or a qualified service representative for assistance.

If you installed an optional memory module of 128 MB or less, "Installed Memory" should show the total memory size (16 MB standard plus the size of the optional module). However, if you installed a 256 MB optional memory module, the status sheet would only show a size of 256 MB because that is the maximum accessible memory size.

If your computer is running Windows 98/95 or Windows NT 4.0, you can also confirm that the memory module is correctly installed by checking the information displayed in the Optional Settings tab of the printer driver.

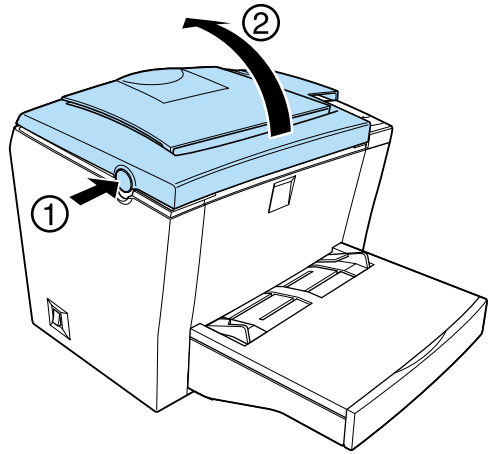
If your computer is running Windows 3.1 or Windows NT 3.51, see "Settings After Installing and Removing Options" on page 2-32 for instructions on how to update the information in the printer driver.

Removing

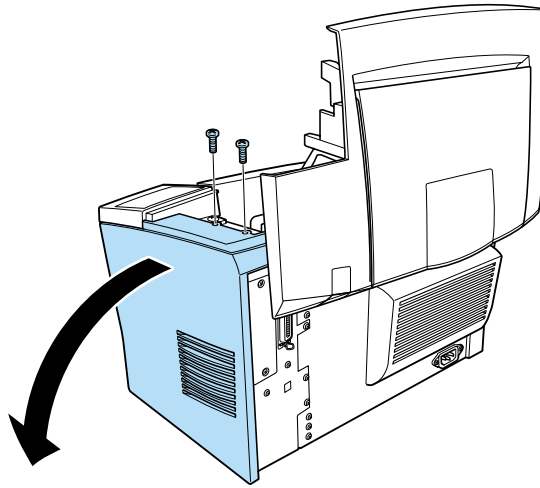
Follow the instructions below to remove the DIMM:

1. Be sure that the printer is not plugged in.

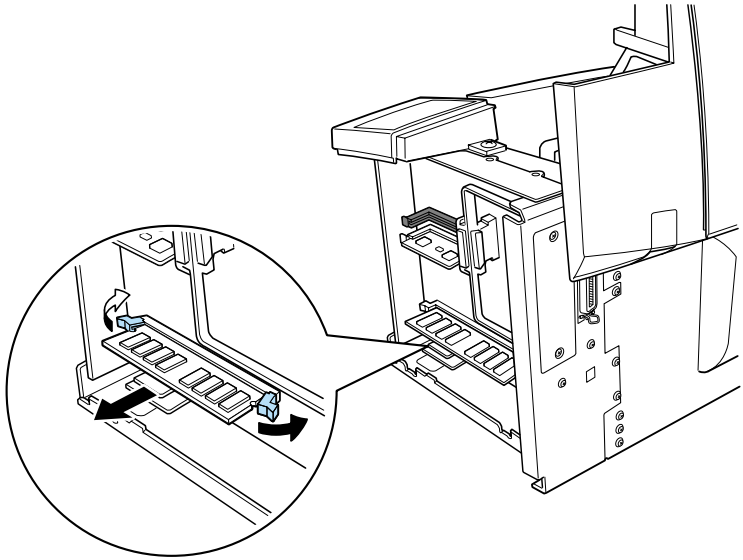
2. Press the latch on the left side of the printer, and raise the printer cover.



3. Face the right side of the printer, and using a crosshead screwdriver, remove the two screws holding the side cover in place. Pull the side cover off toward you.

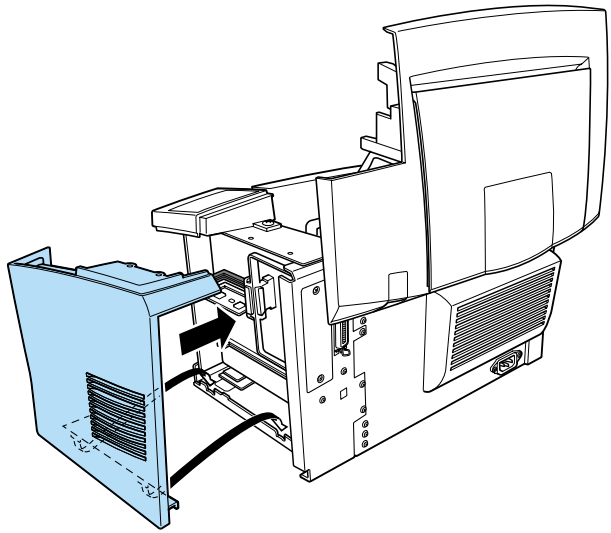


4. Push the clips on each side of the DIMM slot outward to release the memory module.

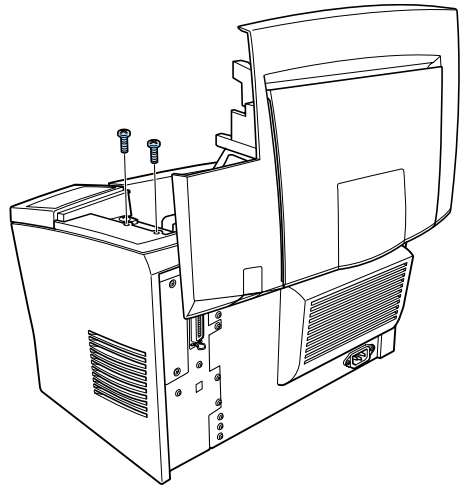


5. Grasp the DIMM firmly on both ends and pull it out.

6. Set the side cover back into place.



7. Fasten the side cover with the two screws.



8. Gently close the printer cover.

9. Plug in the printer and turn it on.

If your computer is running Windows 3.1 or Windows NT 3.51, see "Settings After Installing and Removing Options" on page 2-32 for instructions on how to update the information in the printer driver.

ROM Module

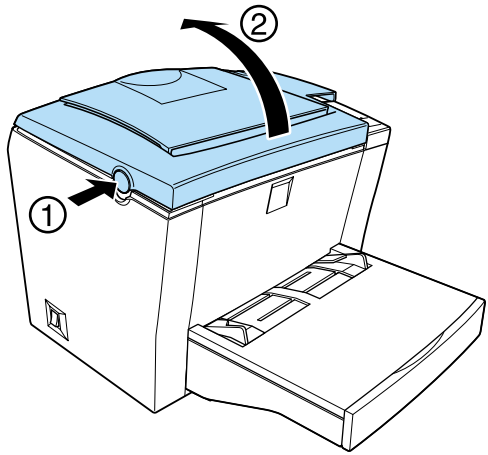
Installing the optional Adobe PostScript 3 ROM Kit module (C83239*) into the ROM slot of your printer provides for optimized printing of complex documents through the PostScript printer language.

Installing

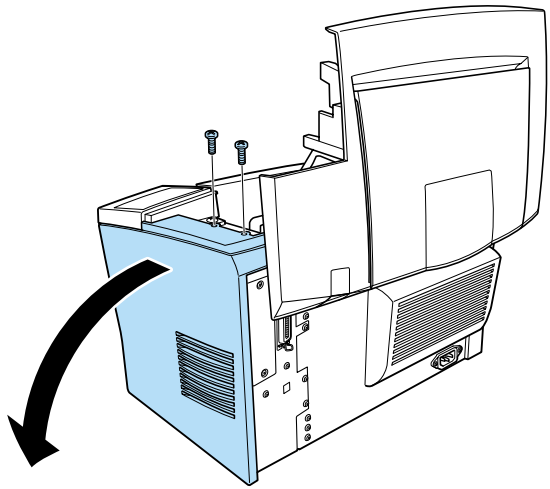
Follow the instructions below to install the ROM module:

1. Be sure that the printer is not plugged in.

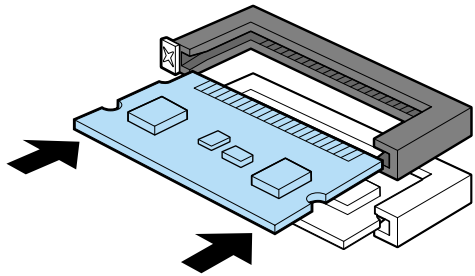
2. Press the latch on the left side of the printer, and raise the printer cover.

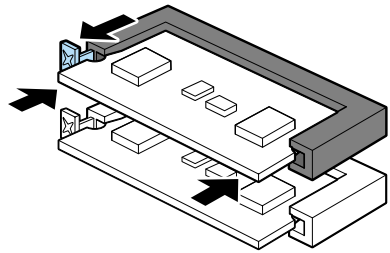


3. Face the right side of the printer, and using a crosshead screwdriver, remove the two screws holding the side cover in place. Pull the side cover off toward you.

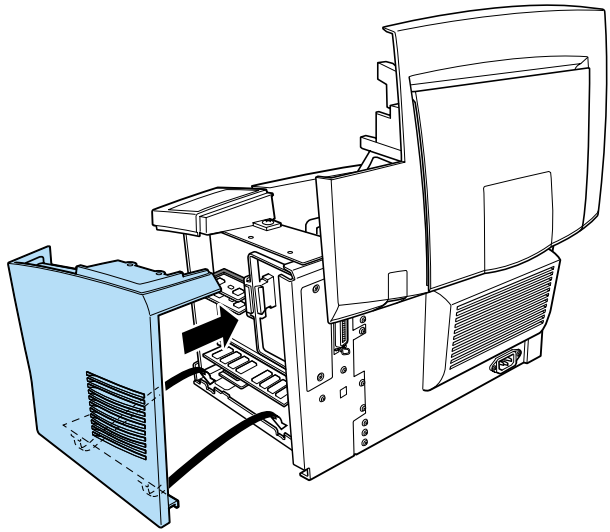


4. Identify the ROM slot. It is the black slot on the top. Push the ROM module evenly into the slot until the button comes up.

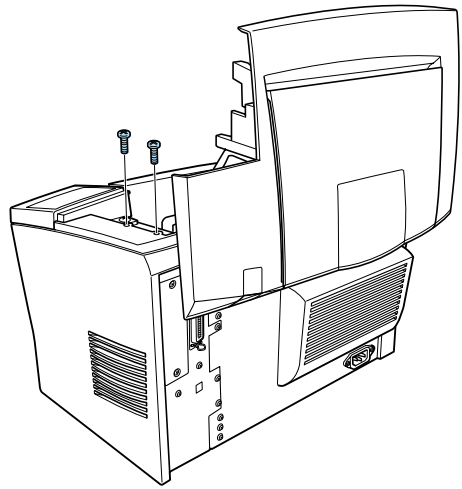




5. Set the side cover back into place.



6. Fasten the side cover with the two screws.



7. Gently close the printer cover.

8. Plug in the printer and turn it on.

To verify that the ROM module is correctly installed, print a status sheet. See "Testing the Printer Connection" in the *Setup Guide*.

If the ROM module is not listed under the Hardware Configurations section of the status sheet, turn off the printer, unplug it, disconnect all interface cables, and review the steps above to make sure you installed the module correctly. If the ROM module still does not show up in the status sheet, contact your dealer or a qualified service representative for assistance.

If your computer is running Windows 98/95 or Windows NT 4.0, you can also confirm that the ROM module is correctly installed by checking the information displayed in the Optional Settings tab of the printer driver.

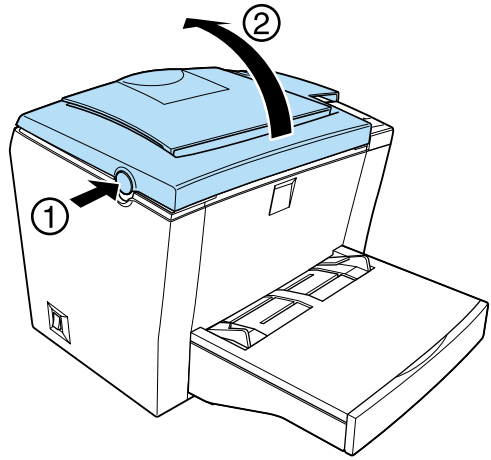
If your computer is running Windows 3.1 or Windows NT 3.51, see "Settings After Installing and Removing Options" on page 2-32 for instructions on how to update the information in the printer driver.

Removing

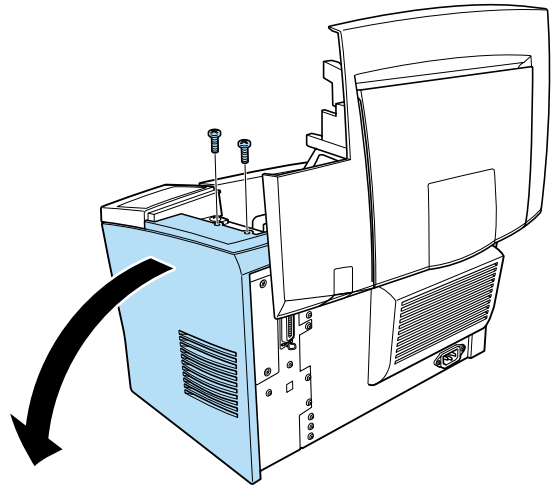
Follow the instructions below to remove the ROM module:

1. Be sure that the printer is not plugged in.

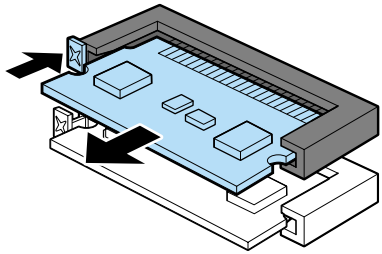
2. Press the latch on the left side of the printer, and raise the printer cover.



3. Face the right side of the printer, and using a crosshead screwdriver, remove the two screws holding the side cover in place. Pull the side cover off toward you.



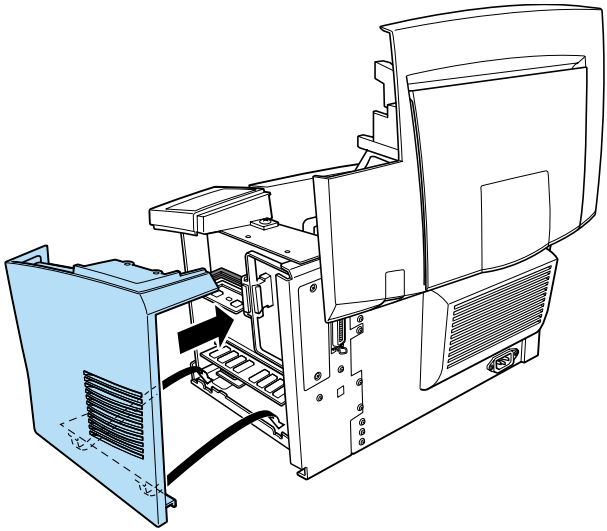
4. Push down on the button of the ROM slot until the ROM module comes up.



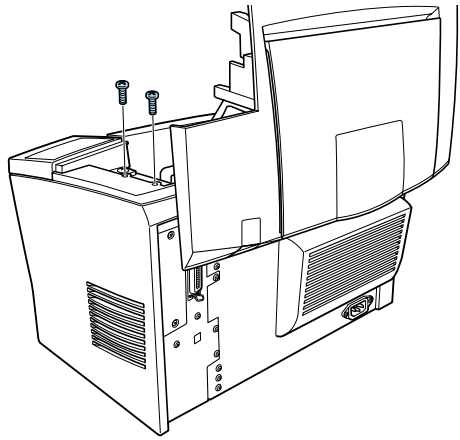
5. Lift the ROM module from the slot.

6. Carefully store the ROM module until you need to use it again.

7. Set the side cover back into place.



8. Fasten the side cover with the two screws.



9. Gently close the printer cover.

10. Plug in the printer and turn it on.

If your computer is running Windows 3.1 or Windows NT 3.51, see "Settings After Installing and Removing Options" on page 2-32 for instructions on how to update the information in the printer driver.

Interface Cards

This section describes how to install an optional interface card into the Type B interface slot.

- ❏ To add a direct connection to an Ethernet system, use an optional Ethernet Card (C82362✻/C82363✻).

- ❏ To add a serial or parallel interface to your printer, use one of the following:

32 KB Serial Interface Card	C82307✻
32 KB Parallel Interface Card	C82310✻

- ❏ To add a direct connection to an IBM mini or mainframe system, use one of the following:

Coax Interface Card	C82314✻
Twinax Interface Card	C82315✻

  The coaxial and twinaxial connectors each contain a parallel interface. Since the printer's built-in parallel interface remains active, this gives you two parallel interfaces and a coaxial or twinaxial interface. Print jobs can be sent to any connection, and the printer automatically switches between the active ports.

  The twinaxial interface is compatible with the following IBM systems: AS-400, System 36, 5251 (model 12), System 34, System 38, and 5294.

  When equipped with the EPSON Twinax Interface Card, the printer can be used in place of the following IBM system printers: 4210, 5224 (models 1 and 2), 5256 (models 1, 2, and 3), 3218 (non IPDS), 4214 (model 2), 5225 (models 1, 2, 3, and 4), and 5219 D01, D02.

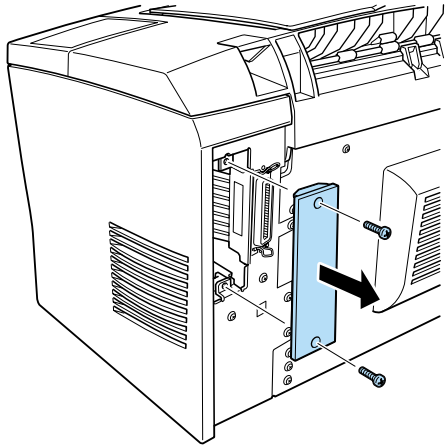
The coaxial interface allows the printer to be connected to the following IBM control units and mainframe systems: 3174, 3276, 4274, and 3270.

❏ To add a direct connection to your GPIB network, use the EPSON GPIB Interface Card (C82313*).

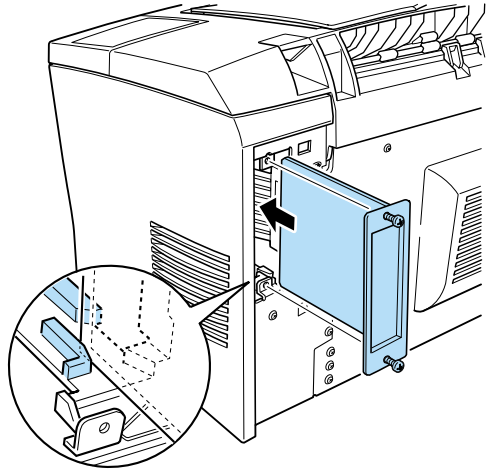
Installing

Follow the instructions below to install an optional interface card:

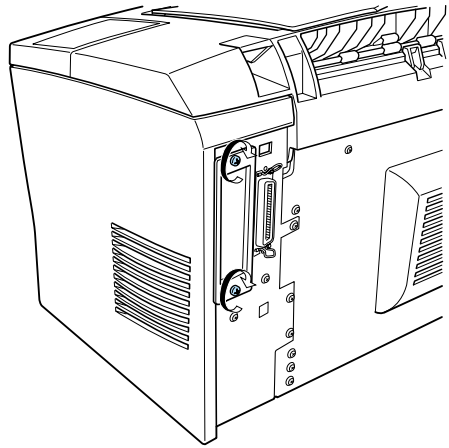
1. Turn off the printer.
2. Unplug the printer's power cord from the electrical outlet.
3. Unpack the interface card and remove all protective materials.
4. Face the rear of the printer.
5. Remove the two screws that secure the interface slot cover and remove the cover.



6. Slide the interface card into the grooves of the interface slot, as shown below. Push the card in firmly to lock it into place.



7. Secure the interface card with the two retaining screws.



8. Plug the printer's power cord back into the electrical outlet.

9. Turn on the printer.

To verify that the optional interface card is correctly installed, print a status sheet. See "Testing the Printer Connection" in the *Setup Guide*.

If the installed interface is not shown in the Hardware Configurations section of the status sheet, turn off the printer, unplug it, disconnect all interface cables, and review the steps above to make sure you installed the interface card correctly. If the installed interface still does not show up in the status sheet, contact your dealer or a qualified service representative for assistance.

Removing

Follow the instructions below to remove the optional interface card:

1. Turn off the printer.
2. Unplug the printer's power cord from the electrical outlet.
3. Face the rear of the printer.
4. Remove the two screws that secure the interface card and slide the interface card out of the slot.
5. Replace the interface slot cover and tighten it with its two retaining screws.
6. Store the interface card in a safe place until you need to use it again.
7. Plug the printer's power cord back into the electrical outlet.
8. Turn on the printer.

Settings After Installing and Removing Options

If you are running Windows 3.1 or Windows NT 3.51, the printer information displayed in the Optional Settings tab of your printer driver is not automatically updated. Follow the steps below to update the printer driver after each installation or removal of an optional paper source, memory module or ROM module:

1. Access the printer driver.
2. Click the Settings button in the Optional Settings tab.
3. In the dialog box that appears, make the appropriate settings changes for the installed or removed option.
4. Click OK to return to the Optional Settings tab.
5. Click OK to close the printer driver.

Chapter 3

EPSON Status Monitor 3 Utility

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Environment for the EPSON Status Monitor 3 3-2

Accessing the EPSON Status Monitor 3 3-4
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About the EPSON Status Monitor 3 Utility

The EPSON Status Monitor 3 is a utility program that monitors your printer and gives you information about its current status. For example, you can find out the amount of remaining toner or the remaining functional life of the photoconductor unit through this utility. If a print error occurs, the utility provides you with a message describing the error. The Status Monitor 3 utility is accessed from within the printer driver. See "Accessing the EPSON Status Monitor 3" on page 3-4 for more information.

Before using Status Monitor 3, be sure to read the printer driver's README file. This file contains the latest information on the printer driver and Status Monitor 3.

Environment for the EPSON Status Monitor 3

Protocols

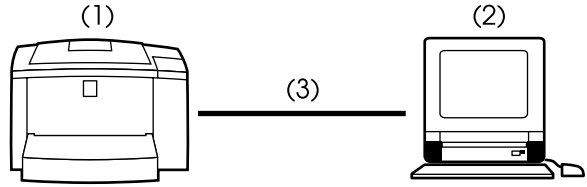
The protocols that must be installed to run EPSON Status Monitor 3 vary depending on your operating system and printer type. The following table divides printers into two categories: local printers and Windows shared printers.

Use this table to determine what protocols you need to install according to your operating system and printer type, then see the corresponding section for your operating system.

	Local Printer	**Windows Shared Printers**
Windows 98	LPT/USB	LPT/USB
Windows 95	LPT	LPT
Windows NT 4.0	LPT	LPT
Macintosh	USB	--

Local Printer

Connect the printer directly to the printer port of your computer.



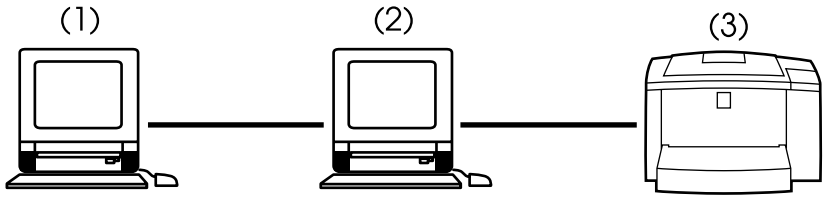
(1) local printer

(2) Windows 98/95/NT4.0/Macintosh

(3) Parallel cable/USB cable

Windows shared printer

To monitor a shared printer from the client through the server machine, you have to make a setting change on the printer driver installed on the server machine. The change involves selecting the Allow monitoring of shared printers check box in the Monitoring Preferences dialog box. You can access the Monitoring Preferences dialog box through the Utility tab of the printer driver's Properties dialog box.



(1) client machine

(2) server machine

(3) Windows shared printer

See the README file for more information about support for Windows shared printers.

Windows 98/95	Windows NT 4.0
Bi-directional support is necessary.	No special settings needed.

For Windows 98/95:
You need to enable bi-directional support in the printer's Properties dialog box. Click the Details tab and click Spool Settings. Then click the Enable bi-directional support for this printer radio button.

Accessing the EPSON Status Monitor 3

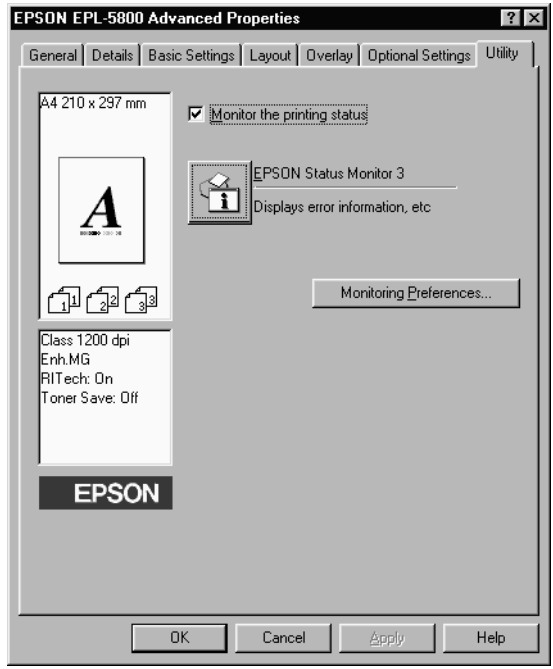
EPSON Status Monitor 3 monitors the printer during printing and while the EPSON Status Monitor 3 dialog box is open.

For Windows users

Follow these steps to access the EPSON Status Monitor 3:

1. Double-click the My Computer icon.
2. Double-click the Printers folder.
3. Right-click the icon for your printer, and click Properties. If you are using Windows NT 4.0, you can choose either Document Defaults or Properties.

4. Click the Utility tab.



5. Click the EPSON Status Monitor 3 icon to start the EPSON Status Monitor 3 utility.

Note:
Clearing the Monitor the printing status *check box during normal operation causes the Status Alert window to stop monitoring some errors. See "Status Alert Window" on page 3-11 for more information on this function.*

For Macintosh users

You can access the EPSON Status Monitor 3 utility by selecting the EPSON Status Monitor 3 alias in the Apple menu.

Note:

- ❏ *The appropriate printer port must already be selected in the Chooser so that necessary information can be received from the selected printer driver when the EPSON Status Monitor 3 starts. If the printer port is not correct, an error will occur.*
- ❏ *If you change the printer driver in the Chooser while the spool file is printing in the background, output to the printer may be disrupted.*
- ❏ *Printer and consumable products status information appears in the status window only if the Chooser is acquiring status normally.*

Getting Printer Status Details

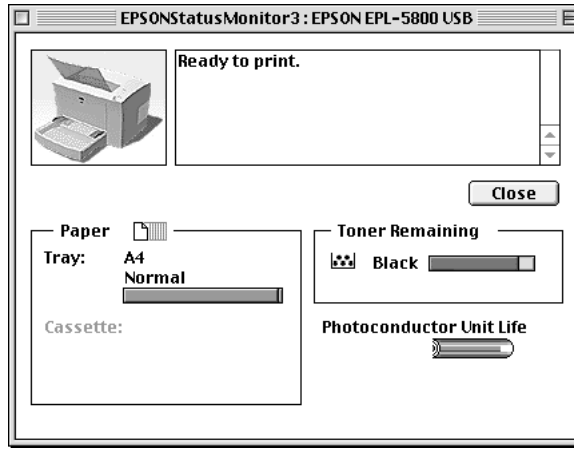
You can monitor printer status and obtain information on consumable products using the EPSON Status Monitor 3 dialog box.

For Windows Users

Printer image: The image at the upper left shows the printer status graphically.

Text box:	The text box next to the printer image displays the current status of the printer. When a problem occurs, the most probable solution is displayed.
OK button:	Clicking this button closes the dialog box.
Paper:	Displays the paper size, paper type, and the approximate amount of paper remaining in the paper source. Information for the optional 500-Sheet Lower Paper Cassette Unit is displayed only if this option is installed.
Toner:	Indicates the amount of remaining toner. The toner icon flashes if toner is low (10 percent or less).
Photoconductor Unit Life:	Indicates the remaining functional life of the photoconductor unit.

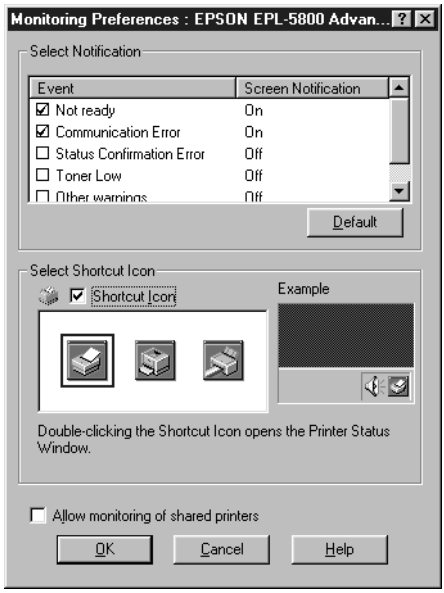
For Macintosh Users



Printer image:	The image at the upper left shows the printer status graphically.
Text box:	The text box next to the printer image displays the current status of the printer. When a problem occurs, the most probable solution is displayed.
Close button:	Clicking this button closes the dialog box.
Simple display:	Reduces the display and shows only the status details screen.
Paper:	Displays the paper size, paper type, and the approximate amount of paper remaining in each paper source. Information for the optional 500-Sheet Lower Paper Cassette Unit is displayed only if this option is installed.
Toner:	Indicates the amount of remaining toner. The toner icon flashes if toner is low (10 percent or less).
Photoconductor Unit Life:	Indicates the remaining functional life of the photoconductor unit.

Setting Monitoring Preferences (Windows only)

To make specific monitoring settings, click the Monitoring Preferences button in the Utility tab of the printer driver's Properties dialog box. The Monitoring Preferences dialog box appears.



Note:
The Monitoring Preferences dialog box is available only in Windows.

The following settings and buttons appear in the dialog box:

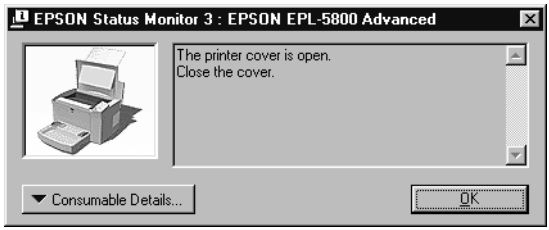
Select Notification:	Use the check boxes in this area to select the types of error that you wish to be notified about.
Default button:	Restores default settings.
Select Shortcut Icon:	To use the shortcut icon, select the Shortcut Icon check box and choose an icon. The icon you select appears on the right side of the task bar. Once the shortcut icon is in the task bar, you can double-click it to open the Status Monitor 3 dialog box. Alternatively, you can right-click the shortcut icon and select Monitoring Preferences to open the Monitoring Preferences dialog box, and EPSON EPL-5800 Advanced to open the EPSON Status Monitor 3 dialog box.
Allow monitoring of shared printers check box:	To monitor a shared printer, check this box. You need to make this setting on the server machine.
OK button:	Saves new changes.
Cancel button:	Cancels any changes.
Help button:	Opens the Help screen for the Monitoring Preferences dialog box.

Status Alert Window

This window indicates what type of error has occurred and offers you a possible solution. It closes automatically once the problem is cleared.

For Windows users

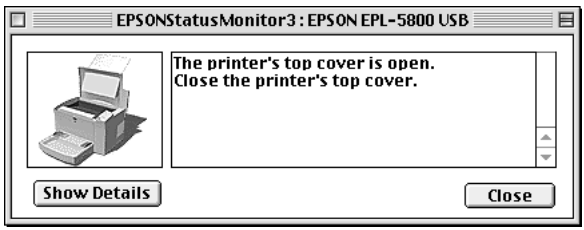
The Status Alert window opens under the conditions you select in the Monitoring Preferences dialog box.



If you wish to see information about printer consumables, click the Consumable Details button. If you click this button, the dialog box will not disappear even after the problem is cleared. To close the box you need to click the OK button.

For Macintosh users

The Status Alert window automatically appears when a problem occurs with your printer.



Stopping Monitoring (Windows only)

The EPSON Status Monitor 3 monitors the printer during printing and while the EPSON Status Monitor 3 dialog box is open.

To monitor during printing only, close the EPSON Status Monitor 3 dialog box.

To stop all monitoring completely, clear the Monitor the printing status check box in the Utility tab of the printer driver's Properties dialog box. You may want to do this to speed up printing or if you don't need to monitor the printer at all.

If you clear the Monitor the printing status check box, the Status Alert window no longer comes up to notify you when an error occurs. However, you can still find out the current printer status by clicking the EPSON Status Monitor 3 icon in the Utility tab of the printer driver's Properties dialog box.

Note:
For Windows NT 4.0, the Monitor the printing status *check box is displayed in the Utility tab of Document Defaults.*

Chapter 4

Remote Control Panel Utility (Windows)

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- When to use the Remote Control Panel utility 4-2
- Operating environment 4-3
- Installing the Remote Control Panel utility 4-3
- Accessing the Remote Control Panel utility 4-4

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- Emulation button 4-20

Other Special Settings 4-21
- Type button 4-21
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Printing Font Samples 4-30

Remote Control Panel Utility Overview

The Remote Control Panel utility runs under the DOS operating system only. Windows users must install and use the utility through the MS-DOS prompt. This section gives you an overall introduction to the functions of the utility and provides you with instructions on its installation and execution.

When to use the Remote Control Panel utility

Note:
Before using this utility, be sure to read the README file located in the RCP_UK or RCP_US folder in the printer software CD-ROM. (The folder name depends on the country of purchase.) This file contains important information about the utility.

The Remote Control Panel utility is the software interface that allows you to choose the printer emulation mode and make settings you cannot usually make in the printer driver. In addition, this utility also allows you to make basic printer settings such as the number of copies, paper size, and paper type.

You do not generally need to use the Remote Control Panel utility to change basic printer settings. Most application programs let you change settings that affect the final printed output, and any settings you make from your software override those made from the Remote Control Panel utility. However, if you are not able to change printer settings from your application program or if you are running DOS, the Remote Control Panel utility will give you access to such settings.

Operating environment

Operating system:	MS-DOS Version 3.3x or better. The mouse can be used, provided that the mouse driver is installed. (Microsoft Mouse v.7.04 or better, or Logitech v.6.43 or better.)
Memory:	360 KB minimum, although the actual requirement varies depending on the version of the operating system.
Interface:	Parallel. The utility works in both bi-directional and unidirectional parallel interface modes. In unidirectional mode, the computer can transmit settings to the printer but cannot retrieve settings data from the printer.

Installing the Remote Control Panel utility

To install the utility, follow these steps:

1. Insert the printer software CD-ROM containing the utility into your computer's CD-ROM drive.

2. Type the following at the DOS prompt and press Enter.

   D:\RCP_UK\SETUP

   Note:
   You might have to type D:\RCP_US\SETUP*, depending on your country of purchase.*

3. Follow the instructions on the screen to install the utility.

Accessing the Remote Control Panel utility

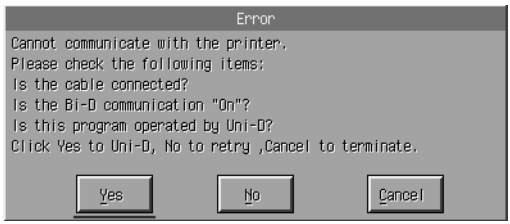
Before you launch the Remote Control Panel utility, remember that you can use the following keys on your keyboard for navigation within the utility:

TAB:	Advances to the next menu
Shift+TAB:	Moves to the previous menu
Arrow keys:	Moves to options within menus
ENTER:	Registers the selection (executes the operation)

To start the Remote Control Panel utility, type the following at the DOS prompt and press Enter. (If you changed the default directory during installation, type that directory instead.)

```
C:\EPSONRCP\EPRCP
```

If the Remote Control Panel utility was not able to communicate with the printer in bi-directional mode, it returns the following error dialog box. If bi-directional communication is possible, skip this section and go directly to “Mode-Select dialog box” on page 4-6.



The following buttons appear in the Error dialog box:

Yes button:	Clicking this button will allow you to proceed through unidirectional communication.
No button:	Clicking this button will make the utility retry bi-directional communication.
Cancel button:	Clicking this button terminates the utility.

If you click Yes, the Printer-Select dialog box will appear.

Printer-Select dialog box

The following setting and buttons appear in the dialog box:

Select Printer combo box:	Allows you to select your printer from the list.
OK button:	Clicking this button brings you to the Mode-Select dialog box.

Exit button: Clicking this button terminates the utility.

Help button: Clicking this button opens the Help screen.

Select your printer and click OK. The Mode-Select dialog box appears.

Mode-Select dialog box

The following setting and buttons appear in the dialog box:

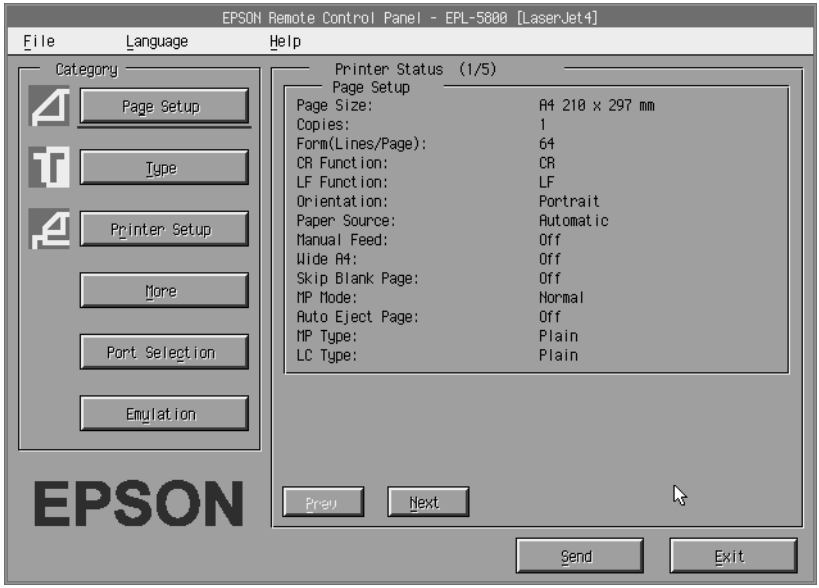
Select Mode list box: Allows you to select the desired printer emulation mode from the list.

OK button: Clicking this button brings you to the main Remote Control Panel screen.

Exit button: Clicking this button terminates the utility.

Help button: Clicking this button opens the Help screen.

Select the emulation mode you want to configure and click OK. The main Remote Control Panel screen that appears varies slightly, depending on the emulation mode you select. The example below is that for the LaserJet4 emulation mode.



Making Basic Printer Settings

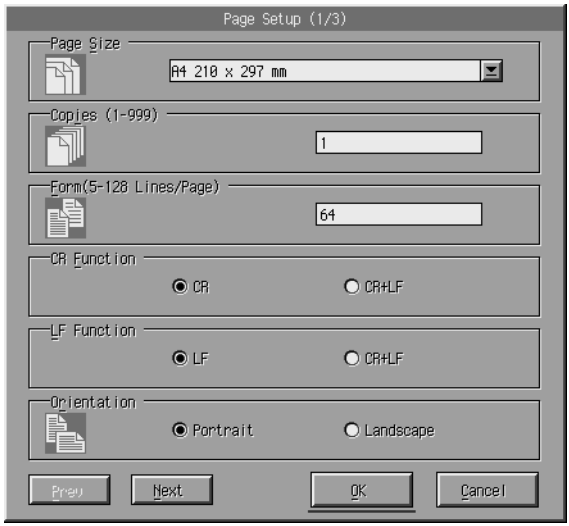
The settings presented in this section are also available in the printer driver. Most application programs give you access to the printer driver from within the application itself. You should always try to change basic printer settings from within the application program or by accessing the printer driver directly from the operating system.

Settings made in the application program or in the printer driver override those settings made in the Remote Control Panel utility. However, if you are unable to access the printer driver, or if you are running DOS, then make these settings through this utility.

Note:
Settings made in the Remote Control Panel utility are not effective until you click the Send *button to download the information to the printer. If you share this printer, the settings shown on your Remote Control Panel utility may not reflect the actual settings in the printer as they may have been changed by other users. Even if the Remote Control Panel Utility already shows your desired setting, always click* Send *to ensure that you can print with that setting.*

Page Setup button

Clicking the Page Setup button on the Remote Control Panel screen opens the following dialog box:



Note:
Use the Next *and* Prev *buttons to access all available setting options.*

Page Size

You can set the default paper size here. You should change this item at the Remote Control Panel utility only if you cannot change the paper size from your application program.

If your desired paper size is not listed below, you can define a new size using the Custom setting. You should define a custom page size within the following dimensions: 92 to 216 mm × 148 to 356 mm.

The Page Size options are as follows:

A4 (default)
A5
B5
LT (Letter)
HLT (Half letter)
LGL (Legal)
GLT (Government letter)
GLG (Government legal)
EXE (Executive)
F4
MON (Monarch)
C10 (Commercial 10)
DL
C5
C6
IB5 (International B5)
CTM (Custom)

Copies

Allows you to set the number of copies to be printed. You can enter any number from 1 to 999. If possible, you should specify the number of copies from your application program. This setting affects the setting under other emulation modes as well.

Form (LaserJet4 only)

Lets you specify the number of horizontal lines on a page. You can enter any number from 5 to 128. This setting is available only in the LaserJet4 mode.

CR Function (LaserJet4 only)

Determines whether only a carriage return (CR) or a carriage return and a line feed (LF) procedure should be carried out. When CR (default) is selected, the printer does not perform a line feed command with each carriage return. CR+LF causes the printer to add a line feed to each carriage return command it receives. Select CR+LF if you find that lines of text are overlapping in your document.

LF Function (LaserJet4 only)

Determines whether only a line feed (LF) or a line feed and a carriage return (CR) procedure should be carried out. When LF (default) is selected, the printer does not perform a carriage return with each line feed or form feed (FF). CR+LF causes the printer to add a carriage return to each line feed or form feed command it receives. Select CR+LF if you find that the printer does not print characters beyond the right margin.

Orientation

Lets you specify whether the page is printed in Portrait (default) or Landscape orientation.The pages in this manual are in portrait orientation.

Paper Source

Allows you to select the method and source of paper supply from among the following settings: Auto Selection (paper is fed from whichever tray has the correct paper size), MP Tray (MP tray), Lower Cassette (500-Sheet Lower Paper Cassette Unit, if installed). The default is Auto Selection.

Manual Feed

On selects manual feed mode for the MP tray. The default setting is Off. For details, see "Manually loading paper" on page 1-10.

Wide A4 (LaserJet4 only)

Allows you to use A4 Wide paper size in the MP tray.

MP Mode

Determines the priority order of paper sources to use when the Paper Source setting is set to Auto, or when the paper source is not specified. The available choices are Normal (default) and Last. Normal gives priority to the MP tray while Last sets the optional 500-Sheet Lower Paper Cassette Unit as the priority paper source.

Auto Eject Page

Sets whether or not paper is output when a timeout is reached, according to the Timeout setting. The default setting is Off so paper is not printed when a timeout is reached. This item is not available in the PCL6 mode.

Skip Blank Page

When turned on, the printer skips pages that have no images or characters, allowing you to save paper. The default setting is Off.

MP Type

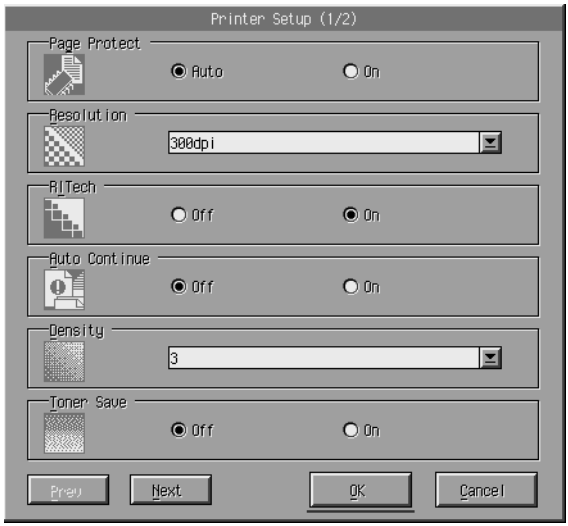
Allows you to specify the type of paper used when printing from the MP tray. The available options are Plain (default), Preprinted, Letterhead, Recycled, Color, Transparency, and Labels.

LC Type

Allows you to specify the type of paper used when printing from the optional 500-Sheet Lower Paper Cassette Unit. The available options are Plain (default), Preprinted, Letterhead, Recycled, and Color.

Printer Setup button

Clicking the Printer Setup button on the Remote Control Panel screen opens the following dialog box:



Note:
Use the Next *and* Prev *buttons to access all available setting options.*

Page Protect

Page Protect is a function that allows you to allocate additional printer memory for printing data. You may need to use Page Protect if you are printing a highly complex page. If a Print Overrun error occurs, change the setting to On and reprint your data. This reduces the amount of memory reserved for receiving data so your computer may take longer to send the print job, but it will allow you to print complex jobs. Page Protect usually works best if set to Auto (default). You may need to increase your printer's memory if memory errors continue to occur.

Note:
Changing the Page Protect setting reconfigures the printer's memory, which causes any downloaded fonts to be erased.

Resolution

Allows you to select the resolution you want to use for printing. The available settings are 1200dpi, 600dpi (default), and 300dpi.

RITech

Allows you to turn the RITech (Resolution Improvement Technology) setting on or off. The default setting is On. For more information about RITech, see "Optimizing Print Quality" on page 1-13.

Auto Continue

Permits the printer to automatically recover from a Print Overrun, Insufficient Memory for Current Task, or Change Paper error. The printer continues printing within a few seconds after one of these problems occurs.

When Auto Continue is off, you must press the Continue button to resume printing. In most cases, leave Auto Continue off (default) so you can tell when an error occurs and make the necessary corrections. You might want to set Auto Continue to On when printing long jobs or when you are away from the printer for long periods.

Density

Allows you to adjust the print density to make the printout darker or lighter. Click the arrow key to darken or lighten the output.

Toner Save

You can turn the Toner Save mode on or off (default). When turned on, the printer saves toner by substituting a gray shade for the black inside of characters. The characters are outlined in full black on the right and lower edges.

Toner Out

Allows you to set whether the printer should continue or stop printing when the printer encounters a Toner Out error. If set to Continue (default), the printer continues printing regardless of the error. This setting is recommended if you are physically distant from the printer. If set to Stop, the printer stops printing when it encounters the Toner Out error.

Image Optimum (LaserJet4 only)

Allows you to print complex graphics even when print data reaches the memory limit. When set to On, the amount of graphics data is automatically reduced, allowing complex documents to be printed. However, the quality of the graphics is reduced.

Tray Assign

Changes the assignment for the paper source select command. When 4 is selected the commands are set as compatible with the HP LaserJet 4. When 4K is selected the commands are set as compatible with the HP LaserJet 4000, 5000, and 8000. When 5S is selected the commands are set as compatible with the HP LaserJet 5S.

MP Tray Size

Allows you to set the paper size for the MP tray. The options are the same as those under Page Size. This setting affects the setting under other emulation modes as well.

Paper Type

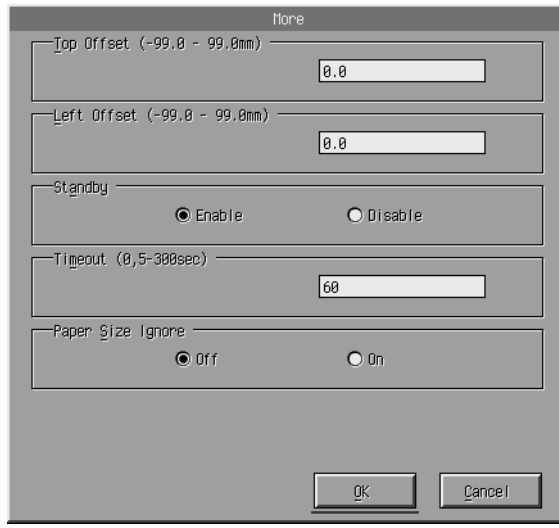
Allows you to specify the type of paper to improve print quality. Thick W is for paper with a width of less than 132 mm. Think N is for thick and narrow paper like envelopes. Transparency is for transparencies. Always use Normal (default) unless print quality problems occur.

Dot Correction

This setting is relevant to 1200-dpi printing only. When set to On, the printing pattern of 1-dot lines is automatically corrected to improve appearance.

More button

Clicking the More button on the Remote Control Panel screen opens the following dialog box:



Top Offset

Allows you to adjust the vertical printing position on the page. The setting is in millimeters. You can move the printing position by 0.5 mm increments from the top edge (the parameters are from -99 to 99).

Left Offset

Allows you to adjust the horizontal printing position on the page. The setting is in millimeters. You can move the printing position in 0.5 mm increments from the left edge (the parameters are from -99 to 99).

Standby

Allows you to set the Standby mode to Enable (default) or Disable. When Standby is enabled, the printer goes into sleep mode if it is not used for 30 minutes. The printer begins warming up as soon as you send data, and is ready to print in about 22 seconds. When Standby is disabled, the printer stays warmed up and ready to print all the time.

Timeout

Allows you to set the length of time the printer waits before looking for the next print job. If the printer is online and receives no new data for the number of seconds specified, the printer automatically switches to the next channel that receives data. You can set the timeout value in 1-second increments (the parameters are from 5 to 300).

Paper Size Ignore

Allows you to select whether a paper size error is ignored when it occurs. Turning this item on causes the printer to print even if the image size exceeds the printable area for the specified paper size. This may cause smudges, due to toner that is not transferred onto the paper properly. When this item is off (default), the printer stops printing if a paper size error occurs.

Country (ESCP2, FX only)

Allows you to select the international character set.

CG Table (ESCP2, FX only)

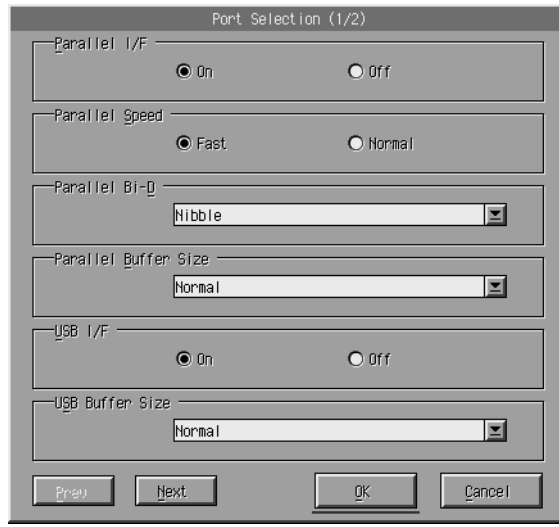
Allows you to select the character table. Character tables contain the characters and symbols used in different languages. The printer prints text based on the selected character table.

Code Page (I239X only)

Allows you to select the character table. Character tables contain the characters and symbols used in different languages. The printer prints text based on the selected character table.

Port Selection button

Clicking the Port Selection button on the Remote Control Panel screen opens the following dialog box:



Note:
Use the Next *and* Prev *buttons to access all available setting options.*

Parallel I/F

Allows you to choose whether to activate the parallel port. The default is On.

Parallel Speed

Allows you to specify the pulse width of the ACKNLG signal on receiving data through the parallel port. When this option is set to Fast (default), the pulse width is about 1NS. When this option is set to Normal, the pulse width is about 10NS.

Parallel Bi-D

Allows you to specify the bi-directional communication mode: Nibble (default), ECP, or Off.

Parallel Buffer Size

Allows you to specify the amount of memory to be used for receiving and printing data through the parallel interface. If set to Maximum, more memory is allocated for receiving data. If set to Minimum, more memory is allocated for printing data. The factory default setting is Normal.

USB I/F

Allows you to choose whether to activate the USB port. The default is On.

USB Buffer Size

Allows you to specify the amount of memory to be used for receiving and printing data through the USB interface. If set to Maximum, more memory is allocated for receiving data. If set to Minimum, more memory is allocated for printing data. The default setting is Normal.

AUX I/F

Allows you to choose whether to activate the auxiliary interface port (if an optional interface card is installed). The default is On.

AUX Buffer Size

Allows you to specify the amount of memory to be used for receiving data and printing data through the optional interface card. If set to Maximum, more memory is allocated for receiving data. If set to Minimum, more memory is allocated for printing data. The default setting is Normal.

Choosing Printer Emulation

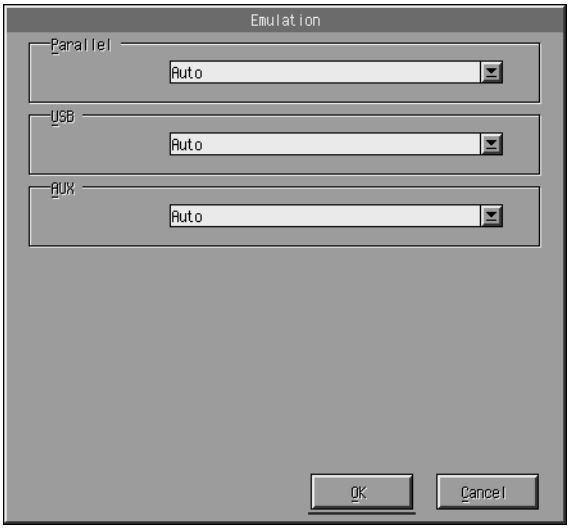
You have to change the printer emulation mode through the Remote Control Panel utility because the printer driver does not give you access to this setting.

The standard supported emulation modes are: LJ4 (PCL5e), PCL6, GL2, FX, ESCP2, and I239X. PS3 is also available if you install the optional Adobe PostScript 3 Kit ROM module. You can specify a different emulation for each interface; in other words, for each computer you connect the printer to.

Note:
Settings made in the Remote Control Panel utility are not effective until you click the Send *button to download the information to the printer. If you share this printer, the settings shown on your Remote Control Panel utility may not reflect the actual settings in the printer as they may have been changed by other users. Even if the Remote Control Panel Utility already shows your desired setting, always click* Send *to ensure that you can print with that setting.*

Emulation button

Clicking the Emulation button on the Remote Control Panel screen opens the following dialog box:



Parallel

Allows you to specify the emulation for the parallel interface.

USB

Allows you to specify the emulation for the USB interface.

AUX

Allows you to specify the emulation for the auxiliary interface. This option is available only when an optional Type B interface card is installed.

Other Special Settings

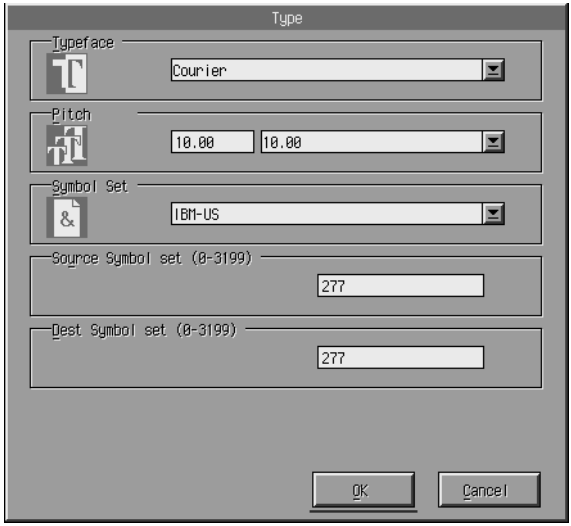
The settings in this section are the less common settings that you would make when using this printer. However, if you wish to make the changes described below, you have to make them through the Remote Control Panel utility as the printer driver does not give you access to them.

Note:
Settings made in the Remote Control Panel utility are not effective until you click the Send *button to download the information to the printer. If you share this printer, the settings shown on your Remote Control Panel utility may not reflect the actual settings in the printer as they may have been changed by other users. Even if the Remote Control Panel Utility already shows your desired setting, always click* Send *to ensure that you can print with that setting.*

Type button

Clicking the Type button on the Remote Control Panel screen opens the following dialog box:

Note:
The Type *button and dialog box are available in LaserJet4 mode only.*



Typeface

Allows you to specify the typeface by font.

Pitch

Allows you to specify the pitch for fixed pitch fonts. The range of pitch is 0.44 to 99.99.

Symbol Set

Allows you to choose which symbol set to use. If the typeface you selected is not available for the symbol set you select, the typeface is replaced with the currently selected symbol set. The following symbol sets are available:

Roman-8	Norweg1	Italian	ECM94-1
Swedis2	ANSI ASCII	UK	French2
German	Legal	8859-2 ISO	Spanish
PsMath	8859-9 ISO	WiTurkish	MsPublishing
VeMath	DeskTop	Math-8	WiE.Europe
PcTk437	Windows	PsText	IBM-US
IBM-DN	VeInternational	PcMultilingual	PiFont
VeUS	Other	PcE.Europe	WiAnsi

Note:

- ❏ *The following symbol sets cannot be selected with the Swiss 721 SWM and Dutch 801 SWM fonts: PsMath, MsPublishing, VeMath, Math-8, and PiFont.*
- ❏ *The characters 9Bh to 9Fh in the VeInternational and VeUS symbol sets cannot be printed when either the Swiss 721 SWM or Dutch 801 SWM font is selected.*

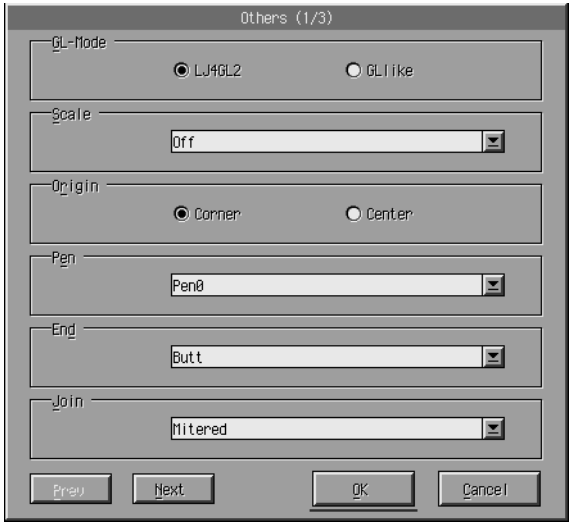
Others button

Clicking the Others button brings up the Others dialog box. The actual dialog box that appears depends on the emulation mode.

Note:
This button is not available in LaserJet4 mode.

GL2 mode

The following dialog box appears when the emulation mode is GL2:



Note:
Use the Next *and* Prev *buttons to access all available setting options.*

GL-Mode

Allows you to select the mode, LJ4GL2 or GLlike. The default setting is LJ4GL2.

Scale

Allows you to switch between original-size or reduced-size printing. This setting also determines the reduction scale for reduced printing. You can print data originally created for the paper size selected in the Scale setting onto paper of the size selected in the Page Size setting. For example, you can scale an A3 size page to an A4 size page.

Origin

Allows you to set the origin for the plotter-unit coordinate system to the lower left corner (Corner) or to the center of the hard-clip limit (Center).

Pen

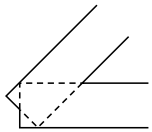
Allows you to select the color of the printed characters. Pen0 is white, which means the background is printed instead of the character, like the caution and warning symbols in this manual. All others are black, like the characters in this sentence. (Pens 2-6 are different colors for color printers, and available only in GLlike mode.)

End

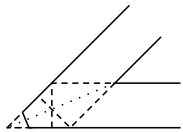
Allows you to choose the type of line ending. The default setting is Butt. See the illustrations below.

Join

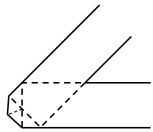
Allows you to define how the ends of lines should be joined. The default setting is Mitered. See the illustrations below.



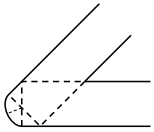
NONE



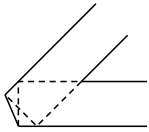
MITERED
MITEREDBEVELED



TRIANGULAR



ROUND



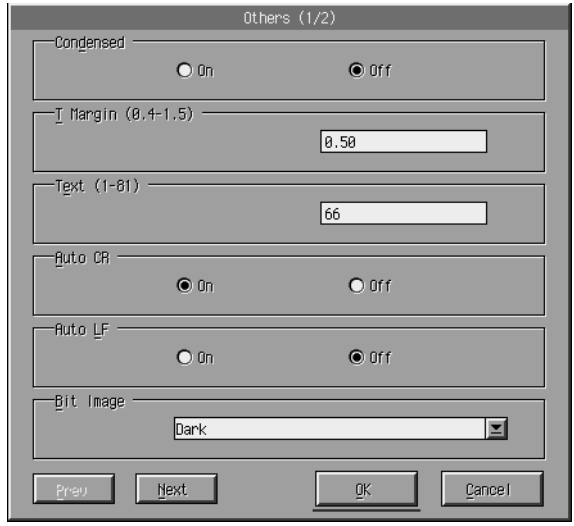
BEVELED

Pen0, Pen1, Pen2, Pen3, Pen4, Pen5, Pen6

Allows you to select the line width. You can select a value from 0.05 mm to 5.00 mm, in increments of 0.05 mm. Pen 3-6 are available only in GLlike mode.

ESCP2, FX, and I239X modes

The following dialog box appears when the emulation mode is ESCP2, FX, or I239X:



Note:
Use the Next *and* Prev *buttons to access all available setting options.*

Condensed (ESCP2, FX only)

Allows you to change character spacing. Condensed printing is useful for spreadsheets and other applications that need to fit a large amount of information on each line. However, 15-cpi (characters per inch) characters cannot be condensed.

T.Margin (ESCP2, FX only)

Allows you to specify the distance from the top of the sheet to the baseline of the first printable line. This is measured in 0.05 inch increments.

Text (ESCP2, FX only)

Allows you to set the page length in lines. The unit of measure for this option is a 1/6 inch line.

Note:
If you change the Orientation, Page Size, or T.Margin settings, the page length setting automatically returns to the default setting for each paper size.

Auto CR

Allows you to use the automatic carriage return option to perform a carriage-return line-feed (CR-LF) operation whenever the print position exceeds the right margin. If Auto CR is off, the printer does not print characters beyond the right margin, and it does not perform a linewrap until it receives a CR. Most application programs take care of this function.

Auto LF

Allows you to specify the line feed setting. If you set AutoLF to Off, the printer does not send an automatic line feed (LF) command with each carriage return (CR). When you set AutoLF to On, the printer adds a line feed to each carriage return it receives. If your text lines overprint each other, set AutoLF to On.

Bit Image

With Bit Image set to Dark or Light, your printer can correctly emulate the graphics densities set with the printer commands. If you select Dark, the bit image density is high. If you select Light, the bit image density is low.

With Bit Image set to BarCode, your printer converts bit images to barcodes by automatically filling in any vertical gaps between dots. This produces unbroken vertical lines that can be read by a barcode reader. BarCode is not available in I239X mode.

This mode reduces the size of the image being printed and may cause some distortion when printing bit-image graphics.

ZeroChar

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

Font

Allows you to select a font by typeface. The factory default font is Courier. After selecting the desired font, you can also adjust the character spacing and size of the font with the Pitch and Condensed options.

Pitch

You can select a character pitch of 10, 12, or 15 cpi (characters per inch), or choose proportional spacing.

Alt.Graphics (I239X only)

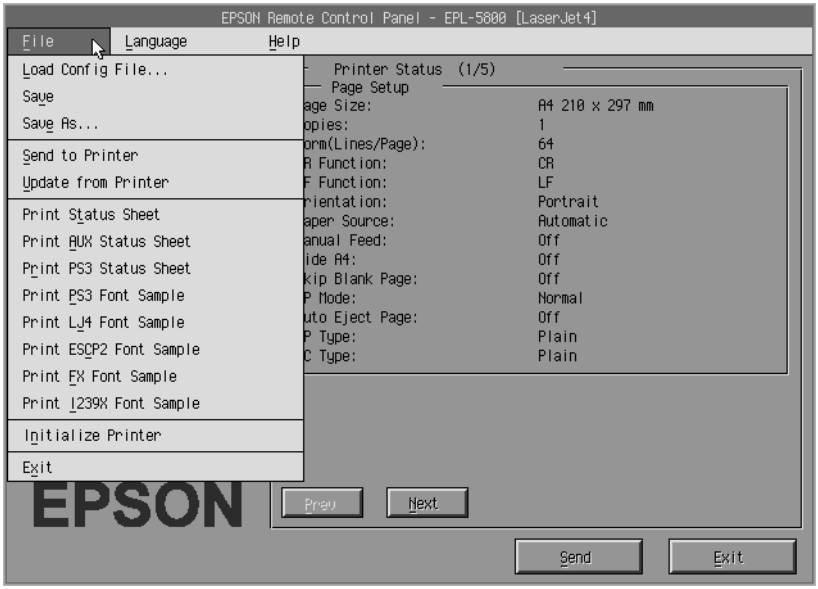
Turns the Alternate Graphics option on or off. The default setting is Off.

Character Set (I239X only)

Allows you to select the character table 1 or 2. When set to 1, the character codes 80h to 9Fh are specified as control codes 00h to 1Fh. When set to 2, the character codes 80h to 9Fh are specified as normal characters.

Printing Font Samples

To print font samples available with the various printer emulation modes, click the File menu and choose the font sample that you want to print. The File menu shown below is for the LaserJet4 emulation mode.



Chapter 5

Remote Control Panel Utility (Macintosh)

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When to use the Remote Control Panel utility 5-2
Operating environment 5-2
Installing the Remote Control Panel utility 5-2
Accessing the Remote Control Panel utility 5-3

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Remote Control Panel Utility Overview

This section gives you an overall introduction to the functions of the Remote Control Panel utility and provides you with instructions on its installation and execution.

When to use the Remote Control Panel utility

Note:
Before using this utility, be sure to read the README file located in the printer software CD-ROM. This file contains important information about the utility.

The Remote Control Panel utility is the software interface that allows you to select the printer port and make settings you cannot usually make in the printer driver.

Operating environment

Operating system :	Mac OS 8.1 or later
Memory :	100 KB to install
Hard disk space :	3 MB of free disk space
Interface :	USB

Installing the Remote Control Panel utility

Follow the steps below to install the Remote Control Panel utility:

1. Insert the printer software CD-ROM containing the utility into your computer.

2. Drag the RCP for EPL-5800 icon directly to the desktop or anywhere on the hard disk.

Accessing the Remote Control Panel utility

Follow the steps below to access the Remote Control Panel utility:

1. Double-click the RCP for EPL-5800 icon. The Remote Control Panel utility for EPL-5800 dialog box appears.

2. Make the desired settings and click OK when you are finished.

Note:
Position the mouse over the options that you want more information on. A pop-up help message appears for each item.

Available Functions and Settings

The following table lists the different functions and settings available in the Remote Control Panel for EPL-5800 window and the Remote Control Panel for EPL-5800: Settings window.

Window	**Function or setting option**
Remote Control Panel for EPL-5800	Printer port selection
	Print Status Sheet button
Remote Control Panel for EPL-5800: Settings	(Setup Menu) Toner Out
	(Printing Menu) Dot Correction, Auto Eject Page
	(I/F) Parallel I/F, AUX I/F

Note:
Position the mouse over the options that you want more information on. A pop-up help message appears for each item.

Chapter 6

Troubleshooting

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- Preventing paper-feed and paper-jam problems 6-2
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- Operational problems 6-12
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Status and Error Lights 6-23

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Problems and Solutions

Look through this section to find the type of problem you have, and try the recommended solutions in the order they are presented. You will also be alerted to errors by the Status Alert window of the EPSON Status Monitor 3 utility according to the settings you make in the Monitoring Preferences dialog box. In addition, indicator lights on the printer's built-in control panel will light up in different combinations to inform you of basic printer status, errors and warnings. See "Status and Error Lights" on page 6-23 for more information.

Note:
If the problem remains after you work through the suggestions in this section, contact your dealer for assistance.

Preventing paper-feed and paper-jam problems

If you have frequent paper-feed or paper-jam problems, use this checklist of corrective measures:

- ❑ Fan the stack of paper and then tap its edges to align the paper before loading.
- ❑ Be sure that you do not load too much paper into the paper-tray.
- ❑ Be sure to adjust the paper guides so that paper feeds freely.
- ❑ Never allow more than 100 sheets to accumulate on the face-down tray, or more than 20 sheets to accumulate on the Face-up Tray.
- ❑ Try turning over the stack of paper in the paper-tray. Most paper packages indicate the better side for printing.

Clearing paper jams

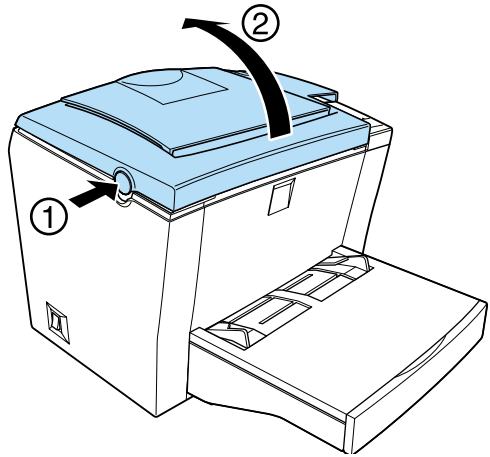
If a paper jam occurs, the printer stops printing and both the Paper and Continue indicator lights come on. Follow the appropriate procedure below to clear the paper jam.

Jam inside the printer

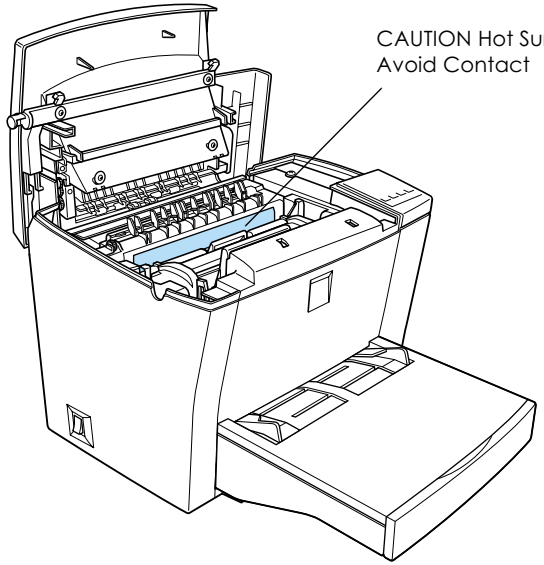
If the jammed sheet is entirely within the printer, remove the sheet as follows:

1. Make sure that the printer is turned off.

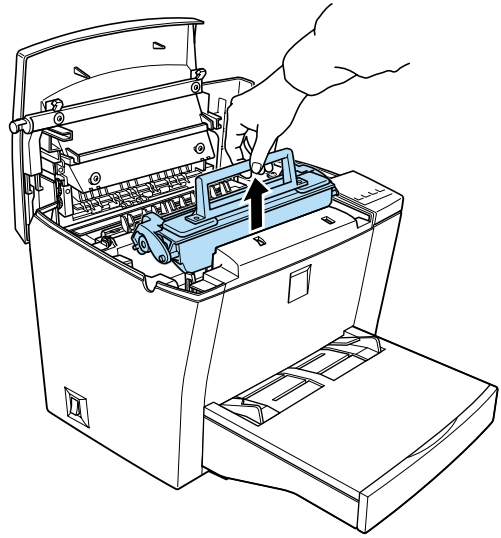
2. Open the printer cover by pressing the latch on the left side of the printer and lifting the cover up all the way.



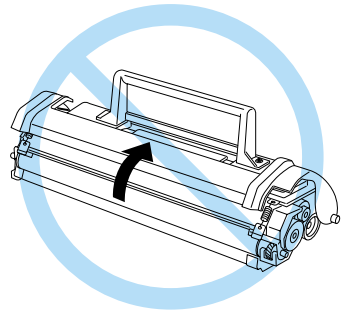
Warning:
Opening the printer cover exposes the fuser, which is marked CAUTION Hot Surface Avoid Contact. *Be careful not to touch the fuser. If the printer has been in use, the fuser may be very hot.*



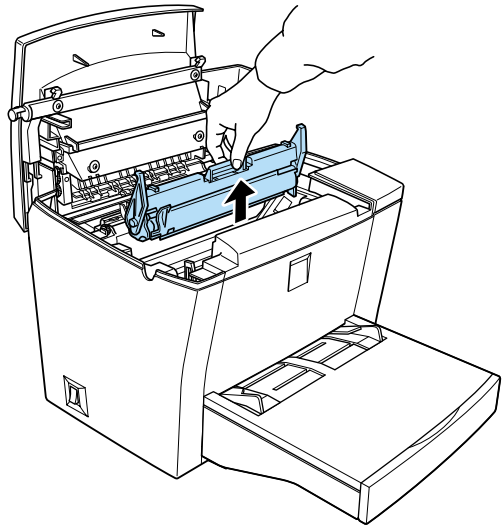
3. Remove the developer cartridge.



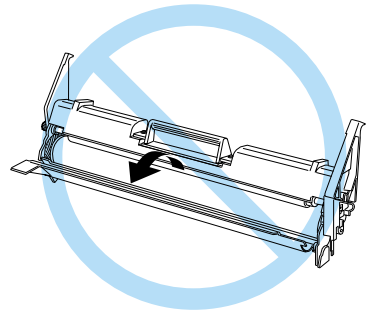
Caution:
When removing the developer cartridge, never touch the developing roller under the flap; otherwise, print quality may decline.



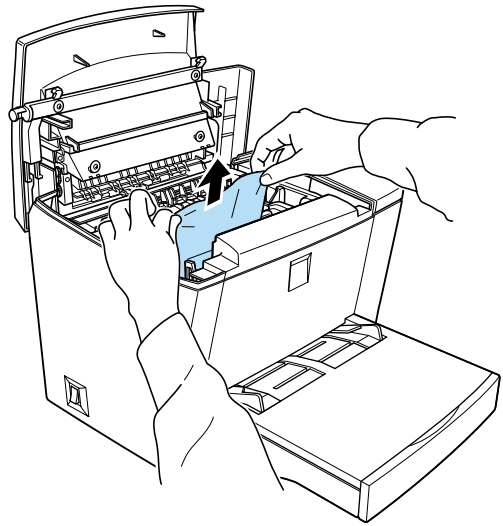
4. Remove the photoconductor unit.



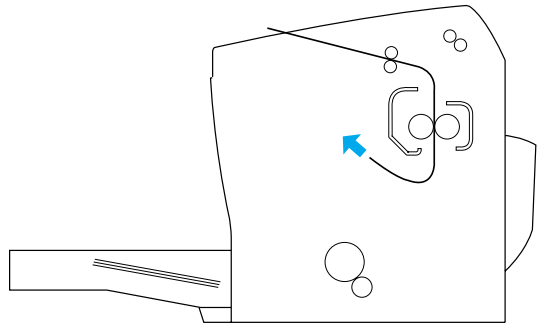
Caution:
Never touch the photoconductor unit's light-sensitive drum; otherwise, print quality may decline.



5. Remove the paper from the paper path.



Note:
If paper is jammed at the fuser, grasp the bottom of the paper and pull it out.



6. Reinstall the photoconductor unit, and then the developer cartridge.

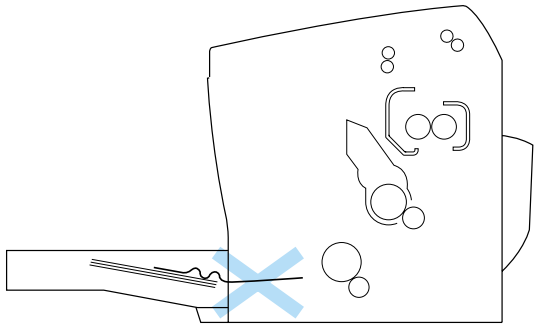
7. Close the printer cover.

8. Tap the edges of the stack of paper on a flat surface and carefully reload it into the MP tray. (Do not reload curled or wrinkled sheets.)

Printing automatically restarts from the page that jammed. If the Paper light stays on after removing all jammed paper, open and close the printer cover to clear the error.

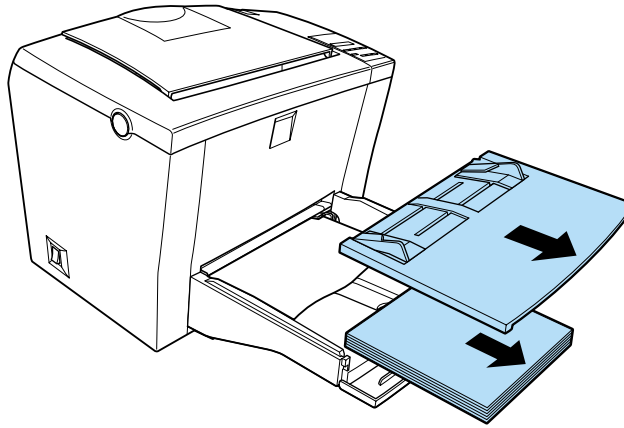
Feed jam at the MP tray

The following illustration shows what this type of jam looks like:

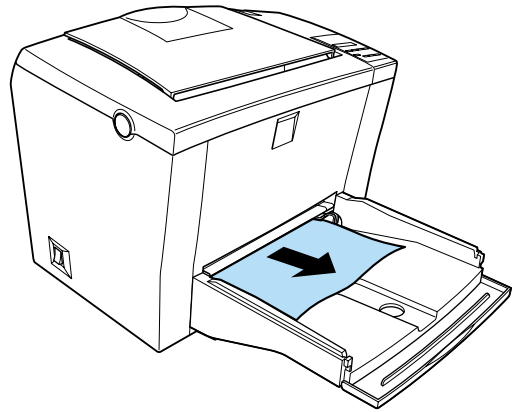


Follow the steps below to clear a feed jam at the MP tray:

1. Remove the MP tray cover and any stacked paper.



2. Gently pull out any sheets that have fed part way into the printer.



3. Open the printer cover. Be sure to remove any pieces of paper that may have torn off or are remaining in the printer.

   If necessary, take out the developer cartridge and the photoconductor unit and remove any paper left in the paper feed path. Reinsert the unit and then the cartridge.

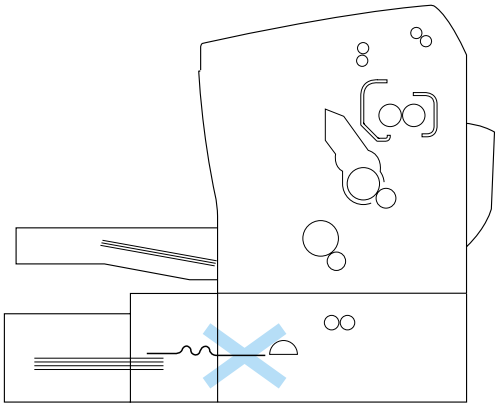
4. Tap the edges of the paper stack on a flat surface and carefully reload it into the MP tray. (Do not reload curled or wrinkled sheets.)

5. Reinstall the MP tray cover.

6. Close the printer cover. The jammed page's print data is automatically reprinted.

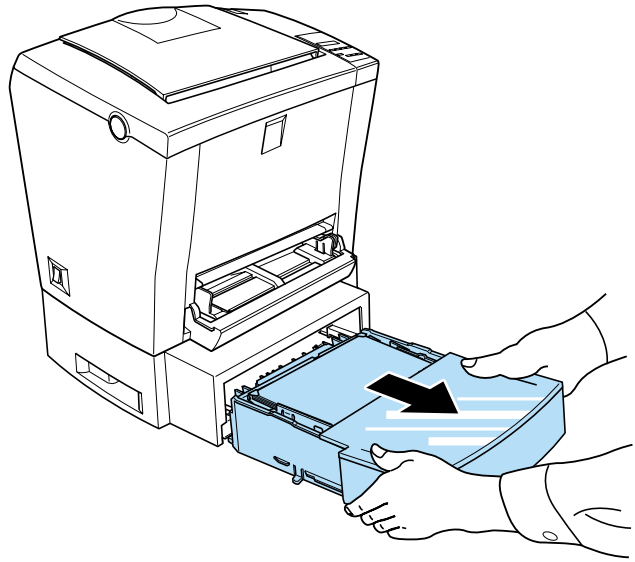
Feed jam when using the optional 500-Sheet Lower Paper Cassette Unit

The following illustration shows what this type of jam looks like:

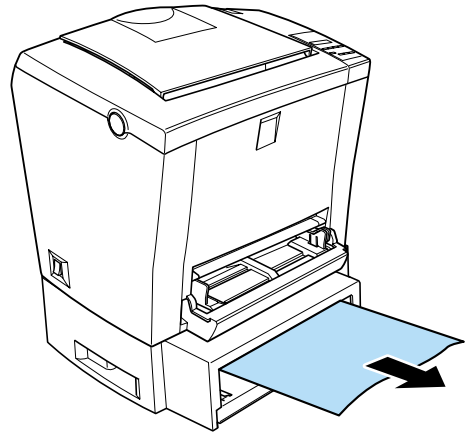


Follow the steps below to clear a feed jam in the 500-Sheet Lower Paper Cassette Unit:

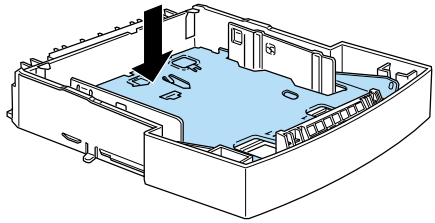
1. Remove the paper-tray from the 500-Sheet Lower Paper Cassette Unit.



2. Remove any folded or jammed paper from the paper-tray and from the inside of the cassette unit, and discard any curled or wrinkled sheets.



3. Remove all paper from the paper-tray and press down on the plate until it locks into position.



4. Tap the edges of the paper stack, then set it back into the paper-tray, making sure the paper is evenly aligned and that the top sheet is below the maximum paper mark.

5. Make sure you are using the correct paper size. The tray can accommodate only A4 or Letter size paper, depending on the country where you purchased the option. Also make sure you are using paper that meets the specifications for this printer.

6. Set the paper-tray back into the 500-Sheet Lower Paper Cassette Unit.

7. Open and then close the printer cover. The jammed page's print data is automatically reprinted.

Operational problems

The On Line light does not turn on when you turn the printer on

Turn off the printer and check the power cord connection between the printer and the electrical outlet. Then turn the printer back on.

If the electrical outlet is controlled by an outside source such as a wall switch, make sure the switch is turned on. Try plugging another electrical device into the outlet to check whether the outlet is operating properly.

The printer doesn't print and the On Line light is off

Press the On Line button once to put the printer online (the On Line indicator light comes on).

The On Line light is on but nothing prints

Your computer may not be properly connected to the printer. Perform the procedure described in "Connecting to the computer" in the *Setup Guide*.

The interface cable may not be plugged in securely. Check both ends of the cable between the printer and the computer. If connecting through the parallel interface, be sure to secure the connector using the wire retaining clips.

Make sure you use a double-shielded, twisted-pair interface cable no more than six feet in length.

The developer cartridge may be empty. To replace the cartridge, see "Replacing the developer cartridge" on page 7-2.

Printout problems

Some or all of the printout is garbled or printed as asterisks

Make sure that both ends of the interface cable are plugged in securely.

If connecting through the parallel interface, make sure you use a double-shielded, twisted-pair interface cable no more than six feet in length.

If the Image Optimum setting in the Remote Control Panel utility is set to Auto or On, fonts other than you expect may be printed to increase the printing speed. Turn the Image Optimum setting to Off.

If the printer still does not print correctly, contact your dealer or a qualified service representative.

Position of the printout is not correct

Make sure that you are using the correct page length and margin settings in your application program.

Graphics don't print correctly

Graphics require large amounts of memory. See "Memory problems" on page 6-19.

Printed line is faint

Set Dot Correction to On in the Remote Control Panel utility. If the problem persists even after changing the Dot Correction setting, either print using a bolder line setting or decrease the resolution from 1200 dpi to 600 dpi.

Light color is not printed

If fills or light-colored text or graphics are not printed, try changing the selected color or print at 600 dpi resolution.

The background is dark or dirty

Lighten the Density setting in the printer driver.

Turn off the printer and clean the paper path inside the printer using a clean, dry, lint-free cloth.

Clean internal printer components by printing three pages with only one character per page.

You may not be using the correct type of paper for your printer. If the surface of your paper is too rough, printed characters may appear distorted or broken. Smooth, high-quality copier paper is recommended for best results. See "Specifications" on page A-2 for information on choosing paper.

There may be a problem with the developer cartridge. Remove the cartridge and shake it gently from side to side and then from front to back to distribute the toner evenly, then reinstall it. If the problem persists, replace the developer cartridge. For more information, see "Replacing the developer cartridge" on page 7-2.

You may need to replace the photoconductor unit. See "Replacing the photoconductor unit" on page 7-8 for instructions.

Black or white bands appear in the printout

Turn off the printer. Clean the paper path inside the printer using a soft, dry, lint-free cloth.

Clean internal printer components by printing three pages with only one character per page.

There may be a problem with the developer cartridge. Remove the cartridge and shake it gently from side to side and then from front to back to distribute the toner evenly, then reinstall it. If this does not solve the problem, see "Replacing the developer cartridge" on page 7-2.

You may need to replace the photoconductor unit. See "Replacing the photoconductor unit" on page 7-8 for instructions.

Uneven darkness

Your paper may be moist or damp. Do not store paper in a humid or damp environment.

Make sure the paper type is correct.

Check that the Toner Save mode is turned on.

Confirm that the density setting is light.

Turn off the printer. Take out the developer cartridge, shake it gently from side to side and then from front to back to distribute the toner evenly, and then reinstall it.

If this does not solve the problem, install a new cartridge. For more information, see "Replacing the developer cartridge" on page 7-2. Then print several pages to check the print quality.

Toner smudges

Your paper may be moist or damp. Do not store paper in a humid or damp environment.

You may not be using the correct type of paper for your printer. If the surface of your paper is too rough, printed characters may appear distorted or broken. Smooth, high-quality copier paper is recommended for best results. See “Specifications” on page A-2 for information on choosing paper.

Turn off the printer. Remove the developer cartridge, shake it from side to side to distribute the toner, and wipe the bottom of the cartridge with a clean, dry, lint-free cloth.

Clean the paper path inside the printer using a clean, dry, lint-free cloth.

Clean internal printer components by printing three pages with only one character per page.

If the problem remains, replace the developer cartridge. For more information, see “Replacing the developer cartridge” on page 7-2.

Missing areas on printed image

Your paper may be moist or damp. Printing is sensitive to moisture absorbed by the paper. The higher the moisture content of the paper, the lighter the printed output. Do not store paper in a humid or damp environment.

You may not be using the correct type of paper for your printer. If the surface of your paper is too rough, printed characters may appear distorted or broken. Smooth, high-quality copier paper is recommended for best results. See “Specifications” on page A-2 for information on choosing paper.

Completely blank pages

Check the toner status using the EPSON Status Monitor 3 utility. If the status monitor displays the Toner Low message, you need to replace the developer cartridge. For instructions, see "Replacing the developer cartridge" on page 7-2.

To check that the photoconductor unit and the developer cartridge are correctly installed, see "Replacing Consumable Products" on page 7-2.

The problem may be with your application program or your interface cable. Try printing a status sheet through the control panel. If blank pages continue to print, the problem may be with the printer. Turn off the printer and contact your dealer.

The printed image is light or faint

Your paper may be moist or damp. The higher the moisture content of the paper, the lighter the printed output. Do not store paper in a humid or damp environment.

The Toner Save mode may be on. Turn off the Toner Save mode using the printer driver.

Darken the Density setting in the printer driver.

Turn off the printer. Take out the developer cartridge, shake it gently from side to side to distribute the toner, and then reinstall it. If the problem persists, see "Replacing Consumable Products" on page 7-2.

The image is too dark

Lighten the Density setting in the printer driver.

If the problem persists, see "Replacing Consumable Products" on page 7-2.

Non-printed side of the page is dirty

Toner may have spilled onto the paper feed path. Turn off the printer. Remove the developer cartridge and the photoconductor unit and then clean the paper path inside the printer using a clean, dry, lint-free cloth.

Warning:
Opening the printer exposes the fuser, which is marked by a CAUTION Hot Surface Avoid Contact *label. Be careful not to touch the fuser. If the printer has been in use, the fuser may be very hot.*

Memory problems

Insufficient memory for current task

Printing stops due to a lack of memory. To correct the error, press the Continue button. If the problem persists, press the ALT and Form Feed buttons simultaneously to reset the printer. You can also clear this error by turning the printer off and back on again.

However, it may be necessary to reduce the number or size of fonts, reduce the number or size of graphics, lower the resolution, or add more memory to the printer.

Insufficient memory to print all copies

The printer does not have sufficient memory to collate print jobs. Only one set of copies will be printed. Reduce the contents of print jobs, or add more memory. Press the Continue button to clear the warning.

Decreased print quality due to insufficient memory

The printer could not print at the required quality level due to insufficient memory and automatically reduced the print quality so that it could continue printing. Check to see if the printout is acceptable. If not, add more memory for a permanent solution or temporarily set Print Quality to 600 dpi and Page Protect to Off in the printer driver.

Option problems

Paper does not feed from the optional 500-Sheet Lower Paper Cassette Unit

Make sure you have selected the correct paper source in your printer driver.

There may be no paper in the 500-Sheet Lower Paper Cassette Unit. Load it with paper.

Be sure that the 500-Sheet Lower Paper Cassette Unit is properly installed and that you have not tried to load it with too many sheets of paper. The cassette can hold a maximum of 500 sheets of 75g/m² (20 lb) paper.

The 500-Sheet Lower Paper Cassette Unit may not be installed properly. See "500-Sheet Lower Paper Cassette Unit" on page 2-3 for instructions on installing the 500-Sheet Lower Paper Cassette Unit.

Feed jam when using the optional 500-Sheet Lower Paper Cassette Unit

See "Feed jam when using the optional 500-Sheet Lower Paper Cassette Unit" on page 6-10.

Printer driver and utilities problems

The status information does not match the real status of the printer

EPSON Status Monitor 3 monitors the printer at regular intervals. You may need to wait until EPSON Status Monitor 3 monitors the printer again, and automatically updates the status.

Cannot install the printer driver in Windows

If your computer did not have Windows 98 pre-installed, it is an upgrade from Windows 95 to 98. It may not support USB connectors, and may not print. Confirm whether your computer supports USB connectors by calling the manufacturer.

The printer driver is installed as an "unknown device" in Device Manager

Some problem may have disrupted the plug-and-play installation of the printer driver. With the printer turned on and connected to the computer through a USB cable, right-click the My Computer icon and choose Properties. Click the Device Manager tab and check if USB printer or EPL-5800 appears under unknown device. If it does, disconnect the USB cable from the printer, reconnect it, and reinstall the printer driver.

Cannot print from Windows

The printer port setting may be incorrect. Confirm that the correct printer port is chosen in the Details tab of the printer driver's Properties dialog box.

Your printer is not displayed in the Printers folder

The computer does not recognize the printer connection. Make sure that the printer's power is on. If you are using the USB interface and your printer does not appear in the Printers folder, try disconnecting and then reconnecting the USB cable. If this does not resolve the problem, try reinstalling the printer driver. See the *Setup Guide* for more information.

Communication errors

Communication error

Check that the power cord is properly plugged into the electrical outlet and that the printer is turned on.

The printer may be initializing itself or running a self-test. Give the printer enough time to complete the initialization process.

Make sure that the printer is online and ready to print. The On Line light on the control panel is on solid when the printer is online.

Windows shared printers cannot be monitored

Monitoring of shared printers is set internally by the EPSON Status Monitor 3 utility. To monitor Windows shared printers, right-click Network Neighborhood and then click Properties. Verify that File and printer sharing for Microsoft Networks is shown in the list of installed components.

Also, verify that EPSON Status Monitor 3 is installed in the computer hosting the Windows shared printer, and be sure that the Allow monitoring of shared printers check box is selected in the Monitoring Preferences dialog box.

Status and Error Lights

The lights on the control panel light up in different combinations to indicate printer status and to alert you to errors and warnings.

Status/Error	INDICATOR LIGHTS					
	Paper	Toner	Memory	Continue	Data	On Line
Cannot Write on ROM Module in Slot A			■	■		
Change Paper	☐̈			☐̈		
Check Paper Size	☐̈					
Check Paper Type	☐̈					
Decreased Print Quality			☐̈			
Exiting Paper Jam	■			■		
Feed Jam	■			■		
Form Feed					☐̈	
Insufficient Memory for Current Task			■	☐̈		
Insufficient Memory to Print All Copies			☐̈			
Invalid AUX Interface Card			■	☐̈		
Invalid PS3 ROM Module			■	☐̈		
Manual Feed	■			■		
Need Memory			☐̈			
Offline						OFF
Online						■/☐̈
Paper Jam	■			■		
Paper Out	☐̈			■		
Print Overrun			■	☐̈		
Printer Open	■			■		
Reset	■	■	■			
Reset All	■	■	■	■	■	■
ROM Module Installed in Slot A is Invalid			■	☐̈		
Service Required	☐̈	☐̈	☐̈	☐̈	☐̈	☐̈
Standby						☐̈
Toner Low		☐̈				
Toner Out		■		■		
Warming Up						☐̈
Writing on ROM Module in Slot A					■/☐̈	

■ On
☐̈ Flashing

Cannot Write on ROM Module in Slot A

Control panel: Memory light on, Continue light on

Indicates that a write error has occurred on the ROM module in slot A. Try performing a Reset All on the printer. If this does not clear the error, turn off the printer and remove the ROM module from the ROM slot.

Change Paper

Control panel: Paper light flashing, Continue light flashing

The paper loaded in the paper source does not match the required paper size. Replace with paper of the correct size and press the Continue button.

Check Paper Size

Control panel: Paper light flashing

This warning indicates that although printing was successful, the paper size setting in the printer driver is different from the size of paper loaded in the printer. To print on the correct paper size, make sure you load the appropriate paper into the printer. To clear the warning, press the Continue button on the control panel.

Check Paper Type

Control panel: Paper light flashing

This warning indicates that although printing was successful, the paper type setting in the printer driver is different from the type of paper loaded in the printer. Load the correct type of paper into the printer. To clear the warning, press the Continue button on the control panel.

Decreased Print Quality (due to insufficient memory)

Control panel: Memory light flashing

The printer could not print at the requested quality level due to insufficient memory and automatically reduced the print quality so that it could continue to print. Check to see if the printout is acceptable. If not, add more memory for a permanent solution, or temporarily set Print Quality to 600 dpi and Page Protect to Auto in the printer driver.

Exiting Paper Jam

Control panel: Paper light on, Continue light on

Indicates that there may be a paper jam inside the printer. Open the printer cover, remove any jammed paper, and close the printer cover. The error will automatically clear itself and the jammed page's print data is reprinted.

Feed Jam

Control panel: Paper light on, Continue light on

Indicates that there is a paper feed jam. See "Feed jam at the MP tray" on page 6-8 and "Feed jam when using the optional 500-Sheet Lower Paper Cassette Unit" on page 6-10 for instructions on clearing feed jams. The error is automatically resolved upon clearing the jammed paper and opening and closing the printer cover.

Form Feed

Control panel: Data light flashing

Indicates that the printer is processing data that is stored in the printer buffer. Once all data is processed and printing stops, the Data light turns off.

Insufficient Memory for Current Task

Control panel: Memory light on, Continue light flashing

The printer has insufficient memory for the current task. The document was not printed.

To correct the error, press the Continue button. If the message remains, press the ALT and Form Feed buttons simultaneously to reset the printer. You can also clear this error by turning the printer off and back on again.

The next time you print the document, it may be necessary to reduce the number or size of fonts, reduce the number or size of graphics, or lower the resolution. You can also add more memory to the printer.

Insufficient Memory to Print All Copies

Control panel: Memory light flashing

The printer does not have sufficient memory to collate print jobs. Only one set of copies will be printed. Reduce the contents of print jobs, or add more memory. Press the Continue button to clear the warning.

Invalid AUX Interface Card

Control panel: Memory light on, Continue light flashing

The printer cannot read the installed optional interface card. Turn off the printer and try reinstalling the card. If the error persists, you may have to replace the interface card.

Contact your dealer for assistance.

Invalid PS3 ROM Module

Control panel: Memory light on, Continue light flashing

An optional PostScript 3 ROM module not supported by this printer is installed, or a supported module is installed incorrectly in slot A. See "ROM Module" on page 2-20 to make sure you are using the correct PostScript 3 ROM module, or try reinstalling the module.

Manual Feed

Control panel: Paper light on, Continue light on

The above lights always come on when Manual Feed is specified in Paper Source. Make sure paper of the size specified in the printer driver is loaded in the manual feed slot on the MP tray. You have to press the Continue button for every sheet that you want to print in manual feed mode. If you press the Continue button when there is no paper in the manual feed slot, the printer prints from the next available paper source.

Remember to clear the Manual Feed check box in the printer driver's Basic Settings tab before trying to print from the MP tray or the optional 500-Sheet Lower Paper Cassette Unit after printing in the manual feed mode. If the lights continue to turn on even after you have cleared the Manual Feed check box, reset the printer by simultaneously pressing the ALT and Continue buttons on the control panel.

For detailed information on the manual feed mode, see "Manually loading paper" on page 1-10.

Need Memory

Control panel: Memory light flashing

This warning indicates that the printer encountered memory problems when printing the document. Press the Continue button on the control panel to clear the warning.

Perform either a Reset or a Reset All on the printer after deleting the current print job.

The next time you print the document, reduce the resolution setting. For a permanent solution, install an optional memory module into the printer. See "Memory Module" on page 2-11 for installation instructions.

Offline

Control panel: On Line light off

Indicates that the printer is not ready to print. Press the On Line button to put the printer online.

Online

Control panel: On Line light on or flashing

Indicates that the printer is ready to print. When online, the On Line light is usually on, but sometimes flashes as it processes data internally.

Paper Jam

Control panel: Paper light on, Continue light on

Indicates that there is a paper jam. See "Clearing paper jams" on page 6-3 for instructions on clearing paper jams. The error is automatically resolved upon clearing the jammed paper and opening and closing the printer cover.

Paper Out

Control panel: Paper light flashing, Continue light on

There is no paper in the specified paper source. Load paper of the size specified in the printer driver into the paper source. See "Loading paper into the MP tray" on page 1-7 and "Loading paper" on page 2-5 for instructions on loading paper.

Print Overrun

Control panel: Memory light on, Continue light flashing

The time required to process data exceeds the print engine speed because the volume of data is too great. Press the Continue button to resume printing. If this message appears again, change the Page Protect setting to On.

Printer Open

Control panel: Paper light on, Continue light on

The printer is open. Make sure the printer cover is closed properly by opening it and closing it again.

Reset

Control panel: Paper light on, Toner light on, Memory light on

The printer's current interface has been reset and the buffer is cleared. However, other interfaces are still active and retain their settings and data.

Reset All

Control panel: All lights on

All printer settings have been reset to the user default configuration, or to the last settings that were saved.

ROM Module in Slot A is not Formatted

Control panel: no light signal to indicate this warning

The installed ROM module in slot A is not formatted. Remove the ROM module for immediate resolution of the problem. You may have to replace the ROM module to resolve the problem permanently.

Contact your dealer for assistance.

ROM Module Installed in Slot A is Invalid

Control panel: Memory light on, Continue light flashing

The ROM module in slot A is not installed correctly or is invalid for this printer. Make sure you are using a proper ROM module, or reinstall the module. See "ROM Module" on page 2-20 for installation instructions.

Service Required

Control panel: All lights flashing

A controller error or a print engine error has been detected. Turn off the printer, wait 5 seconds and then turn it back on. If all the lights start flashing again, turn off the printer, unplug the power cord, and contact a qualified service representative.

Standby

Control panel: On Line light flashing (flashes at longer intervals than the usual flashing)

Indicates that the printer is in energy-saving mode. The printer goes into standby due to inactivity. If Standby is enabled, the printer goes into standby in 30 minutes.

Toner Low

Control panel: Toner light flashing

The printer is almost out of toner. Prepare a new developer cartridge to replace the current one.

Toner Out

Control panel: Toner light on, Continue light on

You must replace the developer cartridge. See "Replacing the developer cartridge" on page 7-2.

Warming Up

Control panel: On Line light flashing

Indicates that the printer is warming up to process and print data.

Writing on ROM Module in Slot A

Control panel: Data light on or flashing

Indicates that data is being written to the ROM module in slot A.

Resetting the Printer

There are two ways to reset (return to a fixed set of conditions) the printer.

Reset

You can perform a Reset to reset the settings for the current emulation mode and interface by holding down the ALT and Continue buttons on the control panel until the Paper, Toner and Memory indicator lights come on. You can reset the printer anytime a print job is not being sent to it through the active interface.

Reset All

Performing a Reset All will reset the settings for all emulation modes and interfaces. A Reset All is carried out by holding down the ALT and Continue buttons for 5 seconds, and is successfully completed when all the lights turn on. You can also reset all emulation modes and interfaces by turning the printer off and back on again.

Note:
Reset All clears all print jobs received from all interfaces; be careful not to disrupt someone else's print job.

Chapter 7

Maintenance and Transportation

Replacing Consumable Products 7-2
- Replacing the developer cartridge 7-2
- Replacing the photoconductor unit 7-8

Cleaning the Printer 7-12
- Cleaning the inside of the printer 7-12
- Removing spilled toner 7-14
- Cleaning the printer case 7-14

Transporting the Printer 7-15

Replacing Consumable Products

Your printer uses two consumable components, which are listed below along with their approximate lifetimes.

Developer cartridge (S050010)
Up to 6,000 pages at 5% print ratio on A4 or Letter size paper, depending on the complexity of print jobs.

Photoconductor unit (S051055)
Up to 20,000 pages at 5% print ratio.

You can view the condition of the consumables using the EPSON Status Monitor 3 utility.

Replace the developer cartridge if you notice a decline in print quality. Replace the photoconductor unit only if print quality problems remain after replacement of the developer cartridge.

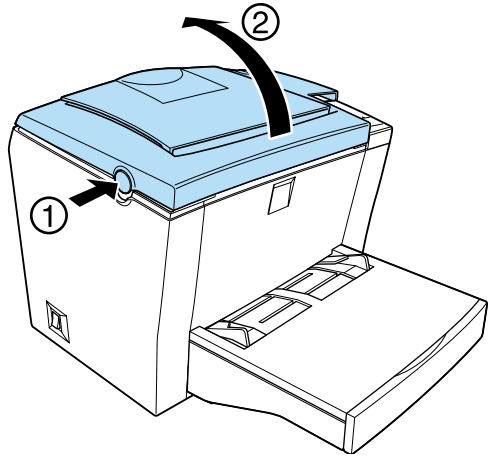
Replacing the developer cartridge

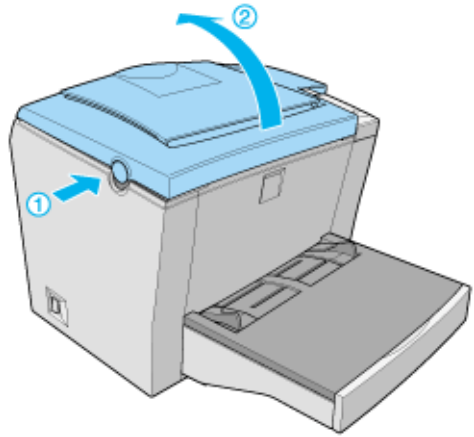
Follow these steps to replace the developer cartridge:

1. Make sure the printer is turned off.

2. Make sure the output tray at the top of the printer is lowered.

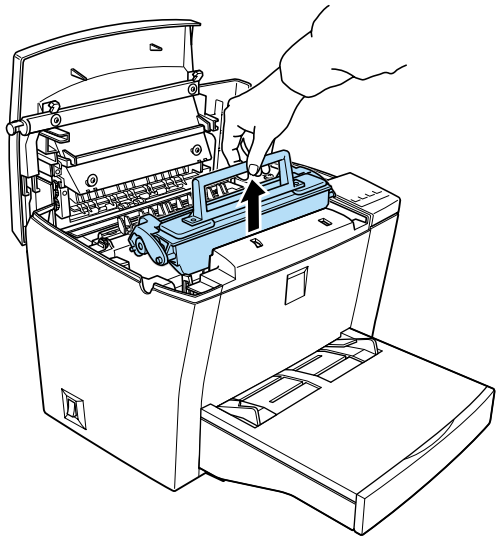
3. Open the printer cover by pressing the latch on the left side of the printer and lifting the cover up all the way.

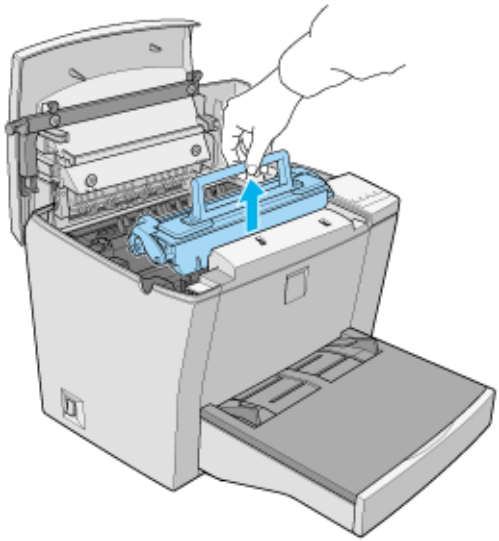




Caution:
You must completely open the printer cover when replacing the developer cartridge; otherwise, you may damage the printer.

4. Hold the cartridge by the handle and pull it straight up and out of the printer.



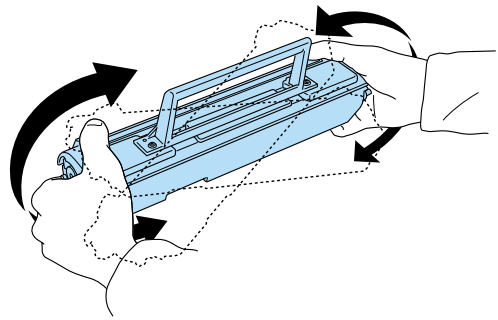


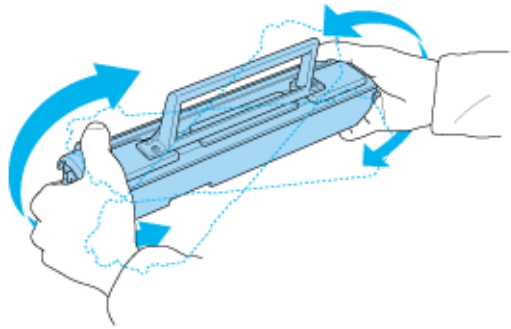
Warning:
Do not touch the fuser, which is marked CAUTION Hot Surface Avoid Contact. *If the printer has been in use, the fuser may be very hot.*

Caution:
Be careful not to spill any remaining toner from the used developer cartridge. If toner is spilled inside the printer, clean it with a clean, dry, lint-free cloth or with a vacuum-cleaning device.

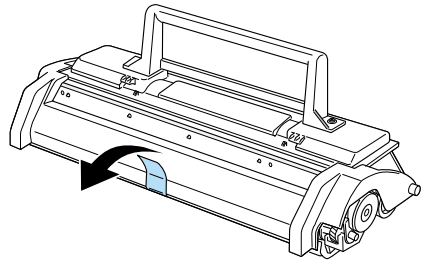
5. Dispose of the used developer cartridge properly.

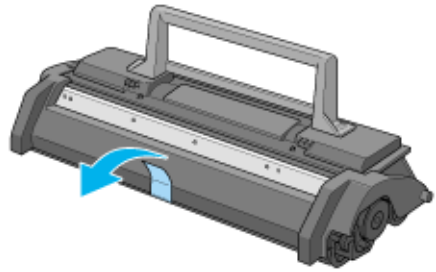
6. Remove the new developer cartridge from its bag. While holding the cartridge horizontally, gently shake it a few times from side to side and then from front to back to distribute the toner evenly.



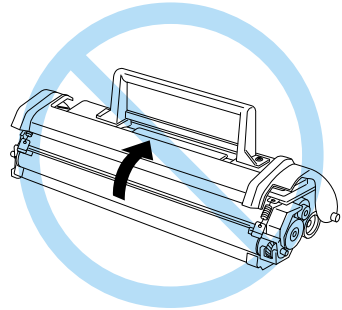


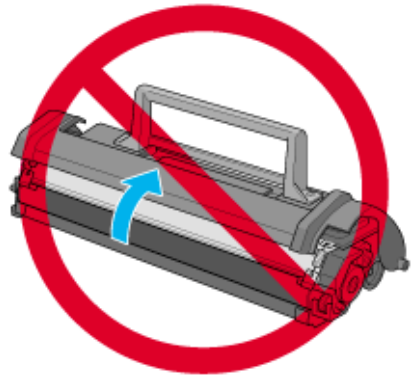
7. Remove the protective tape seal from the developer cartridge.



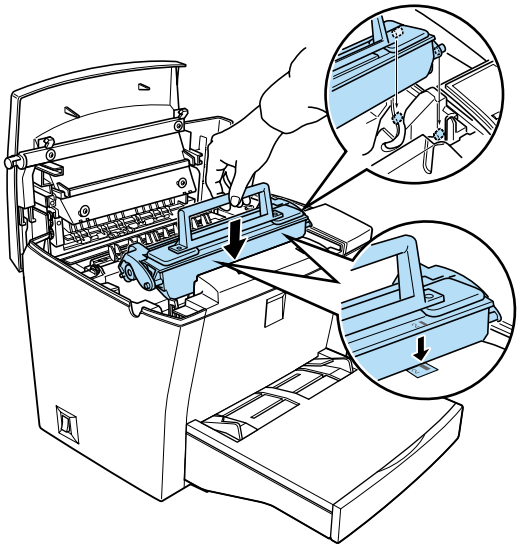


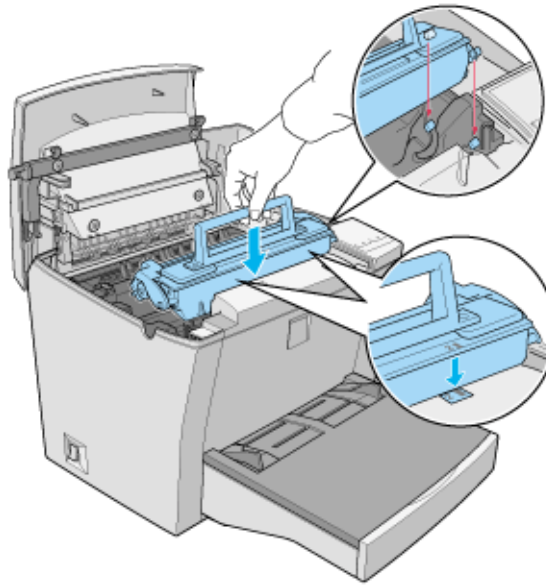
Caution:
Never touch the developing roller under the flap; otherwise, print quality may decline.



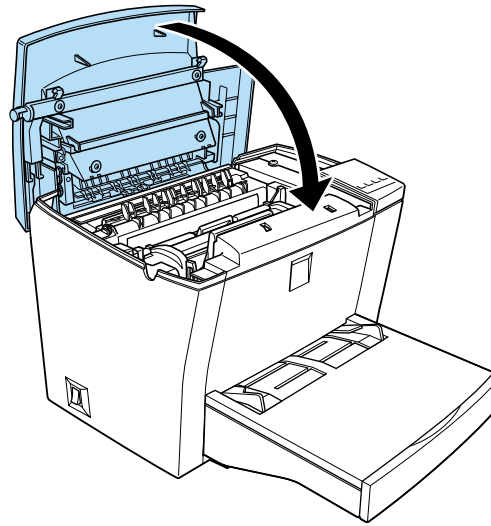


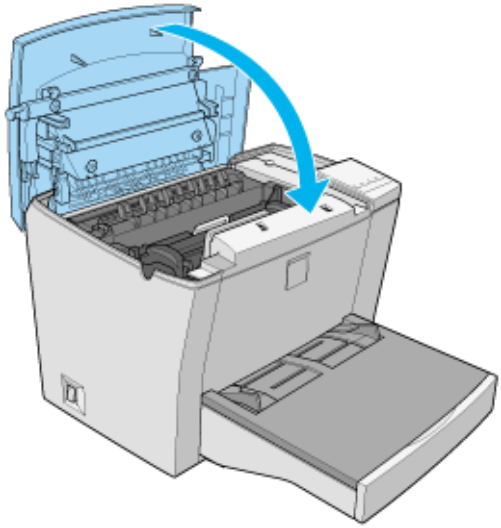
8. Hold the cartridge by its handle and lower it into the printer, making sure that the pins on both sides of the cartridge fit into the grooves inside the printer. Slide the cartridge gently into the opening until it locks into place.





9. Lower the printer cover. Press it gently until it clicks shut.





10. While pressing the On Line and Form Feed buttons simultaneously, turn the printer on. This will reset the toner level counter.

    Note:

    - ❏ *In Windows, you can also reset the toner level counter by clicking the* Toner Level Clear *button in the Printer Setting dialog box located in the Optional Settings tab of the printer driver.*

    - ❏ *In Macintosh, click the* Toner Reset *button in the Printer Setting dialog box.*

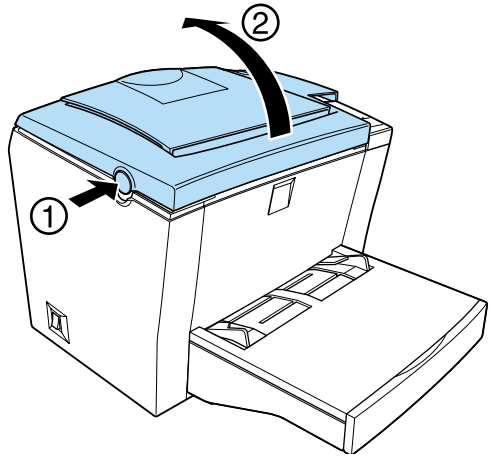
Whenever you replace the developer cartridge, you should clean the paper roller as described in "Cleaning the Printer" on page 7-17.

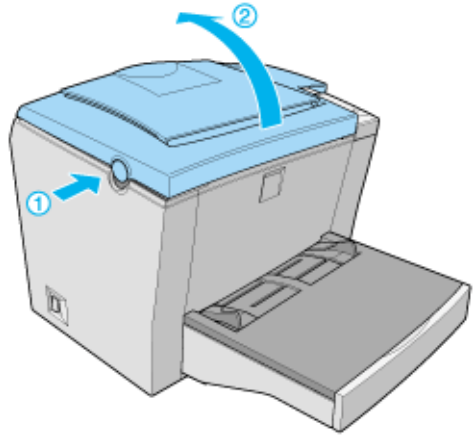
Replacing the photoconductor unit

1. Make sure the printer is turned off.

2. Make sure the output tray at the top of the printer is lowered.

3. Open the printer cover by pressing the latch on the left side of the printer and lifting the cover up all the way.

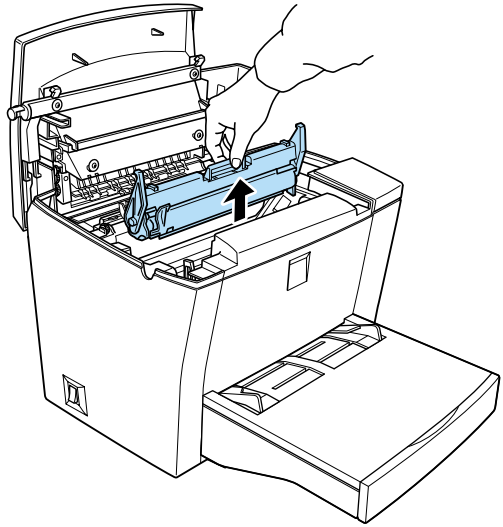


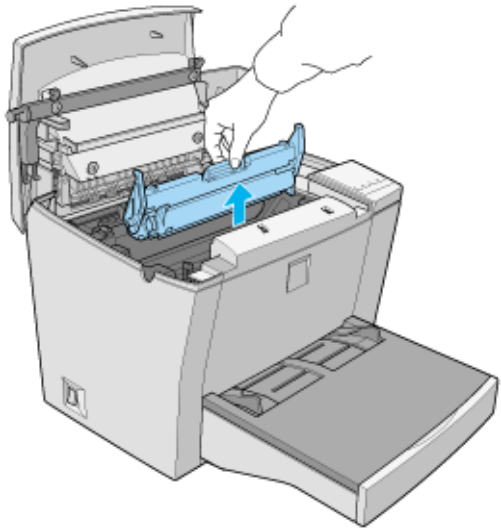


Caution:
You must completely open the printer cover to replace the photoconductor unit; otherwise, you may damage the printer.

4. Remove the developer cartridge.

5. Slide the photoconductor unit gently out of the printer, as shown below.



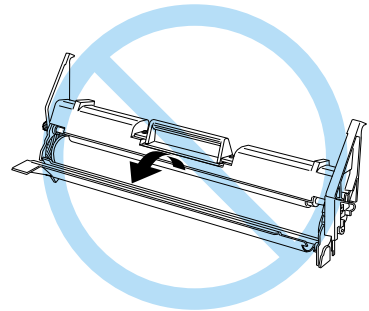


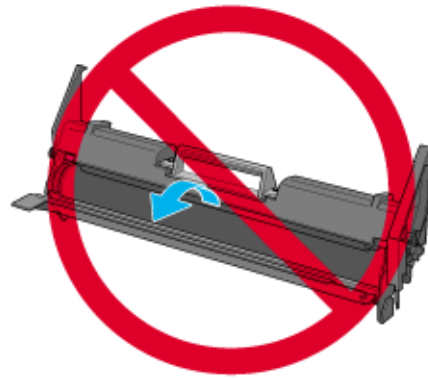
Warning:
Do not touch the fuser, which is marked CAUTION Hot Surface Avoid Contact. *If the printer has been in use, the fuser may be very hot.*

6. Properly dispose of the used photoconductor unit.

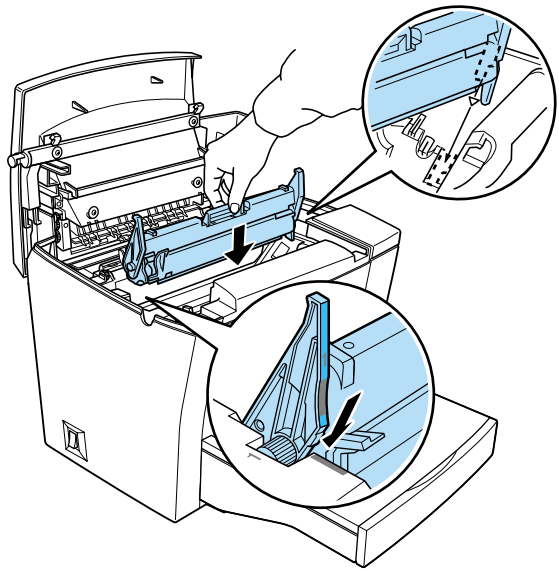
7. Remove the new photoconductor unit from its bag.

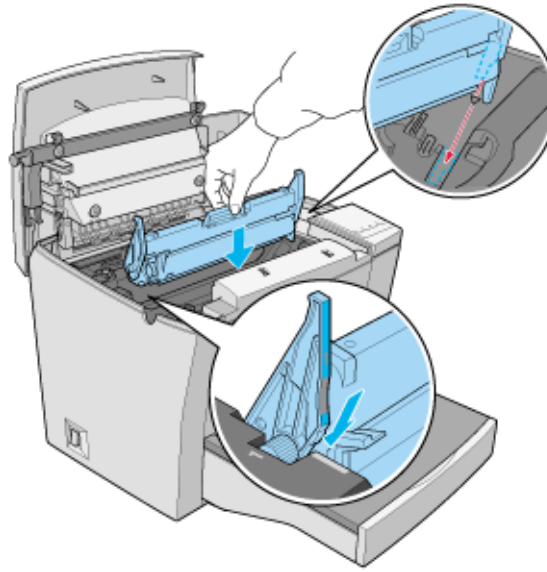
Caution:
Never touch the photoconductor unit's light-sensitive drum; otherwise, print quality may decline.





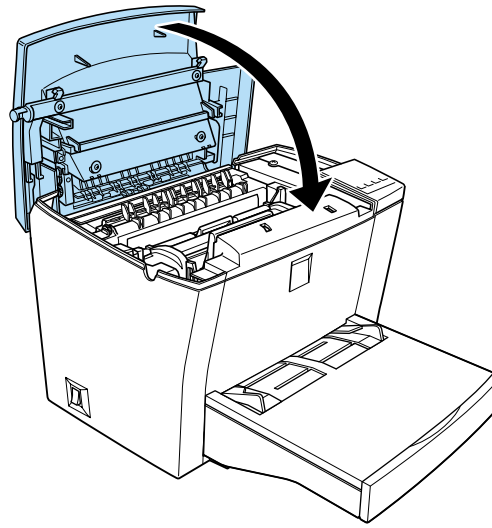
8. Insert the pins on both sides of the new photoconductor unit into the grooves inside the printer. Slide the unit gently into the opening until it locks into place.

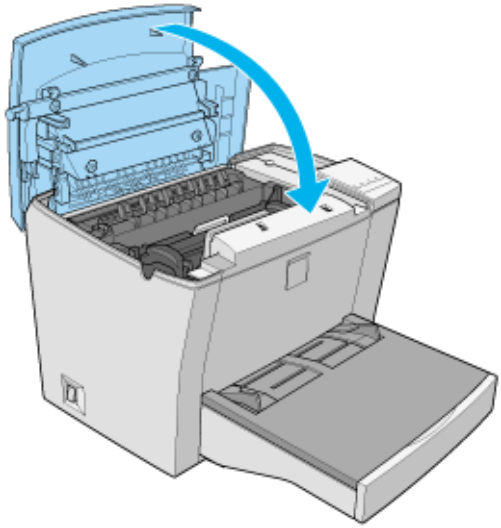




9. Reinstall the developer cartridge.

10. Lower the printer cover. Press it gently until it clicks shut.





11. While pressing the On Line and Continue buttons simultaneously, turn the printer on. This will reset the photoconductor level counter.

Note:

- ❏ *In Windows, you can also reset the photoconductor level counter by clicking the* OPC Level Clear *button in the Printer Setting dialog box located in the Optional Settings tab of the printer driver.*

- ❏ *In Macintosh, click the* Photoconductor Life Reset *button in the Printer Setting dialog box.*

Cleaning the Printer

The printer needs only minimal cleaning. If you notice a decline in print quality, clean the inside of the printer as described in this section.

You should also clean the MP tray and the printer case every few months.

Cleaning the inside of the printer

Fine particles of dust can collect inside the printer. Follow the steps below to clean the inside of the printer and the paper feeder:

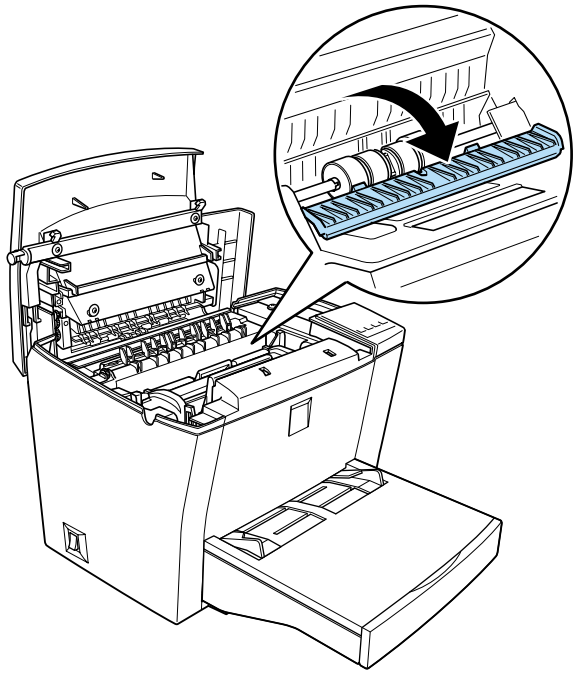
1. Make sure the printer is turned off.

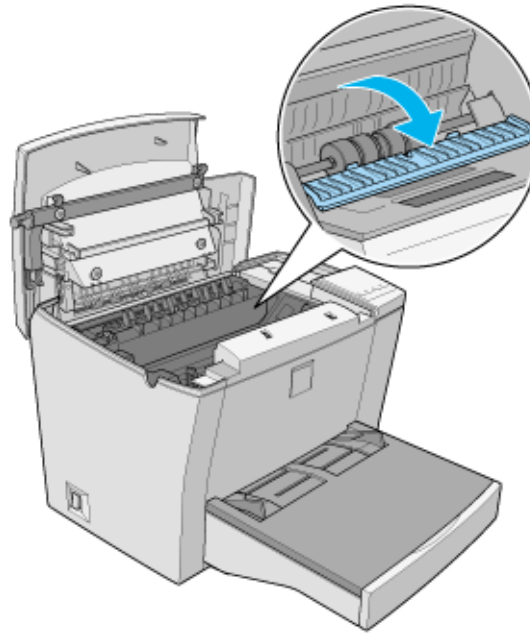
2. Open the printer cover by pressing the latch on the left side of the printer and lifting the cover up all the way.

   Warning:
   Opening the printer exposes the fuser, which is marked CAUTION Hot Surface Avoid Contact. *Be careful not to touch the fuser. If the printer has been in use, the fuser may be very hot.*

3. Remove the developer cartridge and the photoconductor unit as described in "Replacing Consumable Products" on page 7-2.

4. Remove any dirt inside the printer with a clean, dry, lint-free cloth. Do not use compressed air. If you have paper feed problems, clean the paper roller by opening the roller cover and wiping the roller with a clean, dry, lint-free cloth.





5. Reinstall the photoconductor unit, and then the developer cartridge.

6. Lower the printer cover. Press it gently until it clicks shut.

7. Remove all the paper from the MP tray and clean the tray with a clean, dry, lint-free cloth.

Removing spilled toner

If toner spills inside the printer, do not use the printer until you remove all the spilled toner.

If only a small amount of toner is present, carefully wipe out the inside of the printer with a clean, dry, lint-free cloth.

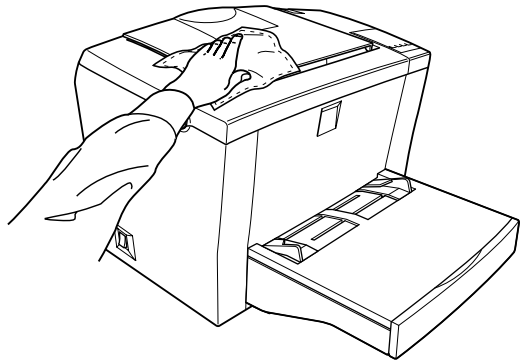
If a large amount of toner is present, use a small vacuum-cleaning device (available from computer supply stores) to remove it. Then carefully wipe with a clean, dry, lint-free cloth.

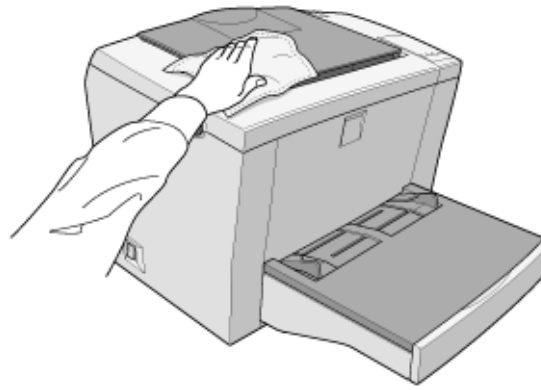
Caution:
Toner and other fine powders can damage some vacuum cleaners. Be sure to read the instructions for your vacuum cleaner before you use it on spilled toner.

Note:
If you spill toner on your clothing, rinse it off with cold water. Do not use hot water as this may cause the toner to leave a permanent stain.

Cleaning the printer case

If the printer's outer case is dirty or dusty, turn off the printer and clean it with a clean, dry, lint-free cloth dampened with a mild detergent.





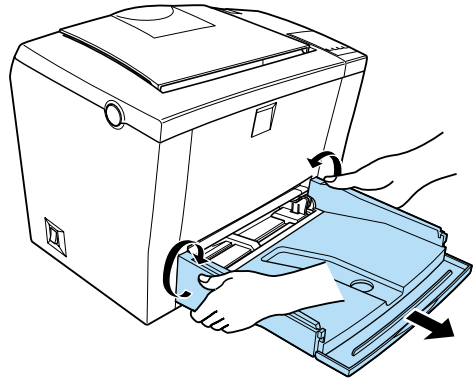
Caution:
Never use alcohol or thinner to clean the printer case; these chemicals can damage the components and the case. Be careful not to get water onto the printer mechanism or any electronic components.

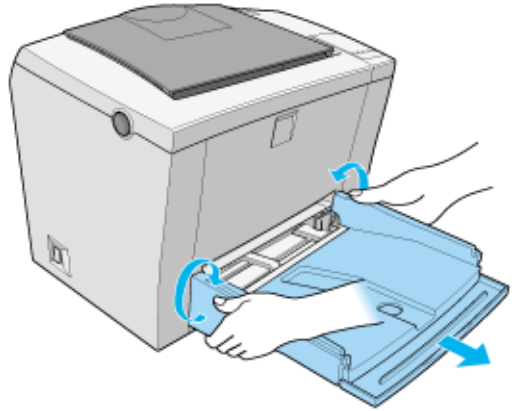
Transporting the Printer

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

1. Turn off the printer.
2. Unplug the power cord from the electrical outlet and then from the printer.
3. Disconnect all interface cables from the printer.
4. Lift off the MP tray cover and remove all paper from the tray.

5. Grasp the base part of the MP tray with both hands, press inward on the edges, and pull it out of the printer.





6. Remove the optional 500-Sheet Lower Paper Cassette Unit, if installed.

7. Replace the printer's protective materials, then repack the printer in its original box.

Caution:
Do not expose the photoconductor unit and the developer cartridge to light any longer than necessary.

Replacing Consumable Products

Your printer uses two consumable components, which are listed below along with their approximate lifetimes.

Developer cartridge (S050010)
Up to 6,000 pages at 5% print ratio on A4 or Letter size paper, depending on the complexity of print jobs.

Photoconductor unit (S051055)
Up to 20,000 pages at 5% print ratio.

You can view the condition of the consumables using the EPSON Status Monitor 3 utility.

Replace the developer cartridge if you notice a decline in print quality. Replace the photoconductor unit only if print quality problems remain after replacement of the developer cartridge.

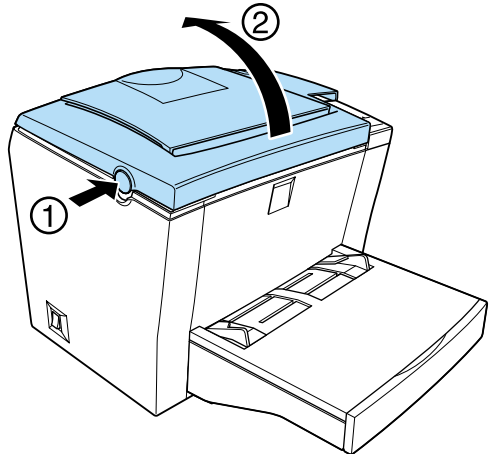
Replacing the developer cartridge

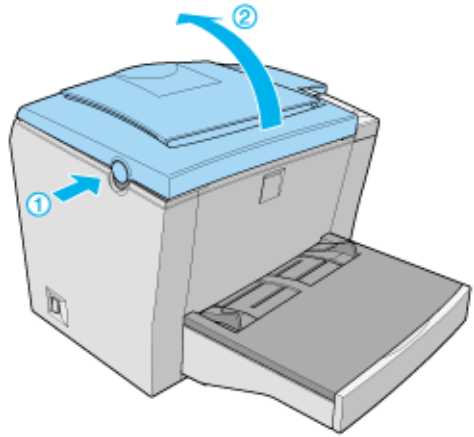
Follow these steps to replace the developer cartridge:

1. Make sure the printer is turned off.

2. Make sure the output tray at the top of the printer is lowered.

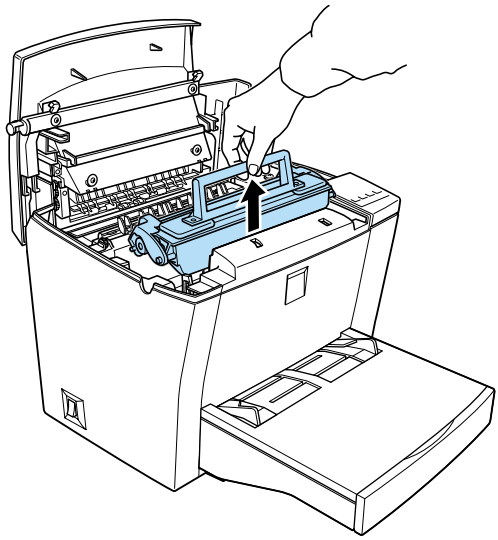
3. Open the printer cover by pressing the latch on the left side of the printer and lifting the cover up all the way.

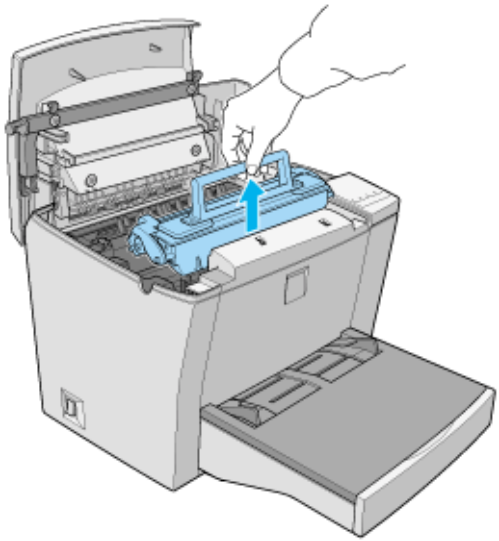




Caution:
You must completely open the printer cover when replacing the developer cartridge; otherwise, you may damage the printer.

4. Hold the cartridge by the handle and pull it straight up and out of the printer.



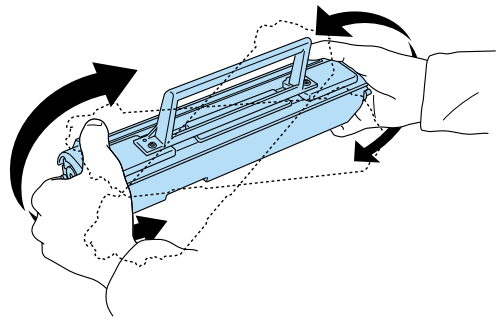


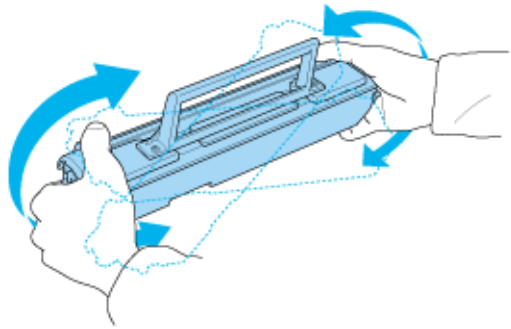
Warning:
Do not touch the fuser, which is marked CAUTION Hot Surface Avoid Contact. *If the printer has been in use, the fuser may be very hot.*

Caution:
Be careful not to spill any remaining toner from the used developer cartridge. If toner is spilled inside the printer, clean it with a clean, dry, lint-free cloth or with a vacuum-cleaning device.

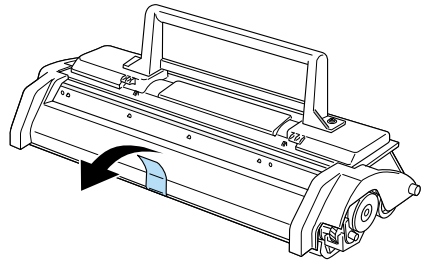
5. Dispose of the used developer cartridge properly.

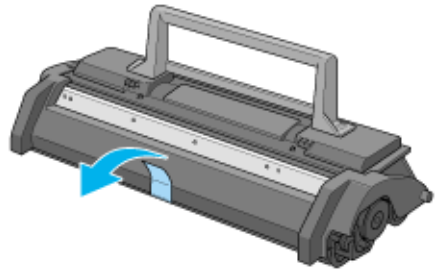
6. Remove the new developer cartridge from its bag. While holding the cartridge horizontally, gently shake it a few times from side to side and then from front to back to distribute the toner evenly.



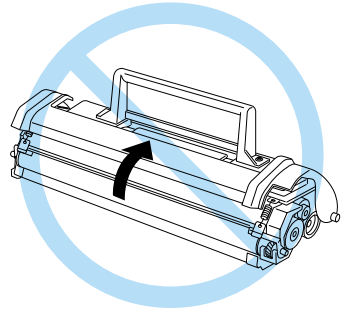


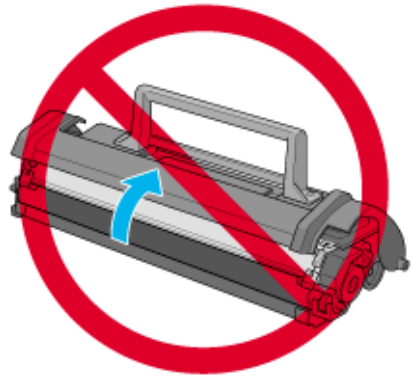
7. Remove the protective tape seal from the developer cartridge.



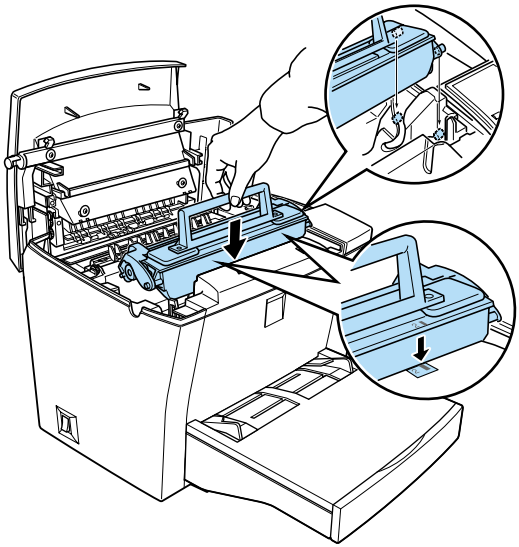


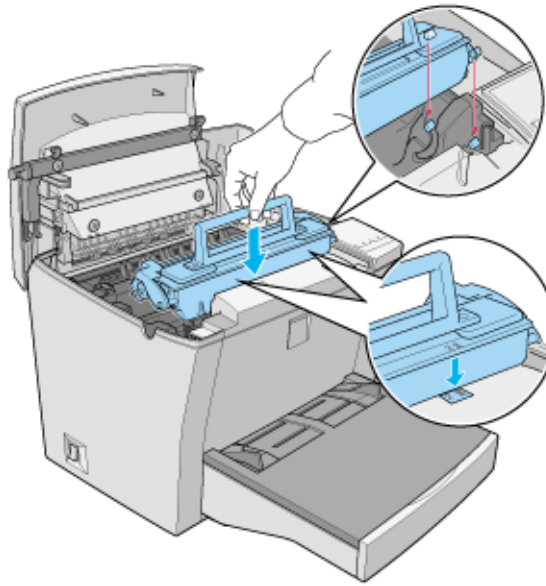
Caution:
Never touch the developing roller under the flap; otherwise, print quality may decline.



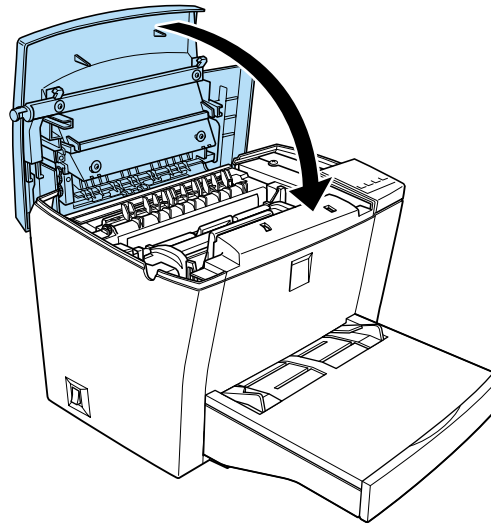


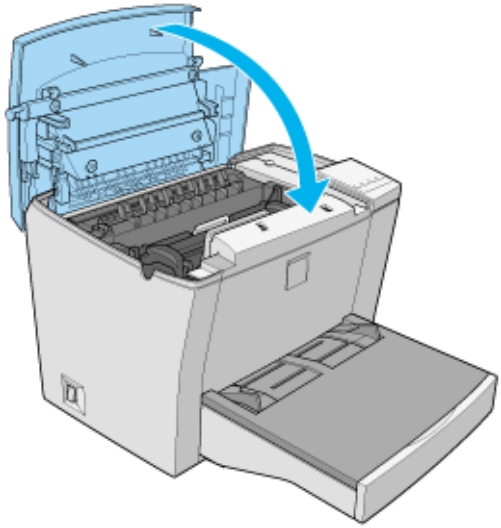
8. Hold the cartridge by its handle and lower it into the printer, making sure that the pins on both sides of the cartridge fit into the grooves inside the printer. Slide the cartridge gently into the opening until it locks into place.





9. Lower the printer cover. Press it gently until it clicks shut.





10. While pressing the On Line and Form Feed buttons simultaneously, turn the printer on. This will reset the toner level counter.

    Note:

    - ❏ *In Windows, you can also reset the toner level counter by clicking the* Toner Level Clear *button in the Printer Setting dialog box located in the Optional Settings tab of the printer driver.*

    - ❏ *In Macintosh, click the* Toner Reset *button in the Printer Setting dialog box.*

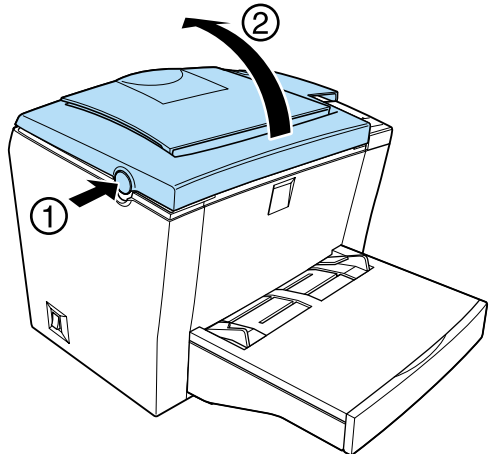
Whenever you replace the developer cartridge, you should clean the paper roller as described in "Cleaning the Printer" on page 7-17.

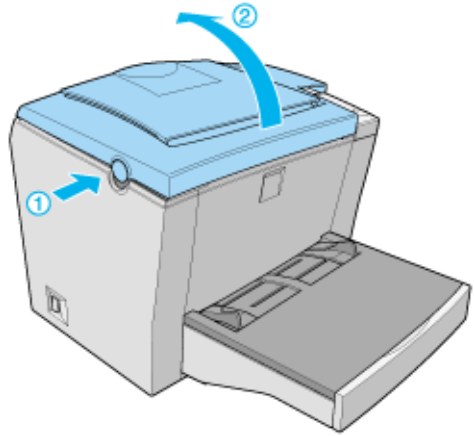
Replacing the photoconductor unit

1. Make sure the printer is turned off.

2. Make sure the output tray at the top of the printer is lowered.

3. Open the printer cover by pressing the latch on the left side of the printer and lifting the cover up all the way.

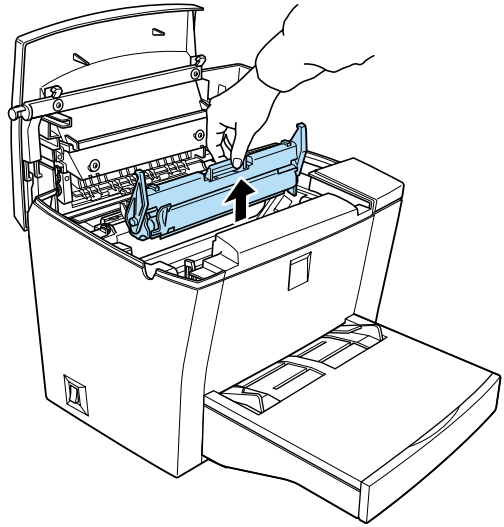


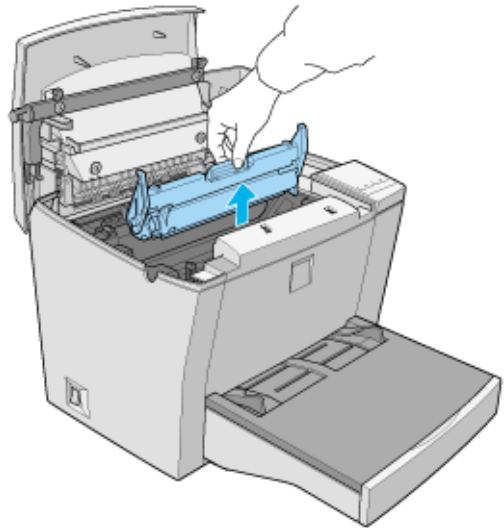


Caution:
You must completely open the printer cover to replace the photoconductor unit; otherwise, you may damage the printer.

4. Remove the developer cartridge.

5. Slide the photoconductor unit gently out of the printer, as shown below.



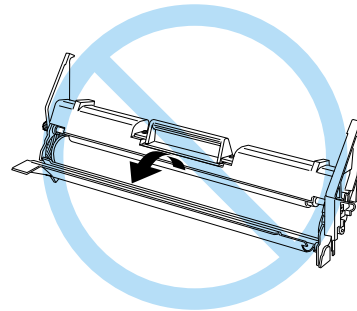


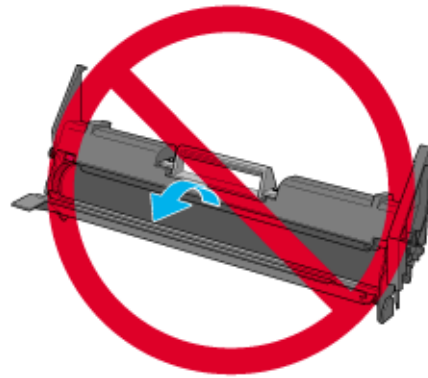
Warning:
Do not touch the fuser, which is marked CAUTION Hot Surface Avoid Contact. *If the printer has been in use, the fuser may be very hot.*

6. Properly dispose of the used photoconductor unit.

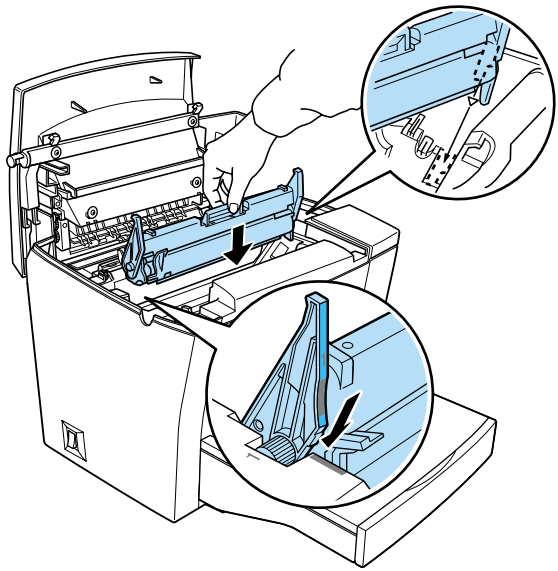
7. Remove the new photoconductor unit from its bag.

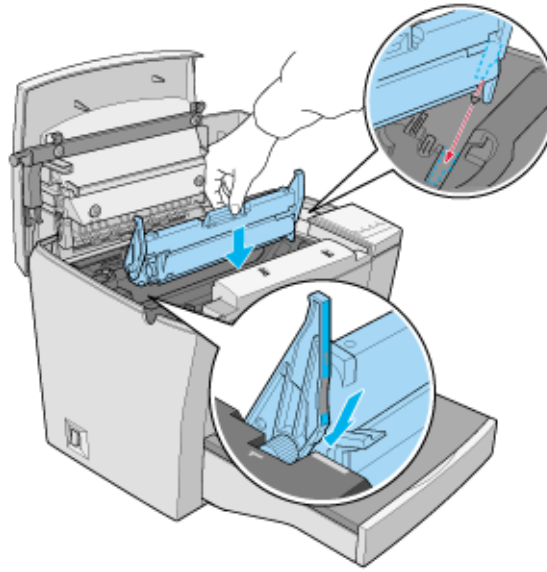
Caution:
Never touch the photoconductor unit's light-sensitive drum; otherwise, print quality may decline.





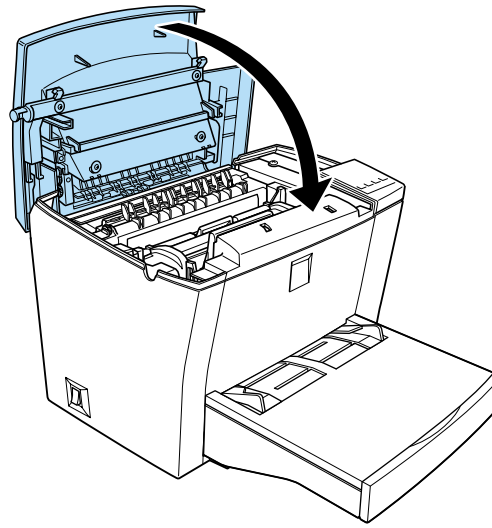
8. Insert the pins on both sides of the new photoconductor unit into the grooves inside the printer. Slide the unit gently into the opening until it locks into place.

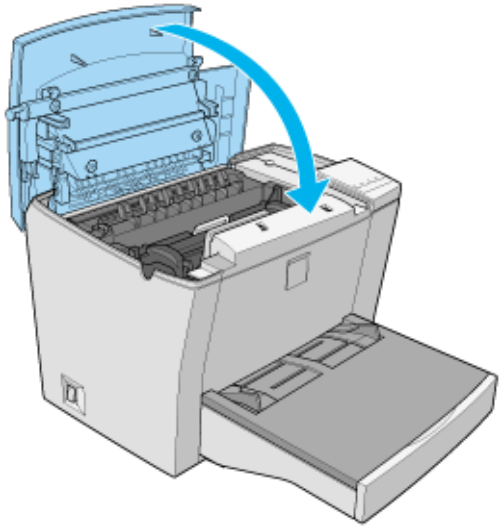




9. Reinstall the developer cartridge.

10. Lower the printer cover. Press it gently until it clicks shut.





11. While pressing the On Line and Continue buttons simultaneously, turn the printer on. This will reset the photoconductor level counter.

Note:

- ❏ *In Windows, you can also reset the photoconductor level counter by clicking the* OPC Level Clear *button in the Printer Setting dialog box located in the Optional Settings tab of the printer driver.*

- ❏ *In Macintosh, click the* Photoconductor Life Reset *button in the Printer Setting dialog box.*

Cleaning the Printer

The printer needs only minimal cleaning. If you notice a decline in print quality, clean the inside of the printer as described in this section.

You should also clean the MP tray and the printer case every few months.

Cleaning the inside of the printer

Fine particles of dust can collect inside the printer. Follow the steps below to clean the inside of the printer and the paper feeder:

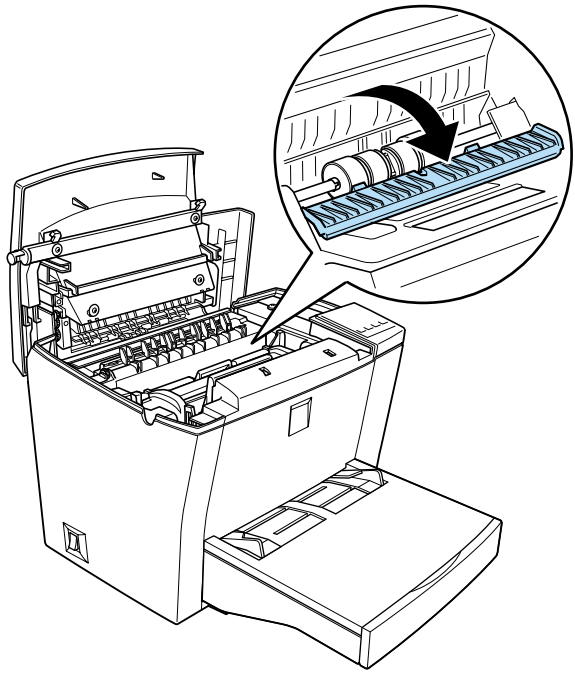
1. Make sure the printer is turned off.

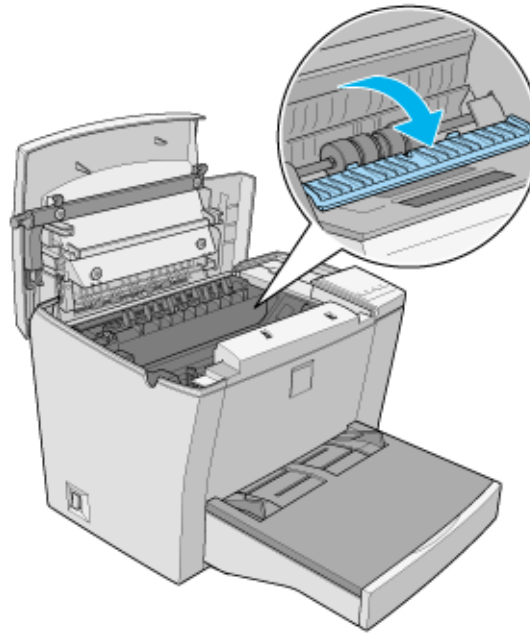
2. Open the printer cover by pressing the latch on the left side of the printer and lifting the cover up all the way.

   Warning:
   Opening the printer exposes the fuser, which is marked CAUTION Hot Surface Avoid Contact. *Be careful not to touch the fuser. If the printer has been in use, the fuser may be very hot.*

3. Remove the developer cartridge and the photoconductor unit as described in "Replacing Consumable Products" on page 7-2.

4. Remove any dirt inside the printer with a clean, dry, lint-free cloth. Do not use compressed air. If you have paper feed problems, clean the paper roller by opening the roller cover and wiping the roller with a clean, dry, lint-free cloth.





5. Reinstall the photoconductor unit, and then the developer cartridge.

6. Lower the printer cover. Press it gently until it clicks shut.

7. Remove all the paper from the MP tray and clean the tray with a clean, dry, lint-free cloth.

Removing spilled toner

If toner spills inside the printer, do not use the printer until you remove all the spilled toner.

If only a small amount of toner is present, carefully wipe out the inside of the printer with a clean, dry, lint-free cloth.

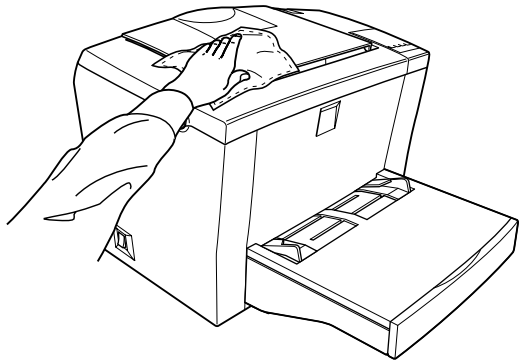
If a large amount of toner is present, use a small vacuum-cleaning device (available from computer supply stores) to remove it. Then carefully wipe with a clean, dry, lint-free cloth.

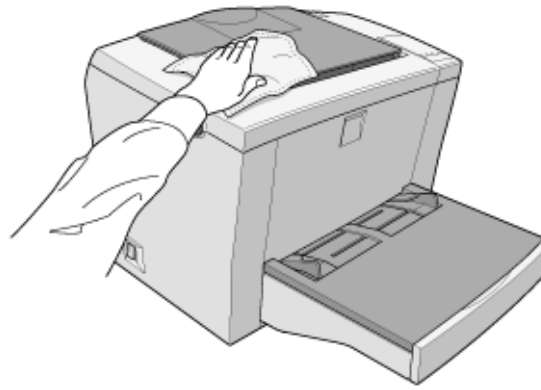
Caution:
Toner and other fine powders can damage some vacuum cleaners. Be sure to read the instructions for your vacuum cleaner before you use it on spilled toner.

Note:
If you spill toner on your clothing, rinse it off with cold water. Do not use hot water as this may cause the toner to leave a permanent stain.

Cleaning the printer case

If the printer's outer case is dirty or dusty, turn off the printer and clean it with a clean, dry, lint-free cloth dampened with a mild detergent.





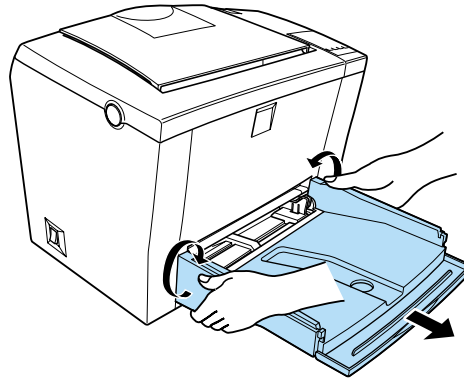
Caution:
Never use alcohol or thinner to clean the printer case; these chemicals can damage the components and the case. Be careful not to get water onto the printer mechanism or any electronic components.

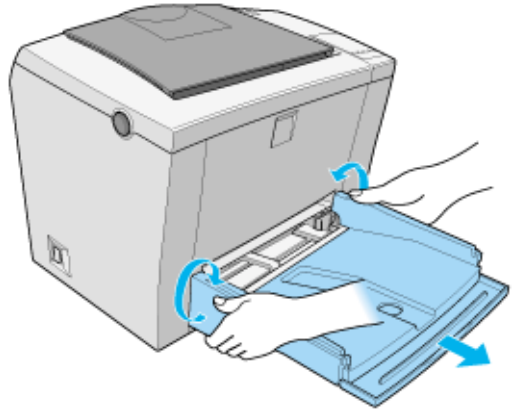
Transporting the Printer

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

1. Turn off the printer.
2. Unplug the power cord from the electrical outlet and then from the printer.
3. Disconnect all interface cables from the printer.
4. Lift off the MP tray cover and remove all paper from the tray.

5. Grasp the base part of the MP tray with both hands, press inward on the edges, and pull it out of the printer.





6. Remove the optional 500-Sheet Lower Paper Cassette Unit, if installed.

7. Replace the printer's protective materials, then repack the printer in its original box.

Caution:
Do not expose the photoconductor unit and the developer cartridge to light any longer than necessary.

Appendix A

Technical Specifications

Paper A-2
Specifications A-2

Printer A-4
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500-Sheet Lower Paper Cassette Unit (C81336*) A-14
Face-up Tray (C81337*) A-14
Developer cartridge (S050010) A-15
Photoconductor unit (S051055) A-15

Paper

Specifications

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

Paper Types: Plain paper, recycled paper, labels, envelopes, transparencies, colored paper, card stock, letterhead

Note:
Use recycled paper under normal temperature and humidity conditions only. Poor-quality paper may reduce print quality, cause paper jams and other problems.

Paper weight:

Plain paper	60 to 90 g/m², 16 to 24 lb
Card stock	90 to 157 g/m², 24 to 42 lb

Paper size:

Paper	A4 (210 × 297 mm) A5 (148 × 210 mm) B5 (182 × 257 mm) Letter (216 × 279 mm, 8.5 × 11 in.) Half Letter (140 × 216 mm, 5.5 × 8.5 in.) Legal (216 × 356 mm, 8.5 × 14 in.) Executive (184 × 267 mm, 7.25 × 10.5 in.) Government Legal (216 × 330 mm, 8.5 × 13 in.) Government Letter (203 × 267 mm, 8 × 10.5 in.) F4 (210 × 330 mm, 8.3 × 13 in.) User Defined Size (76 × 127 mm to 215 × 355mm, 3 × 5 in. to 8.5 × 14 in.)
Envelopes	Monarch (98 × 191 mm, 3.9 × 7.5 in.) Commercial 10 (105 × 241 mm, 4.1 × 9.5 in.) DL (110 × 220 mm, 4.3 × 8.7 in.) C5 (162 × 229 mm, 6.4 × 9 in.) C6 (114 × 162 mm, 4.5 × 6.4 in.) International B5 (176 × 250 mm, 7 × 9.8 in.)

Caution:
Only load paper sizes that are listed above.

Printable area: The area on a page contained within a 4-mm minimum margin on all sides

Printer

General

Printing method:	Laser beam scanning and dry electrophotographic process
Resolution:	1200 × 1200 dpi, 600 × 600 dpi, 300 × 300 dpi
Printing speed:	Up to 10 pages per minute at 600 dpi, or up to 5 pages per minute at 1200 dpi, depending on the font and quantity of data
First print:	Less than 18 seconds with A4 or Letter size paper
Warm-up time:	About 22 seconds at normal temperature
Paper feed:	Automatic
Paper feed alignment:	Center alignment for all sizes
Input paper supply ($75g/m^2$ paper):	Up to 150 sheets in the MP tray Up to 500 sheets in the optional 500-Sheet Lower Paper Cassette Unit Up to 10 envelopes, depending on thickness
Paper output:	Face-down or face-up (optional) selection
Paper output capacity ($75g/m^2$ paper):	Up to 100 sheets for face-down output Up to 20 sheets for face-up output with the optional Face-up Tray
RAM:	16 MB, expandable up to 256 MB

Environmental

Temperature:	Operation:	10 to 35 °C (50 to 95 °F)
	Storage:	0 to 35 °C (32 to 95 °F)
Humidity:	Operation:	15 to 85% RH
	Storage:	30 to 85% RH
Altitude:	Maximum 2,500 meters (8,200 feet)	

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 801-2 IEC 801-3 IEC 801-4 EN 61000-3-2 EN 61000-3-3
Australian model	AS/NZS 3548 class B

Mechanical

Dimensions and weight:	Height:	338 mm (13.3 in.)
	Width:	387 mm (15.2 in.)
	Depth:	475 mm (18.7 in.)
	Weight:	Approx. 7.0 kg (15.4 lb), excluding the developer cartridge and the photoconductor unit
Durability:	5 years or 180,000 sheets, whichever comes first	

Electrical

	110 V model	**230 V model**
Voltage	90 V to 132 V	198 V to 264 V
Rated frequency	50 Hz to 60 Hz ± 3 Hz	50Hz to 60Hz ± 3Hz
Rated current	5.9 A	3.2 A
Power consumption	Less than 690 W	Less than 700 W
Power consumption * in Standby mode	Less than 15 W	Less than 15 W

* No options installed

Caution:
Check the label on the back of the printer for its specified voltage.

Parallel interface

The parallel (IEEE 1284-B compliant) interface connector pin assignments are shown in the table below.

Pin No.	Direction	IEEE 1284-B connector		
		Compatibility	Nibble	ECP
1	IN	nStorbe	HostClk	
2	IN/OUT	DATA1		
3	IN/OUT	DATA2		
4	IN/OUT	DATA3		
5	IN/OUT	DATA4		
6	IN/OUT	DATA5		
7	IN/OUT	DATA6		
8	IN/OUT	DATA7		
9	IN/OUT	DATA8		
10	OUT	nACK	PtrClk	PeriphClk
11	OUT	Busy	PrtBusy	PeriphAck
12	OUT	PError	AckDataReq	nAckReverse
13	OUT	Select	Xflag	
14	IN	nAutoFd	HostBusy	HostAck
15		NC		
16		GND		
17		CG		
18	OUT	PeripheralLogicHigh		
19 - 30		GND		

Pin No.	Direction	IEEE 1284-B connector		
		Compatibility	Nibble	ECP
31	IN	nInit		nReverse Request
32	OUT	nFault	nDataAvail	nPeriphRequest
33		GND		
34		NC		
35	OUT	+5V		
36	IN	nSelectIn	IEEE1284 Active	

Note:
The column heading "Direction" refers to the direction of signal flow into or out of the printer.

nStrobe/HostClk

Compatibility mode: Latch pulse used to read in print data. When low, DATA is valid.

Negotiation phase: Latch pulse used to read in extensibility request values.

Nibble mode: Always high.

ECP mode: Used to transfer data and addresses from the host to the printer with handshaking via PeriphAck (Busy).

DATA1 to DATA8 (bi-directional, but may always be an input if ECP or EPP mode is not supported)

Compatibility mode: Forward channel data

Negotiation phase: Extensibility request value

Nibble mode: Not used

ECP mode: Bi-directional data

nACK/PtrClk/PeriphClk

All modes: DTA8 is the MSB, DATA1 is the LSB.

Compatibility mode: Acknowledgment low pulse in order to indicate that data was transferred from the host.

Negotiation phase: Low signal indicates that IEEE 1284 is supported; set to high to indicate that the Xflag and "data available" flag are valid.

Reverse data transfer phase: In nibble mode, a low signal indicates that the nibble data is valid.

Reverse idle phase: When switched from low to high, generates an interrupt that notifies the host that there is data available.

ECP mode: Used to transfer data from the printer to the host with handshaking via HostAck (nAutoFd).

Busy/PtrBusy/PeriphClk

Compatibility mode: High signal indicates that the printer is not ready to receive data.

Negotiation phase: Reflects the BUSY status of the forward channel.

Reverse data transfer phase: In nibble mode, this signal serves as nibble data bit 3 and then 7.

Reverse idle phase: Reflects the BUSY status of the forward channel.

ECP mode: Used for forward direction flow control. In reverse direction, this signal is used as a ninth data bit that indicates whether the data signals are a command or data.

PError/AckDataReq/nAckReverse

Compatibility mode: High signal indicates that a feed jam occurred in the paper supply section, or that there is no paper in the paper-tray or cassette.

Negotiation phase: High signal indicates whether IEEE 1284 is supported or not. This signal conforms with nDataAvail (nFault).

Reverse data transfer phase: In nibble mode, this signal serves as nibble data bit 2 and then 6.

Reverse idle phase: High until the host requests a data transfer. This signal conforms with nDataAvail (nFault).

ECP mode: Low signal authorizes nReverseRequest. The host looks at this signal in order to determine whether or not it has permission to drive the data signals.

Select/Xflag

Compatibility mode: Always high.

Negotiation phase: Xflag indicates the extensibility flag. Used to respond to the extensibility request value sent from the host.

Reverse data transfer phase: In nibble mode, this signal serves as nibble data bit 1 and then 5.

Reverse idle phase: Same as negotiation phase.

ECP mode: Same as negotiation phase.

nAutoFd/HostBusy/HostAck

Compatibility mode: Not used

Negotiation phase: In order to request 1284 mode, this signal is set low and IEEE 1284active (nSelectln) is set high. This signal is set high when PtrClk (nAck) is set low.

Reverse data transfer phase: In nibble mode, setting this signal low indicates to the printer that the host is ready to receive data. When this signal is subsequently set high, it indicates that the host received the data.

Reverse idle phase: This signal is set high in response to a PtrClk (nAck) low pulse in order to return to the reverse data phase. If this signal is set high at the same time that IEEE 1284active (nSelectln) is set low, the IEEE 1284 idle phase is aborted and the interface returns to compatibility mode.

ECP mode: Used for reverse direction flow control. Also used for handshaking via PeriphClk (nAck).

NC

Not used

PeripheralLogicHigh

Parallel B: NC

Parallel C: Pull up to +5V with 3.9 KΩ

nInit/nReverseRequest

Compatibility mode: When a low signal is detected, the printer is deemed to be BUSY until the low signal is released.

Negotiation phase: Always high.

Reverse data transfer phase: Always high.

ECP mode: Low when switching to reverse direction. The peripheral device has permission to drive the data signals only when this signal is low and 1284 active is high.

nFault/nDataAvail/nPeriphRequest

Compatibility mode: Low signal indicates that an error occurred.

Negotiation phase: This signal is set high in order to authorize 1284 compatibility. In nibble mode, after the host sets HostBusy (nAutoFd) high, this signal is set low in order to indicate that the transmission data is ready.

Reverse data transfer phase: This signal is set low in order to indicate to a nibble mode host that the transmission data is ready. This signal serves as nibble data bit 0 and then 4.

Reverse idle phase: Indicates whether or not the data is valid.

ECP mode: This signal is set low to request communications with the host. Valid in both forward and reverse directions.

nSelectIn/IEEE1284active

Compatibility mode: Always low.

Negotiation phase: This signal is set high at the same time that HostBusy is low in order to request 1284 mode.

Reverse data transfer phase: This signal is set high to indicate that the bus direction is from the printer to the host. This signal is set low to terminate 1284 mode, setting the bus direction from the host to the printer.

Reverse idle phase: Same as reverse data transfer phase.

ECP mode: Always high. This signal is set low to terminate ECP mode and return to compatibility mode.

GND

Twisted pair return signal

CG

Connected to the printer chassis. This signal and GND are connected.

+5V

Pull up to +5V with 1 kΩ

USB interface

Windows USB Plug and Play (PnP) compliant.

Note:
Only Macintosh and PC systems equipped with a USB connector and running Mac OS 8.1 (or later) and Windows 98 respectively support the USB interface.

Options and Consumables

Note:
The asterisk (✻) in product numbers is a substitute for the last digit of the product number concerned, which varies by country.

500-Sheet Lower Paper Cassette Unit (C81336)*

Paper size:	A4 or Letter, depending on the country of purchase
Paper weight:	60 to 90 g/m^2 (16 to 24 lb)
Paper feed:	Automatic feed delivery system Tray capacity of up to 500 sheets (75 g/m^2 or 20 lb paper)
Paper feed speed:	For the first sheet, 19 seconds or less; subsequent sheets, 10 pages per minute
Paper types:	Plain paper, such as copier paper, and recycled paper
Power supply:	5Vdc supplied by the printer

Dimensions and weight:

Height	124.5 mm (4.9 in.)
Width	380 mm (15 in.)
Depth	460 mm (18.1 in.) including the tray
Weight	4.0 kg (8.8 lb) including the tray

Face-up Tray (C81337)*

Dimensions and weight (including printer):

Height	420 mm (16.5 in.)
Width	387 mm (15.2 in.)
Depth	595 mm (23.4 in.)
Weight	7.5 kg (16.5 lb)

Paper output capacity: 20 sheets (75 g/m^2 or 20 lb paper)

Developer cartridge (S050010)

Storage temperature:	0 to 35 °C (32 to 95 °F)
Storage humidity:	30 to 85% RH
Shelf life:	18 months after production
Life:	Up to 6,000 pages under the following conditions: Letter or A4 size paper, continuous printing, 5% print ratio

Photoconductor unit (S051055)

Storage temperature:	0 to 35 °C (32 to 95 °F)
Storage humidity:	30 to 85% RH
Shelf life:	18 months after production
Life:	Up to 20,000 pages under the following conditions: Letter or A4 size paper, continuous printing, 5% print ratio

The number of pages you can print with a developer cartridge or a photoconductor unit varies depending on the type of printing. If you print a few pages at a time or print dense text exceeding the 5% print ratio, the cartridge and/or unit may print fewer pages. The 5% print ratio is equivalent to printing double-spaced standard text.

Appendix B

Symbol Sets

Introduction to Symbol Sets B-2

In LJ4 Emulation/EPSON GL2 Mode. B-3
International character sets for ISO B-25

In ESC/P2 or FX Modes B-26
International character sets B-33
Characters available with the ESC (^ command B-34

In I239X Emulation Mode. B-34

In EPSON GL/2 Mode B-34

Introduction to Symbol Sets

Your printer can access a variety of symbol sets. Many of these symbol sets differ only in the international characters specific to each language.

Note:
Since most software handle fonts and symbols automatically, you would probably never need to adjust the printer's settings. However, if you are writing your own printer control programs, or if you are using older software that cannot control fonts, refer to the following sections for symbol set details.

When you are considering which font to use, you should also consider which symbol set to combine with the font. Available symbol sets vary depending on which emulation mode you use and which font you choose.

In LJ4 Emulation/EPSON GL2 Mode

The following table lists the symbol sets available in LJ4 emulation mode.
A table of the characters for each set is included later in this chapter.

Symbol set name	Symbol set ID for ESC (	Available typefaces (see next page)
Roman-8* (includes another 19 sets)	8U	76 typefaces + bitmap**
Roman Extension	0E	bitmap
ECM94-1	0N	76 typefaces + bitmap
Legal	1U	76 typefaces + bitmap
8859-2 ISO	2N	76 typefaces + bitmap
8859-15 ISO	9N	76 typefaces + bitmap
PsMath	5M	76 typefaces
8859-9 ISO	5N	76 typefaces + bitmap
WiTurkish	5T	76 typefaces
MsPublishing	6J	76 typefaces
VeMath	6M	76 typefaces
DeskTop	7J	76 typefaces
Math-8	8M	76 typefaces
WiE.Europe	9E	76 typefaces
PcTk437	9T	76 typefaces
PcEur858	13U	76 typefaces + bitmap
Windows	9U	76 typefaces
PsText	10J	76 typefaces
IBM-US	10U	76 typefaces + bitmap
IBM-DN	11U	76 typefaces + bitmap
McText	12J	76 typefaces
PcMultilingual	12U	76 typefaces + bitmap
VeInternational	13J	76 typefaces
VeUS	14J	76 typefaces
PiFont	15U	76 typefaces
PcE.Europe	17U	76 typefaces
Symbol	19M	Symbol Set SWA, Symbol Set SWM
WiAnsi	19U	76 typefaces
Wingdings	579L	More WingBats SWM
OCR A	0O	OCR A
OCR B	1O	OCR B
OCR B Extension	3Q	OCR B
Code 39	0Y	Code 39 (2 types)
EAN/UPC	8Y	EAN/UPC (2 types)
Roman-9	4U	76 typefaces + bitmap

Symbol set name	Symbol set ID for ESC (	Available typefaces (see next page)
8859-10 ISO	6N	76 typefaces + bitmap
Pc1004	9J	76 typefaces
WiBALT	19L	76 typefaces
PcBlt775	26U	76 typefaces

* The other 19 sets are the following: Norweg1, Italian, Swedish, ANSI ASCII, UK, French, German, Spanish, Norweg 2, French 2, HP German, JIS ASCII, HP Spanish, Chinese, IRV, Swedis 2, Portuguese, IBM Portuguese, and IBM Spanish. These are partial variations of the Roman-8 set.

** "Bitmap" means the "Line Printer" typeface.

The 76 typefaces refer to those shown below:

Flareserif 821 SWC
Incised 901 SWC
Clarendon Condensed SWC
Ribbon 131 SWC
Original Garamond SWC
Audrey Two SWC
Zapf Humanist 601 SWC
Swiss 742 Condensed SWC
Swiss 721 SWM
Dutch 801 SWM
Courier SWC
Letter Gothic SWC
Dutch 801 SWC
Swiss 742 SWC
Swiss 721 SWA
Dutch 801 SWA
Courier SWA
Zapf Calligraphic 801 SWA
ITC Avant Garde SWA
ITC Bookman SWA
Swiss 721 Narrow SWA
ITC Zapf Chancery SWA Italic
Century Schoolbook SWA

Roman-8 (8U)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				0	@	P	`	p				¯	â	Å	Á	Þ
1			!	1	A	Q	a	q			À	Ý	ê	î	Ã	þ
2			"	2	B	R	b	r			Â	ý	ô	Ø	ã	·
3			#	3	C	S	c	s			È	°	û	Æ	Đ	µ
4			$	4	D	T	d	t			Ê	Ç	á	å	ð	¶
5			%	5	E	U	e	u			Ë	ç	é	í	Í	¾
6			&	6	F	V	f	v			Î	Ñ	ó	ø	Ì	—
7			'	7	G	W	g	w			Ï	ñ	ú	æ	Ó	¼
8			(	8	H	X	h	x			´	¡	à	Ä	Ò	½
9			)	9	I	Y	i	y			`	¿	è	ì	Õ	ª
A			*	:	J	Z	j	z			^	¤	ò	Ö	õ	º
B			+	;	K	[	k	{			¨	£	ù	Ü	Š	«
C			,	<	L	\	l	|		~	¥	ä	É	š	■
D			-	=	M	]	m	}			Ù	§	ë	ï	Ú	»
E			.	>	N	^	n	~			Û	ƒ	ö	ß	Ÿ	±
F			/	?	O	_	o				£	¢	ü	Ô	ÿ	

Roman Extension (0E)

CODE	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				¯	â	Å	Á	þ								
1			À	Ý	ê	î	Ã	þ								
2			Â	ý	ô	Ø	ã	·								
3			È	°	û	Æ	Đ	µ								
4			Ê	Ç	á	å	ð	¶								
5			Ë	ç	é	í	Í	¾								
6			Î	Ñ	ó	ø	Ì	—								
7			Ï	ñ	ú	æ	Ó	¼								
8			´	¡	à	Ä	Ò	½								
9			`	¿	è	ì	Õ	ª								
A			^	¤	ò	Ö	õ	º								
B			¨	£	ù	Ü	Š	«								
C			~	¥	ä	É	š	■								
D			Ù	§	ë	ï	Ú	»								
E			Û	ƒ	ö	ß	Ÿ	±								
F			£	¢	ü	Ô	ÿ									

ECM94-1 (0N)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				0	@	P	`	p				°	À	Ð	à	ð
1			!	1	A	Q	a	q			¡	±	Á	Ñ	á	ñ
2			"	2	B	R	b	r			¢	²	Â	Ò	â	ò
3			#	3	C	S	c	s			£	³	Ã	Ó	ã	ó
4			$	4	D	T	d	t			¤	´	Ä	Ô	ä	ô
5			%	5	E	U	e	u			¥	µ	Å	Õ	å	õ
6			&	6	F	V	f	v			¦	¶	Æ	Ö	æ	ö
7			'	7	G	W	g	w			§	·	Ç	×	ç	÷
8			(	8	H	X	h	x			¨	¸	È	Ø	è	ø
9			)	9	I	Y	i	y			©	¹	É	Ù	é	ù
A			*	:	J	Z	j	z			ª	º	Ê	Ú	ê	ú
B			+	;	K	[	k	{			«	»	Ë	Û	ë	û
C			,	<	L	\	l	|			¬	¼	Ì	Ü	ì	ü
D			-	=	M	]	m	}			-	½	Í	Ý	í	ý
E			.	>	N	^	n	~			®	¾	Î	Þ	î	þ
F			/	?	O	_	o	▩			¯	¿	Ï	ß	ï	ÿ

Legal (1U)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				0	@	P	°	p								
1			!	1	A	Q	a	q								
2			"	2	B	R	b	r								
3			#	3	C	S	c	s								
4			$	4	D	T	d	t								
5			%	5	E	U	e	u								
6			&	6	F	V	f	v								
7			'	7	G	W	g	w								
8			(	8	H	X	h	x								
9			)	9	I	Y	i	y								
A			*	:	J	Z	j	z								
B			+	;	K	[	k	§								
C			,	=	L	®	l	¶								
D			-	=	M	]	m	†								
E			.	¢	N	©	n	™								
F			/	?	O	_	o	▩								

8859-2 ISO (2N)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				0	@	P	`	p				°	Ŕ	Đ	ŕ	đ
1			!	1	A	Q	a	q			Ą	ą	Á	Ń	á	ń
2			"	2	B	R	b	r			˘	˛	Â	Ň	â	ň
3			#	3	C	S	c	s			Ł	ł	Ă	Ó	ă	ó
4			$	4	D	T	d	t			¤	´	Ä	Ô	ä	ô
5			%	5	E	U	e	u			Ľ	ľ	Ĺ	Ő	Í	ő
6			&	6	F	V	f	v			Ś	ś	Ć	Ö	ć	ö
7			'	7	G	W	g	w			§	ˇ	Ç	×	ç	÷
8			(	8	H	X	h	x			¨	¸	Č	Ř	č	ř
9			)	9	I	Y	i	y			Š	š	É	Ů	é	ů
A			*	:	J	Z	j	z			Ş	ş	Ę	Ú	ę	ú
B			+	;	K	[	k	{			Ť	ť	Ë	Ű	ë	ű
C			,	<	L	\	l	|		Ź	ź	Ě	Ü	ě	ü
D			-	=	M	]	m	}			-	˝	Í	Ý	í	ý
E			.	>	N	^	n	~			Ž	ž	Î	Ţ	î	ţ
F			/	?	O	_	o	▒			Ż	ż	Ď	ß	ď	˙

8859-15 ISO (9N)

CODE	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				0	@	P	`	p				°	À	Ð	à	ð
1			!	1	A	Q	a	q			¡	±	Á	Ñ	á	ñ
2			"	2	B	R	b	r			¢	²	Â	Ò	â	ò
3			#	3	C	S	c	s			£	³	Ã	Ó	ã	ó
4			$	4	D	T	d	t			€	Ž	Ä	Ô	ä	ô
5			%	5	E	U	e	u			¥	µ	Å	Õ	å	õ
6			&	6	F	V	f	v			Š	¶	Æ	Ö	æ	ö
7			'	7	G	W	g	w			§	·	Ç	×	ç	÷
8			(	8	H	X	h	x			š	ž	È	Ø	è	ø
9			)	9	I	Y	i	y			©	¹	É	Ù	é	ù
A			*	:	J	Z	j	z			ª	º	Ê	Ú	ê	ú
B			+	;	K	[	k	{			«	»	Ë	Û	ë	û
C			,	<	L	\	l	|		¬	Œ	Ì	Ü	ì	ü
D			-	=	M	]	m	}			-	œ	Í	Ý	í	ý
E			.	>	N	^	n	~			®	Ÿ	Î	Þ	î	þ
F			/	?	O	_	o	▒			¯	¿	Ï	ß	ï	ÿ

PsMath (5M)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				0	≅	Π	‾	π				°	ℵ	∠	◇	
1			!	1	A	Θ	α	θ			ϒ	±	ℑ	∇	⟨	⟩
2			∀	2	B	P	β	ρ			′	″	ℜ	®	®	∫
3			#	3	X	Σ	χ	σ			≤	≥	℘	©	©	⌠
4			∃	4	Δ	T	δ	τ			⁄	×	⊗	™	™	⎮
5			%	5	E	Υ	ε	υ			∞	∝	⊕	∏	∑	⌡
6			&	6	Φ	ς	φ	ϖ			ƒ	∂	∅	✓	⎡	⎤
7			∍	7	Γ	Ω	γ	ω			♣	•	∩	·	⎢	⎥
8			(	8	H	Ξ	η	ξ			♦	÷	∪	¬	⎣	⎦
9			)	9	I	Ψ	ι	ψ			♥	≠	⊃	∧	⎡	⎤
A			*	:	ϑ	Z	φ	ζ			♠	≡	⊇	∨	⎢	⎥
B			+	;	K	[	κ	{			↔	≈	⊄	⇔	⎣	⎦
C			,	<	Λ	∴	λ	|			←	…	⊂	⇐	⎡	⎤
D			−	=	M	]	μ	}			↑	|	⊆	⇑	⎨	⎬
E			.	>	N	⊥	ν	~			→	—	∈	⇒	⎩	⎭
F			/	?	O	_	ο				↓	↵	∉	⇓	⎪	

8859-9 ISO (5N)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				0	@	P	`	p				°	À	Ğ	à	ğ
1			!	1	A	Q	a	q			¡	±	Á	Ñ	á	ñ
2			"	2	B	R	b	r			¢	²	Â	Ò	â	ò
3			#	3	C	S	c	s			£	³	Ã	Ó	ã	ó
4			$	4	D	T	d	t			¤	´	Ä	Ô	ä	ô
5			%	5	E	U	e	u			¥	µ	Å	Õ	å	õ
6			&	6	F	V	f	v			¦	¶	Æ	Ö	æ	ö
7			'	7	G	W	g	w			§	·	Ç	×	ç	÷
8			(	8	H	X	h	x			¨	¸	È	Ø	è	ø
9			)	9	I	Y	i	y			©	¹	É	Ù	é	ù
A			*	:	J	Z	j	z			ª	º	Ê	Ú	ê	ú
B			+	;	K	[	k	{			«	»	Ë	Û	ë	û
C			,	<	L	\	l	|		¬	¼	Ì	Ü	ì	ü
D			-	=	M	]	m	}			-	½	Í	İ	í	ı
E			.	>	N	^	n	~			®	¾	Î	Ş	î	ş
F			/	?	O	_	o	▩			¯	¿	Ï	ß	ï	ÿ

WiTurkish (5T)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				0	@	P	`	p				°	À	Ğ	à	ğ
1			!	1	A	Q	a	q		`	¡	±	Á	Ñ	á	ñ
2			"	2	B	R	b	r	´	'	¢	2	Â	Ò	â	ò
3			#	3	C	S	c	s	*f*	"	£	3	Ã	Ó	ã	ó
4			$	4	D	T	d	t	„	"	¤	´	Ä	Ô	ä	ô
5			%	5	E	U	e	u	…	•	¥	*µ*	Å	Õ	å	õ
6			&	6	F	V	f	v	†	–	¦	¶	Æ	Ö	æ	ö
7			'	7	G	W	g	w	‡	—	§	·	Ç	×	ç	÷
8			(	8	H	X	h	x	ˆ	˜	¨	¸	È	Ø	è	ø
9			)	9	I	Y	i	y	‰	™	©	1	É	Ù	é	ù
A			*	:	J	Z	j	z	Š	š	ª	º	Ê	Ú	ê	ú
B			+	;	K	[	k	{	‹	›	«	»	Ë	Û	ë	û
C			,	<	L	\	l	|	Œ	œ	¬	¼	Ì	Ü	ì	ü
D			-	=	M	]	m	}			-	½	Í	İ	í	ı
E			.	>	N	^	n	~			®	¾	Î	Ş	î	ş
F			/	?	O	_	o			Ÿ	¯	¿	Ï	ß	ï	ÿ

MsPublishing (6J)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0					2		'					°			Ω	
1			1								'	•	`	`		
2			"			Ŗ					"	•	´	´		
3			3			Š	%	š			^	•	ˆ	ˆ		
4			4			™					~	○	¯	˜		
5			5									○	¯	¯		ı
6			7									○	˘	˘	IJ	ij
7			'									▪	˙	˙	Ŀ	ŀ
8			9									▪	¨	¨	Ł	ł
9			0			Ÿ					fi	■				
A			8			Ž		ž			fl	□	°	°		
B			†								ff	□				
C			'	"			ℓ				ffi	□	¸	¸		
D			–	‡	—						ffl	‰	˝	˝		
E			…		–	6		‘		Pt	‹	◆	˛	˛		
F			/		Œ	=	œ			*f*	›	◇		ˇ	ˈn	

VeMath (6M)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				0	≅	Π	¯	π			◇	®	≤	↓	|	∏
1			!	1	A	Θ	α	θ			✓	⊃	◆	←	·	™
2			∀	2	B	P	β	ρ			⌊	⊇	≥	®	∠	⇐
3			#	3	X	Σ	χ	σ			⌈	⌠	∂	″	⌡	⇔
4			∃	4	Δ	T	δ	τ			|		ℵ	f		∨
5			%	5	E	Y	ε	υ			⌊	♣	·	ℑ	{	∑
6			&	6	Φ	ς	ϕ	ϖ			⌈	⊕	ℜ	©	⌠	™
7			ə	7	Γ	Ω	γ	ω			|	⊗	℘	±	⟩	⌋
8			(	8	H	Ξ	η	ξ			⇑	⊆	∞	→		⌋
9			)	9	I	Ψ	ι	ψ			⇒	∪	♠	↑	¬	∅
A			*	:	∂	Z	φ	ζ			⇓	—	∝	≠	∇	∩
B			+	;	K	[	κ	{		↵	⊄	…	•	≡	⌠	∈
C			,	<	Λ	∴	λ	|		→	⊂	|	⁄	°	|	©
D			−	=	M	]	μ	}		␣	⌡	∧	♥	↔	⌉	∉
E			.	>	N	⊥	ν	~		•	|	↵	×	⌉	⌡	⌉
F			/	?	O	_	o			□	{	≈	ϒ	∫	÷	⟨

DeskTop (7J)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				0	@	P	`	p				‘‘	—	‹	a	´
1			!	1	A	Q	a	q			¶	’’	±	›	o	`
2			"	2	B	R	b	r			§	μ	×	«	æ	^
3			#	3	C	S	c	s			†	‰	÷	»	Æ	¨
4			$	4	D	T	d	t			‡	•	°	‚	ð	ˆ
5			%	5	E	U	e	u			©	●	‘	„	Đ	ˇ
6			&	6	F	V	f	v			®	○	’	·	ij	˘
7			’	7	G	W	g	w			™	○	¼	¡	IJ	˝
8			(	8	H	X	h	x			%	■	½	¿	ł	°
9			)	9	I	Y	i	y			¢	■	¾	Pt	Ł	˛
A			*	:	J	Z	j	z			–	▫	¹	ℓ	œ	¯
B			+	;	K	[	k	{			—	□	²	£	Œ	¸
C			,	<	L	\	l	|			…	'	³	¥	ø	˛
D			-	=	M	]	m	}			fi	¬	⁄	¤	Ø	˙
E			.	>	N	^	n	~			fl	¦		f	þ	ı
F			/	?	O	_	o	▩				═		ß	Þ	

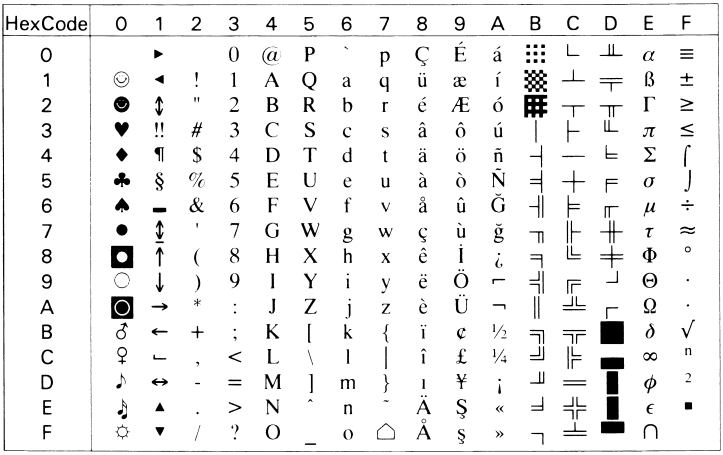
Math-8 (8M)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				0	∴	Π	∵	π				¯	⊕	Å	⌈	⌉
1			✓	1	A	P	α	ρ			↑	∀	⊙	⊣	⌊	⌋
2			″	2	B	Σ	β	σ			→	∃	⊗	⊢	⌈	⌉
3			°	3	Γ	T	γ	τ			↓	⊤	⊖	⊩	⌇	⌇
4			∞	4	Δ	ϒ	δ	υ			←	⊥	⊘	ɜ	⌊	⌋
5			÷	5	E	Φ	ϵ	φ			⇑	∪	∧	∫	⌠	⎯
6			∝	6	Z	X	ζ	χ			⇒	∩	∨	∮	⌽	⎯
7			′	7	H	Ψ	η	ψ			⇓	∈	⊻	∠	⌡	⌡
8			(	8	Θ	Ω	θ	ω			⇐	∋	¬	∅	⟨	
9			)	9	I	∇	ι	ϑ			↕	∉	○	ℵ	‖	⟩
A			×	e	K	∂	κ	φ			↔	⊂	·	ב	⌿	⟍
B			+	ε	Λ	ζ	λ	ϖ			⇕	⊃	•	ג	⌿	⟨
C			,	<	M	≤	μ	≃			⇔	⊄	●	ℭ	⎯	⟨
D			−	=	N	≠	ν	≡			⇄	⊅	○	ℑ	=	∓
E			.	>	Ξ	≥	ξ	≢			⇆	⊆	†	ℜ	*	±
F			/	≈	O	_	o	▩				⊇	‡	℘	≅	

WiE.Europe (9E)

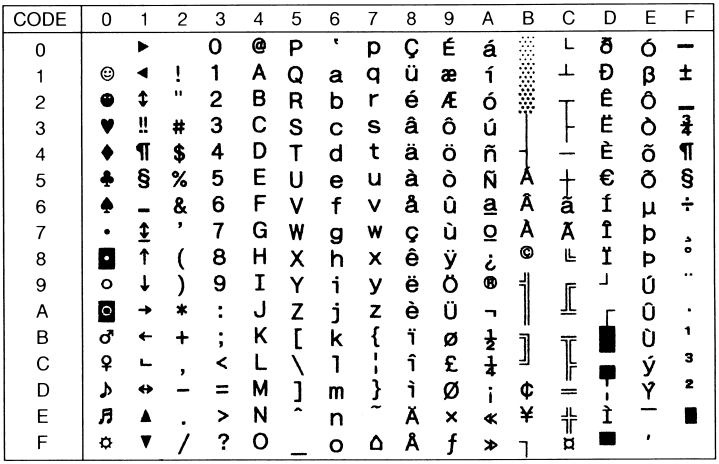
HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				0	@	P	`	p				°	Ŕ	Đ	ŕ	đ
1			!	1	A	Q	a	q		˛	ˇ	±	Á	Ń	á	ń
2			"	2	B	R	b	r	˛	˛	˘	˛	Â	Ň	â	ň
3			#	3	C	S	c	s		“	Ł	ł	Ă	Ó	ă	ó
4			$	4	D	T	d	t	„	”	¤	´	Ä	Ô	ä	ô
5			%	5	E	U	e	u	…	•	Ą	µ	Ĺ	Ő	Í	ő
6			&	6	F	V	f	v	†	–	¦	¶	Ć	Ö	ć	ö
7			'	7	G	W	g	w	‡	—	§	·	Ç	×	ç	÷
8			(	8	H	X	h	x			¨	¸	Č	Ř	č	ř
9			)	9	I	Y	i	y	‰	™	©	ą	É	Ů	é	ů
A			*	:	J	Z	j	z	Š	š	Ş	ş	Ę	Ú	ę	ú
B			+	;	K	[	k	{	‹	›	«	»	Ë	Ű	ë	ű
C			,	<	L	\	l	|	Ś	ś	¬	Ľ	Ě	Ü	ě	ü
D			-	=	M	]	m	}	Ť	ť	-	˝	Í	Ý	í	ý
E			.	>	N	^	n	~	Ž	ž	®	ľ	Î	Ţ	î	ţ
F			/	?	O	_	o	▩	Ź	ź	Ż	ż	Ď	ß	ď	˙

PcTk437 (9T)



HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0		►		0	@	P	`	p	Ç	É	á	▒	└	╨	α	≡
1	☺	◄	!	1	A	Q	a	q	ü	æ	í	▒	┴	╤	ß	±
2	☻	↕	"	2	B	R	b	r	é	Æ	ó	▓	┬	╥	Γ	≥
3	♥	‼	#	3	C	S	c	s	â	ô	ú	│	├	╙	π	≤
4	♦	¶	$	4	D	T	d	t	ä	ö	ñ	┤	─	╘	Σ	⌠
5	♣	§	%	5	E	U	e	u	à	ò	Ñ	╡	┼	╒	σ	⌡
6	♠	▬	&	6	F	V	f	v	å	û	Ğ	╢	╞	╓	μ	÷
7	•	↨	'	7	G	W	g	w	ç	ù	ğ	╖	╟	╫	τ	≈
8	◘	↑	(	8	H	X	h	x	ê	İ	¿	╕	╚	╪	Φ	°
9	○	↓	)	9	I	Y	i	y	ë	Ö	⌐	╣	╔	┘	Θ	·
A	◙	→	*	:	J	Z	j	z	è	Ü	¬	║	╩	┌	Ω	·
B	♂	←	+	;	K	[	k	{	ï	¢	½	╗	╦	█	δ	√
C	♀	∟	,	<	L	\	l	|	î	£	¼	╝	╠	▄	∞	n
D	♪	↔	-	=	M	]	m	}	ì	¥	¡	╜	═	▌	φ	2
E	♫	▲	.	>	N	^	n	~	Ä	Ş	«	╛	╬	▐	ε	■
F	☼	▼	/	?	O	_	o	⌂	Å	ş	»	┐	╧	▀	∩	

PcEur858



CODE	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0		►		0	@	P	‘	p	Ç	É	á	▒	└	ð	Ó	―
1	☺	◄	!	1	A	Q	a	q	ü	æ	í	▒	┴	Ð	ß	±
2	☻	↕	"	2	B	R	b	r	é	Æ	ó	▓	┬	Ê	Ô	‗
3	♥	‼	#	3	C	S	c	s	â	ô	ú	│	├	Ë	Ò	¾
4	♦	¶	$	4	D	T	d	t	ä	ö	ñ	┤	─	È	õ	¶
5	♣	§	%	5	E	U	e	u	à	ò	Ñ	Á	┼	€	Õ	§
6	♠	▬	&	6	F	V	f	v	å	û	ª	Â	ã	Í	µ	÷
7	•	↨	’	7	G	W	g	w	ç	ù	º	À	Ã	Î	þ	¸
8	◘	↑	(	8	H	X	h	x	ê	ÿ	¿	©	╚	Ï	Þ	°
9	o	↓	)	9	I	Y	i	y	ë	Ö	®	╣	╔	┘	Ú	¨
A	◙	→	*	:	J	Z	j	z	è	Ü	¬	║	╩	┌	Û	·
B	♂	←	+	;	K	[	k	{	ï	ø	½	╗	╦	█	Ù	¹
C	♀	∟	,	<	L	\	l	¦	î	£	¼	╝	╠	▄	ý	³
D	♪	↔	–	=	M	]	m	}	ì	Ø	¡	¢	═	¦	Ý	²
E	♫	▲	.	>	N	^	n	~	Ä	×	«	¥	╬	Ì	¯	■
F	☼	▼	/	?	O	_	o	⌂	Å	ƒ	»	┐	¤	■	´	

Windows (9U)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				0	@	P	`	p				°	À	Ð	à	ð
1			!	1	A	Q	a	q		‘	¡	±	Á	Ñ	á	ñ
2			"	2	B	R	b	r		’	¢	²	Â	Ò	â	ò
3			#	3	C	S	c	s			£	³	Ã	Ó	ã	ó
4			$	4	D	T	d	t			¤	´	Ä	Ô	ä	ô
5			%	5	E	U	e	u			¥	µ	Å	Õ	å	õ
6			&	6	F	V	f	v			¦	¶	Æ	Ö	æ	ö
7			'	7	G	W	g	w			§	·	Ç	×	ç	÷
8			(	8	H	X	h	x			¨	¸	È	Ø	è	ø
9			)	9	I	Y	i	y			©	¹	É	Ù	é	ù
A			*	:	J	Z	j	z			ª	º	Ê	Ú	ê	ú
B			+	;	K	[	k	{			«	»	Ë	Û	ë	û
C			,	<	L	\	l	|			¬	¼	Ì	Ü	ì	ü
D			-	=	M	]	m	}				½	Í	Ý	í	ý
E			.	>	N	^	n	~			®	¾	Î	Þ	î	þ
F			/	?	O	_	o	▩			¯	¿	Ï	ß	ï	ÿ

PsText (10J)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				0	@	P	`	p						—		
1			!	1	A	Q	a	q			¡	–	`		Æ	æ
2			"	2	B	R	b	r			¢	†	´			
3			#	3	C	S	c	s			£	‡	ˆ		ª	
4			$	4	D	T	d	t			/	·	˜			
5			%	5	E	U	e	u			¥		¯			ı
6			&	6	F	V	f	v			ƒ	¶	˘			
7			'	7	G	W	g	w			§	•	˙			
8			(	8	H	X	h	x			¤	¸	¨		Ł	ł
9			)	9	I	Y	i	y			'	,,			Ø	ø
A			*	:	J	Z	j	z			“	”	°		Œ	œ
B			+	;	K	[	k	{			«	»	¸		º	ß
C			,	<	L	\	l	|		‹	…				
D			-	=	M	]	m	}			›	‰	˝			
E			.	>	N	^	n	~			fi		˛			
F			/	?	O	_	o				fl	¿	ˇ			

IBM-US (10U)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0		►		0	@	P	`	p	Ç	É	á	⣿	└	╨	α	≡
1	☺	◄	!	1	A	Q	a	q	ü	æ	í	▒	┴	╤	ß	±
2	☻	↕	"	2	B	R	b	r	é	Æ	ó	▓	┬	╥	Γ	≥
3	♥	‼	#	3	C	S	c	s	â	ô	ú	│	├	╙	π	≤
4	♦	¶	$	4	D	T	d	t	ä	ö	ñ	┤	─	╘	Σ	⌠
5	♣	§	%	5	E	U	e	u	à	ò	Ñ	╡	┼	╒	σ	⌡
6	♠	▬	&	6	F	V	f	v	å	û	ª	╢	╞	╓	µ	÷
7	•	↨	'	7	G	W	g	w	ç	ù	º	╖	╟	╫	τ	≈
8	◘	↑	(	8	H	X	h	x	ê	ÿ	¿	╕	╚	╪	Φ	°
9	○	↓	)	9	I	Y	i	y	ë	Ö	⌐	╣	╔	┘	Θ	·
A	◙	→	*	:	J	Z	j	z	è	Ü	¬	║	╩	┌	Ω	·
B	♂	←	+	;	K	[	k	{	ï	¢	½	╗	╦	█	δ	√
C	♀	∟	,	<	L	\	l	|	î	£	¼	╝	╠	∞	n
D	♪	↔	-	=	M	]	m	}	ì	¥	¡	╜	═	▐	φ	2
E	♫	▲	.	>	N	^	n	~	Ä	Pt	«	╛	╬	▀	ε	■
F	☼	▼	/	?	O	_	o	⌂	Å	ƒ	»	┐	╧	▀	∩	

IBM-DN (11U)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0		►		0	@	P	`	p	Ç	É	á	⣿	└	╨	α	≡
1	☺	◄	!	1	A	Q	a	q	ü	æ	í	▒	┴	╤	ß	±
2	☻	↕	"	2	B	R	b	r	é	Æ	ó	▓	┬	╥	Γ	≥
3	♥	‼	#	3	C	S	c	s	â	ô	ú	│	├	╙	π	≤
4	♦	¶	$	4	D	T	d	t	ä	ö	ñ	┤	─	╘	Σ	⌠
5	♣	§	%	5	E	U	e	u	à	ò	Ñ	╡	┼	╒	σ	⌡
6	♠	▬	&	6	F	V	f	v	å	û	õ	╢	╞	╓	µ	÷
7	•	↨	'	7	G	W	g	w	ç	ù	Õ	╖	╟	╫	τ	≈
8	◘	↑	(	8	H	X	h	x	ê	ÿ	¿	╕	╚	╪	Φ	°
9	○	↓	)	9	I	Y	i	y	ë	Ö	ã	╣	╔	┘	Θ	·
A	◙	→	*	:	J	Z	j	z	è	Ü	Ã	║	╩	┌	Ω	·
B	♂	←	+	;	K	[	k	{	ï	ø	ℓ	╗	╦	█	δ	√
C	♀	∟	,	<	L	\	l	|	î	£	℁	╝	╠	∞	n
D	♪	↔	-	=	M	]	m	}	ì	Ø	¡	╜	═	▐	φ	2
E	♫	▲	.	>	N	^	n	~	Ä	L	³	╛	╬	▀	ε	■
F	☼	▼	/	?	O	_	o	⌂	Å	ł	¤	┐	╧	▀	∩	

McText (12J)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				0	@	P	`	p	Ä	ê	†	∞	¿	–	‡	
1			!	1	A	Q	a	q	Å	ë	°	±	¡	—	·	Ò
2			"	2	B	R	b	r	Ç	í	¢	≤	¬	"	‚	Ú
3			#	3	C	S	c	s	É	ì	£	≥	√	"	„	Û
4			$	4	D	T	d	t	Ñ	î	§	¥	ƒ	'	‰	Ù
5			%	5	E	U	e	u	Ö	ï	•	µ	≈	'	Â	ı
6			&	6	F	V	f	v	Ü	ñ	¶	∂	Δ	÷	Ê	ˆ
7			'	7	G	W	g	w	á	ó	ß	∑	«	◇	Á	˜
8			(	8	H	X	h	x	à	ò	®	∏	»	ÿ	Ë	¯
9			)	9	I	Y	i	y	â	ô	©	π	…	Ÿ	È	˘
A			*	:	J	Z	j	z	ä	ö	™	∫		/	Í	˙
B			+	;	K	[	k	{	ã	õ	´	ª	À	¤	Î	°
C			,	<	L	\	l	|	å	ú	¨	º	Ã	‹	Ï	¸
D			-	=	M	]	m	}	ç	ù	≠	Ω	Õ	›	Ì	˝
E			.	>	N	^	n	~	é	û	Æ	æ	Œ	fi	Ó	˛
F			/	?	O	_	o		è	ü	Ø	ø	œ	fl	Ô	ˇ

PcMultilingual (12U)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0		►		0	@	P	`	p	Ç	É	á	▒	└	ð	Ó	-
1	☺	◄	!	1	A	Q	a	q	ü	æ	í	▓	┴	Ð	ß	±
2	☻	↕	"	2	B	R	b	r	é	Æ	ó	▓	┬	Ê	Ô	‗
3	♥	‼	#	3	C	S	c	s	â	ô	ú	┤	├	Ë	Ò	¾
4	♦	¶	$	4	D	T	d	t	ä	ö	ñ	┤	─	È	õ	¶
5	♣	§	%	5	E	U	e	u	à	ò	Ñ	Á	┼	ı	Õ	§
6	♠	▬	&	6	F	V	f	v	å	û	ª	Â	ã	Í	µ	÷
7	•	↨	'	7	G	W	g	w	ç	ù	º	À	Ã	Î	þ	¸
8	◘	↑	(	8	H	X	h	x	ê	ÿ	¿	©	╚	Ï	Þ	°
9	○	↓	)	9	I	Y	i	y	ë	Ö	®	╣	╔	┘	Ú	¨
A	◙	→	*	:	J	Z	j	z	è	Ü	¬	║	╩	┌	Û	·
B	♂	←	+	;	K	[	k	{	ï	ø	½	╗	╦	▄	Ù	¹
C	♀	∟	,	<	L	\	l	|	î	£	¼	╝	╠	▌	ý	³
D	♪	↔	-	=	M	]	m	}	ì	Ø	¡	¢	═	¦	Ý	²
E	♫	▲	.	>	N	^	n	~	Ä	×	«	¥	╬	Ì	¯	■
F	☼	▼	/	?	O	_	o	⌂	Å	ƒ	»	┐	¤	▀	´	

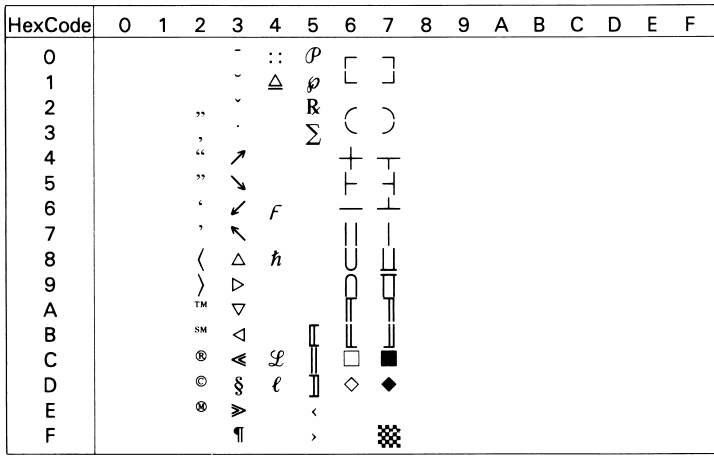
VeInternational (13J)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				0	@	P	‘	p			„	‰	â	Å	Á	Œ
1			!	1	A	Q	a	q			À	“	ê	î	Ã	œ
2			"	2	B	R	b	r			Â	”	ô	Ø	ã	¶
3			#	3	C	S	c	s			È	°	û	Æ		†
4			$	4	D	T	d	t			Ê	Ç	á	å		‡
5			%	5	E	U	e	u			Ë	ç	é	í	Í	—
6			&	6	F	V	f	v			Î	Ñ	ó	ø	Ì	–
7			’	7	G	W	g	w			Ï	ñ	ú	æ	Ó	
8			(	8	H	X	h	x			©	¡	à	Ä	Ò	
9			)	9	I	Y	i	y			®	¿	è	ì	Õ	a
A			*	:	J	Z	j	z			™	¤	ò	Ö	õ	o
B			+	;	K	[	k	{		↵	‹	£	ù	Ü	Š	«
C			,	<	L	\	l	|		→	›	¥	ä	É	š	•
D			-	=	M	]	m	}		␣	Ù	§	ë	ï	Ú	»
E			.	>	N	^	n	~		▪	Û	*f*	ö	ß	Ÿ	
F			/	?	O	_	o			□		¢	ü	Ô	ÿ	…

VeUS (14J)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				0	@	P	‘	p			„	‰				
1			!	1	A	Q	a	q				“				
2			"	2	B	R	b	r				”				¶
3			#	3	C	S	c	s				°				†
4			$	4	D	T	d	t								‡
5			%	5	E	U	e	u								—
6			&	6	F	V	f	v								–
7			’	7	G	W	g	w								
8			(	8	H	X	h	x			©					
9			)	9	I	Y	i	y			®					
A			*	:	J	Z	j	z			™					
B			+	;	K	[	k	{		↵						
C			,	<	L	\	l	|		→						•
D			-	=	M	]	m	}		␣		§				
E			.	>	N	^	n	~		▪						
F			/	?	O	_	o			□		¢				…

PiFont (15U)



HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				¯	::	℘	┌	┐								
1				˘	≙	℘										
2			„	ˇ		℞	(	)								
3			,	·		∑										
4			“	↗			┼	┬								
5			”	↘			├	┴								
6			‘	↙	ƒ		─	├								
7			’	↖			═	─								
8			〈	△	ℏ		∪	╙								
9			〉	▷			∩	╜								
A			™	▽			╚	╖								
B			℠	◁		⟦	□	■								
C			®	≪	ℒ	⟧	◇	◆								
D			©	§	ℓ	‹										
E			℗	≫		›										
F				¶				▩								

PcE.Europe (17U)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0		►		0	@	P	`	p	Ç	É	á	⣿	└	đ	Ó	-
1	☺	◄	!	1	A	Q	a	q	ü	Ĺ	í	▒	┴	Đ	ß	˝
2	☻	↕	"	2	B	R	b	r	é	Í	ó	▓	┬	Ď	Ô	˛
3	♥	‼	#	3	C	S	c	s	â	ô	ú	│	├	Ë	Ń	ˇ
4	♦	¶	$	4	D	T	d	t	ä	ö	Ą	┤	─	ď	ń	˘
5	♣	§	%	5	E	U	e	u	ů	Ľ	ą	Á	┼	Ň	ň	§
6	♠	▬	&	6	F	V	f	v	ć	ľ	Ž	Â	╞	Í	Š	÷
7	●	↨	'	7	G	W	g	w	ç	Ś	ž	Ě	ă	Î	š	¸
8	◘	↑	(	8	H	X	h	x	ł	ś	Ę	Ş	╚	ě	Ř	°
9	○	↓	)	9	I	Y	i	y	ë	Ö	ę	╣	╔	┘	Ú	¨
A	◙	→	*	:	J	Z	j	z	Ő	Ü		═	╩	┌	ŕ	·
B	♂	←	+	;	K	[	k	{	ő	Ť	ź	╗	╦	▄	Ű	ű
C	♀	∟	,	<	L	\	l	|	î	ť	Č	╝	╠	▬	ý	Ř
D	♪	↔	-	=	M	]	m	}	Ź	Ł	ş	Ż	═	Ţ	Ý	ř
E	♫	▲	.	>	N	^	n	~	Ä	×	«	ż	╬	Ů	ţ	■
F	☼	▼	/	?	O	_	o	⌂	Ć	č	»	┐	¤	▄	´	

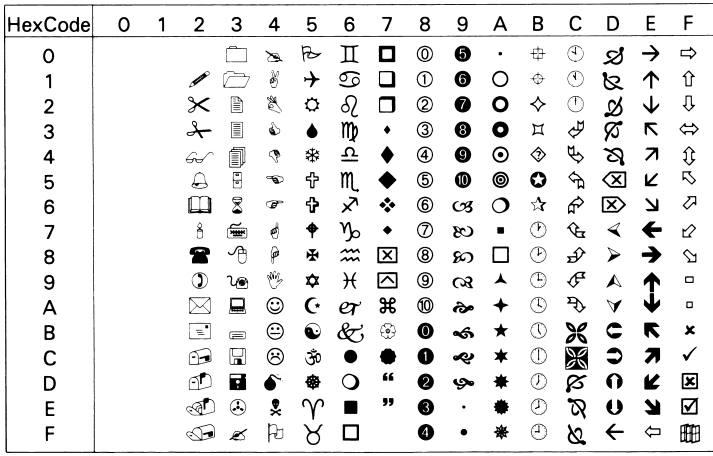
Symbol (19M)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				0	≅	Π	‾	π				°	ℵ	∠	◊	
1			!	1	Α	Θ	α	θ			ϒ	±	ℑ	∇	〈	〉
2			∀	2	Β	Ρ	β	ρ			′	″	ℜ	®	®	∫
3			#	3	Χ	Σ	χ	σ			≤	≥	℘	©	©	⌠
4			∃	4	Δ	Τ	δ	τ			⁄	×	⊗	™	™	⎮
5			%	5	Ε	Υ	ε	υ			∞	∝	⊕	∏	∑	⌡
6			&	6	Φ	ς	φ	ϖ			ƒ	∂	∅	√	⎛	⎞
7			∍	7	Γ	Ω	γ	ω			♣	•	∩	·	⎜	⎟
8			(	8	Η	Ξ	η	ξ			♦	÷	∪	¬	⎝	⎠
9			)	9	Ι	Ψ	ι	ψ			♥	≠	⊃	∧	⎡	⎤
A			*	:	ϑ	Ζ	φ	ζ			♠	≡	⊇	∨	⎢	⎥
B			+	;	Κ	[	κ	{			↔	≈	⊄	⇔	⎣	⎦
C			,	<	Λ	∴	λ	|			←	…	⊂	⇐	⎡	⎤
D			−	=	Μ	]	μ	}			↑	|	⊆	⇑	⎧	⎫
E			.	>	Ν	⊥	ν	~			→	—	∈	⇒	⎩	⎭
F			/	?	Ο	_	ο				↓	↵	∉	⇓	⎪	

WiAnsi (19U)

HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				0	@	P	`	p				°	À	Ð	à	ð
1			!	1	A	Q	a	q		‘	¡	±	Á	Ñ	á	ñ
2			"	2	B	R	b	r	‚	’	¢	²	Â	Ò	â	ò
3			#	3	C	S	c	s	*ƒ*	“	£	³	Ã	Ó	ã	ó
4			$	4	D	T	d	t	„	”	¤	´	Ä	Ô	ä	ô
5			%	5	E	U	e	u	…	•	¥	*µ*	Å	Õ	å	õ
6			&	6	F	V	f	v	†	–	¦	¶	Æ	Ö	æ	ö
7			'	7	G	W	g	w	‡	—	§	·	Ç	×	ç	÷
8			(	8	H	X	h	x	ˆ	˜	¨	¸	È	Ø	è	ø
9			)	9	I	Y	i	y	‰	™	©	¹	É	Ù	é	ù
A			*	:	J	Z	j	z	Š	š	ª	º	Ê	Ú	ê	ú
B			+	;	K	[	k	{	‹	›	«	»	Ë	Û	ë	û
C			,	<	L	\	l	|	Œ	œ	¬	¼	Ì	Ü	ì	ü
D			-	=	M	]	m	}			-	½	Í	Ý	í	ý
E			.	>	N	^	n	~			®	¾	Î	Þ	î	þ
F			/	?	O	_	o	▩		Ÿ	¯	¿	Ï	ß	ï	ÿ

Wingdings (579L)



HexCode	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0																
1																
2																
3																
4																
5																
6																
7																
8																
9																
A																
B																
C																
D																
E																
F																

OCR A (0O)

CODE	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0						P		p								
1			!		A	Q	a	q								
2			"		B	R	b	r								
3			#		C	S	c	s								
4			$		D	T	d	t								
5			%		E	U	e	u								
6			&		F	V	f	v								
7			'		G	W	g	w								
8			(		H	X	h	x								
9			)		I	Y	i	y								
A			*		J	Z	j	z								
B			+		K	[	k	{								
C			,		L	\	l	|							
D			-		M	]	m	}								
E			.		N	^	n	~								
F			/		O	_	o									

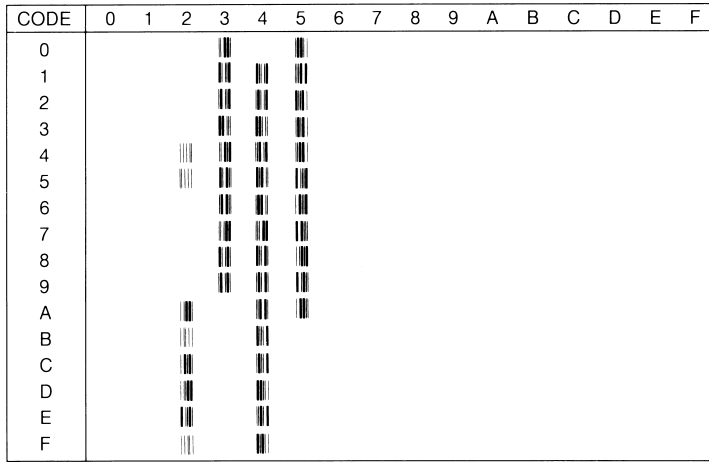
OCR B (1O)

CODE	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				0	@	P	`	p						Å		
1			!	1	A	Q	a	q								
2			"	2	B	R	b	r						Ø		
3			#	3	C	S	c	s						Æ		
4			$	4	D	T	d	t						å		
5			%	5	E	U	e	u								
6			&	6	F	V	f	v				Ñ		ø		
7			'	7	G	W	g	w						æ		
8			(	8	H	X	h	x			´			Ä		
9			)	9	I	Y	i	y			`		IJ		ij	
A			*	:	J	Z	j	z			^	¤		Ö		
B			+	;	K	[	k	{			¨	£		Ü		
C			,	<	L	\	l	|			~	¥				
D			-	=	M	]	m	}			¸	§				
E			.	>	N	^	n							ß		
F			/	?	O	_	o	▮								

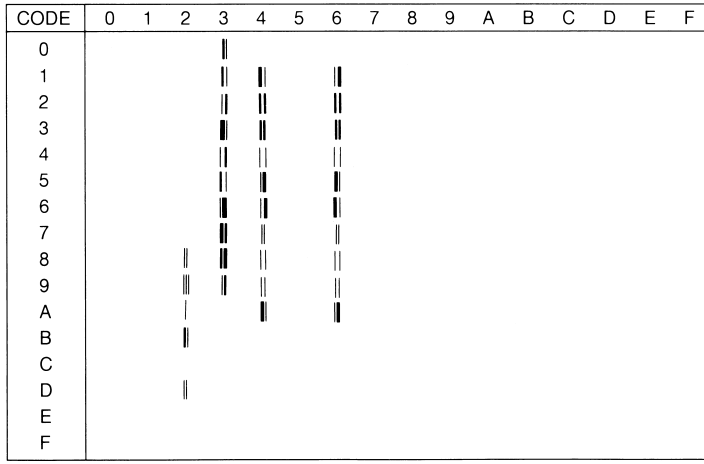
OCR B Extension (3Q)

CODE	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0						Å										
1																
2						Ø										
3						Æ										
4						å										
5																
6				Ñ		ø										
7						æ										
8			´			Ä										
9			`		IJ		ij									
A			^	¤		Ö										
B			¨	£		Ü										
C			~	¥												
D			¸	§												
E						ß										
F																

Code 39 (0Y)



EAN/UPC (8Y)



Roman-9 (4U)

CODE	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				0	@	P	‘	p				¯	â	Å	Á	Þ
1			!	1	A	Q	a	q			À	Ý	ê	î	Ã	þ
2			"	2	B	R	b	r			Â	ý	ô	Ø	ã	·
3			#	3	C	S	c	s			È	°	û	Æ	Đ	µ
4			$	4	D	T	d	t			Ê	Ç	á	å	ð	¶
5			%	5	E	U	e	u			Ë	ç	é	í	Í	¾
6			&	6	F	V	f	v			Î	Ñ	ó	ø	Ì	—
7			’	7	G	W	g	w			Ï	ñ	ú	æ	Ó	¼
8			(	8	H	X	h	x			´	¡	à	Ä	Ò	½
9			)	9	I	Y	i	y			`	¿	è	ì	Õ	ª
A			*	:	J	Z	j	z			^	€	ò	Ö	õ	º
B			+	;	K	[	k	{			¨	£	ù	Ü	Š	«
C			,	<	L	\	l	|		~	¥	ä	É	š	▪
D			-	=	M	]	m	}			Ù	§	ë	ï	Ú	»
E			.	>	N	^	n	~			Û	ƒ	ö	ß	Ÿ	±
F			/	?	O	_	o	▒			£	¢	ü	Ô	ÿ	

8859-10 ISO (6N)

CODE	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				0	@	P	`	p				°	Ā	Đ	ā	ð
1			!	1	A	Q	a	q			Ą	ą	Á	Ņ	á	ņ
2			"	2	B	R	b	r			Ē	ē	Â	Ō	â	ō
3			#	3	C	S	c	s			Ģ	ģ	Ã	Ó	ã	ó
4			$	4	D	T	d	t			Ī	ī	Ä	Ô	ä	ô
5			%	5	E	U	e	u			Ĩ	ĩ	Å	Õ	å	õ
6			&	6	F	V	f	v			Ķ	ķ	Æ	Ö	æ	ö
7			'	7	G	W	g	w			§	·	Ļ	Ũ	ļ	ũ
8			(	8	H	X	h	x			Ļ	ļ	Č	Ø	č	ø
9			)	9	I	Y	i	y			Đ	đ	É	Ų	é	ų
A			*	:	J	Z	j	z			Š	š	Ę	Ú	ę	ú
B			+	;	K	[	k	{			Ŧ	ŧ	Ë	Û	ë	û
C			,	<	L	\	l	|		Ž	ž	Ė	Ü	ė	ü
D			-	=	M	]	m	}			-	—	Í	Ý	í	ý
E			.	>	N	^	n	~			Ū	ū	Î	Þ	î	þ
F			/	?	O	_	o	▒			Ŋ	ŋ	Ï	ß	ï	ĸ

Pc1004 (9J)

CODE	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				0	@	P	`	p				°	À	Đ	à	ð
1			!	1	A	Q	a	q		‘	¡	±	Á	Ñ	á	ñ
2			"	2	B	R	b	r	,	’	¢	²	Â	Ò	â	ò
3			#	3	C	S	c	s		“	£	³	Ã	Ó	ã	ó
4	¯		$	4	D	T	d	t	„	”	¤	´	Ä	Ô	ä	ô
5	˘		%	5	E	U	e	u	…	•	¥	µ	Å	Õ	å	õ
6	˙		&	6	F	V	f	v	†	–	¦	¶	Æ	Ö	æ	ö
7			'	7	G	W	g	w	‡	—	§	·	Ç	×	ç	÷
8	°		(	8	H	X	h	x	ˆ	˜	¨	¸	È	Ø	è	ø
9			)	9	I	Y	i	y	‰	™	©	¹	É	Ù	é	ù
A	˜		*	:	J	Z	j	z	Š	š	ª	º	Ê	Ú	ê	ú
B	¸		+	;	K	[	k	{	‹	›	«	»	Ë	Û	ë	û
C	ˇ		,	<	L	\	l	|	Œ	œ	¬	¼	Ì	Ü	ì	ü
D			-	=	M	]	m	}			-	½	Í	Ý	í	ý
E			.	>	N	^	n	~			®	¾	Î	Þ	î	þ
F			/	?	O	_	o	⌂		Ÿ	¯	¿	Ï	ß	ï	ÿ

WiBALT (19L)

CODE	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				0	@	P	`	p	€			°	Ą	Š	ą	š
1			!	1	A	Q	a	q		‘		±	Į	Ń	į	ń
2			"	2	B	R	b	r	,	’	¢	²	Ā	Ņ	ā	ņ
3			#	3	C	S	c	s		“	£	³	Ć	Ó	ć	ó
4			$	4	D	T	d	t	„	”	¤	´	Ä	Ō	ä	ō
5			%	5	E	U	e	u	…	•		µ	Å	Õ	å	õ
6			&	6	F	V	f	v	†	–	¦	¶	Ę	Ö	ę	ö
7			'	7	G	W	g	w	‡	—	§	·	Ē	×	ē	÷
8			(	8	H	X	h	x			Ø	ø	Č	Ų	č	ų
9			)	9	I	Y	i	y	‰	™	©	¹	É	Ł	é	ł
A			*	:	J	Z	j	z			Ŗ	ŗ	Ź	Ś	ź	ś
B			+	;	K	[	k	{	‹	›	«	»	Ė	Ū	ė	ū
C			,	<	L	\	l	|		¬	¼	Ģ	Ü	ģ	ü
D			-	=	M	]	m	}	¨	¯	-	½	Ķ	Ż	ķ	ż
E			.	>	N	^	n	~	ˇ	¸	®	¾	Ī	Ž	ī	ž
F			/	?	O	_	o	▒	˛		Æ	æ	Ļ	ß	ļ	˙

PcBlt775 (26U)

CODE	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0		►		0	@	P	`	p	Ć	É	Ā	⣿	└	ą	Ó	-
1	☺	◄	!	1	A	Q	a	q	ü	æ	Ī	▒	┴	č	ß	±
2	☻	↕	"	2	B	R	b	r	é	Æ	ó	▀	┬	ę	Ō	″
3	♥	‼	#	3	C	S	c	s	ā	ō	Ż	│	├	ė	Ń	¾
4	♦	¶	$	4	D	T	d	t	ä	ö	ż	┤	─	į	õ	¶
5	♣	§	%	5	E	U	e	u	ģ	Ģ	ź	Ą	┼	š	Õ	§
6	♠	▬	&	6	F	V	f	v	å	¢	″	Č	Ų	ų	µ	÷
7	•	↨	'	7	G	W	g	w	ć	Ś	¦	Ę	Ū	ū	ń	„
8	◘	↑	(	8	H	X	h	x	ł	ś	©	Ė	╚	ž	Ķ	°
9	○	↓	)	9	I	Y	i	y	ē	Ö	®	╣	╔	┘	ķ	∙
A	◙	→	*	:	J	Z	j	z	Ŗ	Ü	¬	║	╩	┌	Ļ	∙
B	♂	←	+	;	K	[	k	{	ŗ	ø	½	╗	╦	█	ļ	¹
C	♀	∟	,	<	L	\	l	|	Ī	£	¼	╝	╠	▄	ņ	³
D	♪	↔	-	=	M	]	m	}	Ź	Ø	Ł	Į	═	▌	Ē	²
E	♫	▲	.	>	N	^	n	~	Ä	×	«	Š	╬	▐	Ņ	■
F	☼	▼	/	?	O	_	o	⌂	Å	¤	»	┐	Ž	▀	’	

International character sets for ISO

To obtain the symbol sets listed below, substitute the characters in the ANSI ASCII sets with the characters in the table below.

ISO set	ASCII code hex											
	23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E
ANSI ASCII (0U)	#	$	@	[	\	]	^	`	{	|	}	~
Norweg 1 (0D)	#	$	@	Æ	Ø	Å	^	`	æ	ø	å	¯
French (0F)	£	$	à	°	ç	§	^	`	é	ù	è	¨
HP German (0G)	£	$	§	Ä	Ö	Ü	^	`	ä	ö	ü	ß
Italian (0I)	£	$	§	°	ç	é	^	ù	à	ò	è	ì
JIS ASCII (0K)	#	$	@	[	¥	]	^	`	{	|	}	¯
Swedis 2 (0S)	#	¤	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü
Norweg 2 (1D)	§	$	@	Æ	Ø	Å	^	`	æ	ø	å	|
UK (1E)	£	$	@	[	\	]	^	`	{	|	}	¯
French 2 (1F)	£	$	à	°	ç	§	^	µ	é	ù	è	¨
German (1G)	#	$	§	Ä	Ö	Ü	^	`	ä	ö	ü	ß
HP Spanish (1S)	#	$	@	¡	Ñ	¿	°	`	{	ñ	}	~
Chinese (2K)	#	¥	@	[	\	]	^	`	{	|	}	¯
Spanish (2S)	£	$	§	¡	Ñ	¿	^	`	°	ñ	ç	~
IRV (2U)	#	¤	@	[	\	]	^	`	{	|	}	¯
Swedish (3S)	#	¤	@	Ä	Ö	Å	^	`	ä	ö	å	¯
Portuguese (4S)	#	$	§	Ã	Ç	Õ	^	`	ã	ç	õ	°
IBM Portuguese (5S)	#	$	´	Ã	Ç	Õ	^	`	ã	ç	õ	~
IBM Spanish (6S)	#	$	·	¡	Ñ	Ç	¿	`	´	ñ	ç	¨

In ESC/P2 or FX Modes

	8859-15 ISO, Pc 850, Pc 860, Pc 863, Pc 865, Roman-8	**Pc 857, Pc 852, BRASCII, Abicomp, PcIcelandic, ISOLatin1**	**Pc 437**	**OCR A**	**PcEur858**
EPSON Roman	available	not available	available	not available	available
Courier SWC	available	available	available	not available	available
EPSON Sans serif	available	not available	available	not available	available
EPSON Prestige	available	not available	available	not available	available
EPSON Script	available	not available	available	not available	available
Letter Gothic SWC	available	available	available	not available	available
Swiss 721 SWM*	available	available	available	not available	available
Dutch 801 SWM*	available	available	available	not available	available
OCR B	not available	not available	available	not available	available
OCR A	not available	not available	not available	available	not available

* Available only in ESC/P 2 mode.

8859-15 ISO

CODE	8	9	A	B	C	D	E	F
0				°	À	Ð	à	ð
1			¡	±	Á	Ñ	á	ñ
2			¢	²	Â	Ò	â	ò
3			£	³	Ã	Ó	ã	ó
4			€	Ž	Ä	Ô	ä	ô
5			¥	µ	Å	Õ	å	õ
6			Š	¶	Æ	Ö	æ	ö
7			§	·	Ç	×	ç	÷
8			š	ž	È	Ø	è	ø
9			©	¹	É	Ù	é	ù
A			ª	º	Ê	Ú	ê	ú
B			«	»	Ë	Û	ë	û
C			¬	Œ	Ì	Ü	ì	ü
D				œ	Í	Ý	í	ý
E			®	Ÿ	Î	Þ	î	þ
F			¯	¿	Ï	ß	ï	ÿ

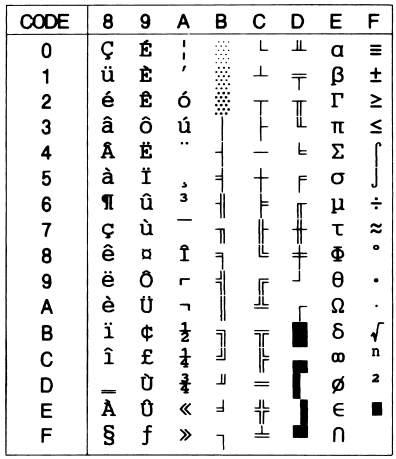
Pc 850 (Multilingual)

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

Pc 860 (Portuguese)

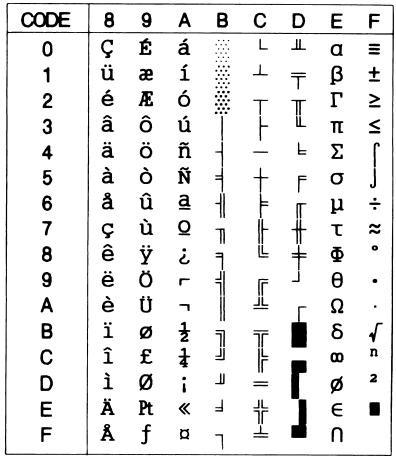
CODE	8	9	A	B	C	D	E	F
0	Ç	É	á	▒	└	╨	α	≡
1	ü	À	í	▒	┴	╤	ß	±
2	é	È	ó	▒	┬	╥	Γ	≥
3	â	ô	ú	▒	├	╙	π	≤
4	ã	õ	ñ	▒	─	╘	Σ	⌠
5	à	ò	Ñ	▒	┼	╒	σ	⌡
6	Á	Ú	ª	▒	╞	╓	µ	÷
7	ç	ù	º	▒	╟	╫	τ	≈
8	ê	Ì	¿	▒	╚	╪	Φ	°
9	Ê	Õ	Ò	▒	╔	┘	θ	∙
A	è	Ü	¬	▒	╩	┌	Ω	·
B	í	¢	½	▒	╦	▒	δ	√
C	Ô	£	¼	▒	╠	▒	∞	ⁿ
D	ì	Ù	¡	▒	═	▒	ø	²
E	Ã	₧	«	▒	╬	▒	ϵ	■
F	Â	Ó	»	▒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

Pc 863 (Canadian-French)



CODE	8	9	A	B	C	D	E	F
0	Ç	É	¦	▒	└	╨	α	≡
1	ü	È	´	▒	┴	╤	β	±
2	é	Ê	ó	▒	┬	╥	Γ	≥
3	â	ô	ú	▒	├	╙	π	≤
4	Â	Ë	¨	▒	─	╘	Σ	⌠
5	à	Ï	¸	▒	┼	╒	σ	⌡
6	¶	û	³	▒	╞	╓	µ	÷
7	ç	ù	—	▒	╟	╫	τ	≈
8	ê	¤	î	▒	╚	╪	Φ	°
9	ë	Ô	⌐	▒	╔	┘	θ	•
A	è	Ü	¬	▒	╩	┌	Ω	·
B	ï	¢	½	▒	╦	▉	δ	√
C	î	£	¼	▒	╠	▐	∞	ⁿ
D	‗	Ù	¾	▒	═	▌	ø	²
E	À	Û	«	▒	╬	▀	∈	■
F	§	ƒ	»	▒	╧	▀	∩	

Pc 865 (Norwegian)

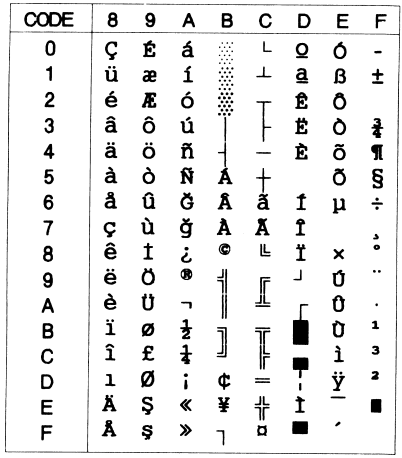


CODE	8	9	A	B	C	D	E	F
0	Ç	É	á	▒	└	╨	α	≡
1	ü	æ	í	▒	┴	╤	β	±
2	é	Æ	ó	▒	┬	╥	Γ	≥
3	â	ô	ú	▒	├	╙	π	≤
4	ä	ö	ñ	▒	─	╘	Σ	⌠
5	à	ò	Ñ	▒	┼	╒	σ	⌡
6	å	û	ª	▒	╞	╓	µ	÷
7	ç	ù	º	▒	╟	╫	τ	≈
8	ê	ÿ	¿	▒	╚	╪	Φ	°
9	ë	Ö	⌐	▒	╔	┘	θ	•
A	è	Ü	¬	▒	╩	┌	Ω	·
B	ï	ø	½	▒	╦	▉	δ	√
C	î	£	¼	▒	╠	▐	∞	ⁿ
D	ì	Ø	¡	▒	═	▌	ø	²
E	Ä	₧	«	▒	╬	▀	∈	■
F	Å	ƒ	¤	▒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

Roman-8

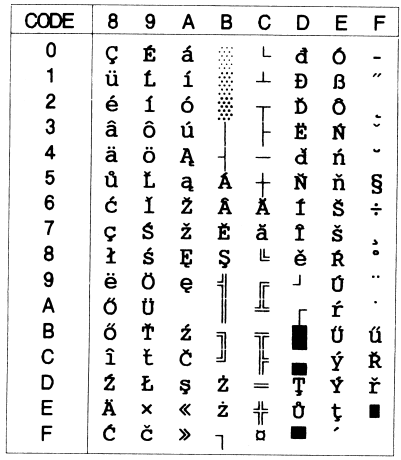
CODE	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				0	@	P	‘	p				¯	â	Å	Á	Þ
1			!	1	A	Q	a	q			À	Ý	ê	î	Ã	þ
2			"	2	B	R	b	r			Â	ý	ô	Ø	ã	·
3			#	3	C	S	c	s			È	°	û	Æ	Đ	µ
4			$	4	D	T	d	t			Ê	Ç	á	å	ð	¶
5			%	5	E	U	e	u			Ë	ç	é	í	Í	¾
6			&	6	F	V	f	v			Î	Ñ	ó	ø	Ì	‗
7			’	7	G	W	g	w			Ï	ñ	ú	æ	Ó	¼
8			(	8	H	X	h	x			´	¡	à	Ä	Ò	½
9			)	9	I	Y	i	y			`	¿	è	ì	Õ	ª
A			*	:	J	Z	j	z			^	¤	ò	Ö	õ	º
B			+	;	K	[	k	{			¨	£	ù	Ü	Š	«
C			,	<	L	\	l	¦			~	¥	ä	É	š	■
D			−	=	M	]	m	}			Ù	§	ë	ï	Ú	»
E			.	>	N	^	n	~			Û	ƒ	ö	ß	Ÿ	±
F			/	?	O	_	o				£	¢	ü	Ô	ÿ	

Pc 857 (PcTurk2)



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

Pc 852 (East Europe)



CODE	8	9	A	B	C	D	E	F
0	Ç	É	á	▒	└	đ	Ó	-
1	ü	Ĺ	í	┴	┴	Đ	ß	˝
2	é	ĺ	ó	┬	┬	Ď	Ô	˛
3	â	ô	ú	├	├	Ë	Ń	ˇ
4	ä	ö	Ą	─	─	ď	ń	˘
5	ů	Ľ	ą	┼	┼	Ň	ň	§
6	ć	ľ	Ž	Â	Ă	Í	Š	÷
7	ç	Ś	ž	Ě	ă	Î	š	¸
8	ł	ś	Ę	Ş	╚	ě	Ř	°
9	ë	Ö	ę	╣	╔	┘	Ú	¨
A	Ő	Ü	¬	╩	╩	┌	ŕ	·
B	ő	Ť	ź	╗	╦	█	Ű	ű
C	î	ť	Č	╠	╠	▄	ý	Ř
D	Ź	Ł	ş	Ż	═	Ţ	Ý	ř
E	Ä	×	«	ż	╬	ů	ţ	■
F	Ć	č	»	┐	¤	▀	´	

BRASCII

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

Abicomp

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

PcIcelandic

CODE	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0		►		0	@	P	‘	p	Ç	É	á	⣿	└	╨	α	≡
1	☺	◄	!	1	A	Q	a	q	ü	æ	í	▒	┴	╤	ß	±
2	☻	↕	"	2	B	R	b	r	é	Æ	ó	▓	┬	╥	Γ	≥
3	♥	!!	#	3	C	S	c	s	â	ô	ú	│	├	╙	π	≤
4	♦	¶	$	4	D	T	d	t	ä	ö	Á	┤	—	╘	Σ	⌠
5	♣	§	%	5	E	U	e	u	à	þ	Í	┼	┼	╒	σ	⌡
6	♠	▬	&	6	F	V	f	v	å	û	Ó	╟	╞	╓	μ	÷
7	●	↨	'	7	G	W	g	w	ç	Ý	Ú	╖	╟	╫	τ	≈
8	◘	↑	(	8	H	X	h	x	ê	ý	¿	╕	╚	╪	Φ	°
9	○	↓	)	9	I	Y	i	y	ë	Ö	⌐	╣	╔	┘	Θ	•
A	◙	→	*	:	J	Z	j	z	è	Ü	¬	║	╩	┌	Ω	·
B	♂	←	+	;	K	[	k	{	Ð	ø	½	╗	╦	▉	δ	√
C	♀	∟	,	<	L	\	l	|	ð	£	¼	╝	╠	▄	∞	n
D	♪	↔	–	=	M	]	m	}	Þ	Ø	¡	╜	═	▌	φ	²
E	♫	▲	.	>	N	^	n	~	Ä	₧	«	╛	╬	▐	ϵ	■
F	☼	▼	/	?	O	_	o	⌂	Å	ƒ	»	┐	╧	▀	∩	

ISOLatin 1

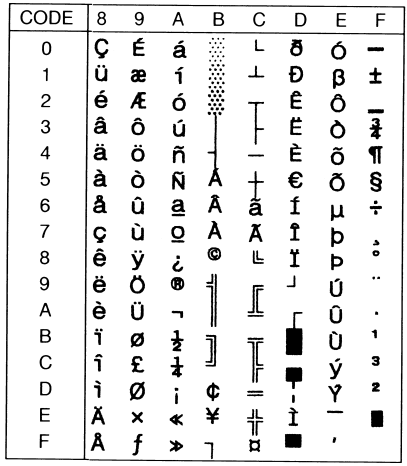
CODE	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0				0	@	P	`	p				°	À	Ð	à	ð
1			!	1	A	Q	a	q			¡	±	Á	Ñ	á	ñ
2			"	2	B	R	b	r			¢	²	Â	Ò	â	ò
3			#	3	C	S	c	s			£	³	Ã	Ó	ã	ó
4			$	4	D	T	d	t			¤	´	Ä	Ô	ä	ô
5			%	5	E	U	e	u			¥	μ	Å	Õ	å	õ
6			&	6	F	V	f	v			¦	¶	Æ	Ö	æ	ö
7			'	7	G	W	g	w			§	·	Ç	×	ç	÷
8			(	8	H	X	h	x			¨	¸	È	Ø	è	ø
9			)	9	I	Y	i	y			©	¹	É	Ù	é	ù
A			*	:	J	Z	j	z			ª	º	Ê	Ú	ê	ú
B			+	;	K	[	k	{			«	»	Ë	Û	ë	û
C			,	<	L	\	l	¦			¬	¼	Ì	Ü	ì	ü
D			–	=	M	]	m	}				½	Í	Ý	í	ý
E			.	>	N	^	n	~			®	¾	Î	Þ	î	þ
F			/	?	O	_	o				¯	¿	Ï	ß	ï	ÿ

Pc 437 (U.S./Standard Europe)

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

OCR A

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



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

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

International character sets

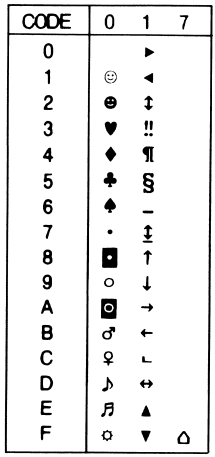
You can select one of the following international character sets using the Remote Control Panel utility or the ESC R command:

Country	ASCII code hex											
	23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E
USA	#	$	@	[	\	]	^	`	{	¦	}	~
France	#	$	à	°	ç	§	^	`	é	ù	è	¨
Germany	#	$	§	Ä	Ö	Ü	^	`	ä	ö	ü	ß
UK	£	$	@	[	\	]	^	`	{	¦	}	~
Denmark	#	$	@	Æ	Ø	Å	^	`	æ	ø	å	~
Sweden	#	¤	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü
Italy	#	$	@	°	\	é	^	ù	à	ò	è	ì
Spain	₧	$	@	¡	Ñ	¿	^	`	¨	ñ	}	~
Japan	#	$	@	[	¥	]	^	`	{	¦	}	~
Norway	#	¤	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
Denmark II	#	$	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
Spain II	#	$	á	¡	Ñ	¿	é	`	í	ñ	ó	ú
Latin America	#	$	á	¡	Ñ	¿	é	ü	í	ñ	ó	ú
Korea*	#	$	@	[	₩	]	^	`	{	¦	}	~
Legal*	#	$	§	°	′	″	¶	`	©	®	†	™

* Available for ESC/P 2 emulation only

Characters available with the ESC (^ command

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



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

In I239X Emulation Mode

The available symbol sets in the I239X mode are PC437, PC850, PC860, PC863, PC865 and PC858. See "In ESC/P2 or FX Modes" on page B-26.

The available fonts are EPSON Sans Serif, Courier SWC, EPSON Prestige, EPSON Gothic, EPSON Presentor, EPSON Orator, and EPSON Script.

In EPSON GL/2 Mode

The available symbol sets in the EPSON GL/2 mode are the same as those in LaserJet 4000 emulation mode. See "In LJ4 Emulation/ EPSON GL2 Mode" on page B-3.

Appendix C

Command Summary

Introduction C-2

LaserJet 4000 (PcL5e) (LJ4) Emulation Commands C-3
GL/2 context commands C-8

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FX mode C-16

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Text C-24
Auxiliary functions C-26
AGM mode C-26

Introduction

The information in this section is relevant to you if you do advanced programming related to printers.

Your printer has the ability to emulate the following printers depending on the chosen printer emulation mode:

LJ-4	Hewlett-Packard LaserJet 4000 (PCL 5e)
ESC/P2	EPSON LQ-570/1070, LQ-2170 (24-pin)
FX	EPSON FX-870/1170, FX-880, or LX-100 (9-pin)
GL/2	Hewlett-Packard GL/2 graphics language
I239X	IBM239X plus (24-pin)
PCL6	Hewlett-Packard LaserJet 4000 (PCL 6)

In addition, the following printer control languages are supported:

PJL	Printer Job Language
EJL	EPSON Job Control Language

This appendix lists the printer commands for these modes. Most of the commands closely emulate the original printer or the control language; however, some have operational differences because the printers use different technologies.

For more information on selecting emulation modes, see "Choosing Printer Emulation" on page 4-19. For information on character sets supported in each emulation mode, see Appendix B, "Symbol Sets."

LaserJet 4000 (PcL5e) (LJ4) Emulation Commands

This section lists the printer commands supported in the LJ4 emulation mode. For more information on printer commands, see Hewlett-Packard's LaserJet reference manual.

Job control

Reset	ESC E
Number of copies	ESC &l#X
Universal exit language	ESC %#X
Long-edge (left) offset registration	ESC &l#U
Short-edge (right) offset registration	ESC &l#Z
Unit of measure	ESC &u#D
Simplex/Duplex print	ESC &l#S
Duplex page size selection	ESC &a#G

Page control

Paper (Media) source	ESC &l#H
Page size	ESC &l#A
Paper size selection	ESC &q#G
Page length	ESC &l#P
Output (Media) bin	ESC &l#G
Orientation	ESC &l#O
Print direction	ESC &a#P
Top margin	ESC &l#E
Text length	ESC &l#F
Left margin	ESC &a#L
Right margin	ESC &a#M

Clear horizontal margins	ESC 9
Perforation skip	ESC &l#L
Horizontal Motion Index (HMI)	ESC &k#H
Vertical Motion Index (VMI)	ESC &l#C
Line spacing	ESC &l#D
Alphanumeric ID (Media selection by type only)	ESC &n#W[operation] [string]

Cursor positioning

Vertical position	ESC &a#R ESC *p#Y ESC &a#V
Horizontal position	ESC &a#C ESC *p#X ESC &a#H
Half line feed	ESC =
Line termination	ESC &k#G
Push/pop position	ESC &f#S

Font selection

Primary symbol set	ESC (id
Secondary symbol set	ESC)id
Primary spacing	ESC (s#P
Secondary spacing	ESC)s#P
Primary pitch	ESC (s#H
Secondary pitch	ESC)s#H
Set pitch mode	ESC &k#S
Primary height	ESC (s#V

Secondary height	ESC)s#V
Primary style	ESC (s#S
Secondary style	ESC)s#S
Primary font stroke weight	ESC (s#B
Secondary font stroke weight	ESC)s#B
Primary typeface family	ESC (s#T
Secondary typeface family	ESC)s#T
Primary font default	ESC (3@
Secondary font default	ESC)3@
Enable underline	ESC &d#D
Disable underline	ESC &d@
Transparent print data	ESC &p#X[data]

Font management

Assign font ID	ESC *c#D
Font and character control	ESC *c#F
Set symbol set	ESC *c#R
Define symbol set	ESC (f#W[data]
Symbol set control	ESC *c#S
Select primary font with ID#	ESC (#X
Select secondary font with ID#	ESC)#X

Soft font creation

Font descriptor	ESC)s#W[data]
Download character	ESC (s#W[data]
Character code	ESC *c#E

Raster graphics

Raster resolutions	ESC *t#R
Raster graphics presentations	ESC *r#F
Start raster graphics	ESC *r#A
Raster Y offset	ESC *b#Y
Set raster compression mode	ESC *b#M
Transfer raster data by row	ESC *b#W[data]
End raster graphics (version B)	ESC *rB
End raster graphics (version C)	ESC *rC
Raster height	ESC *r#T
Raster width	ESC *r#S

Print model

Select current pattern	ESC *v#T
Select source transparency mode	ESC *v#N
Select pattern transparency mode	ESC *v#O
Rectangle width (PCL unit)	ESC *c#A
Rectangle width (decipoints)	ESC *c#H
Rectangle height (PCL unit)	ESC *c#B
Rectangle height (decipoints)	ESC *c#V
Fill rectangular area	ESC *c#P

User-defined pattern management/creation

Pattern ID	ESC *c#G
Define pattern	ESC *c#W[data]
User-defined pattern control	ESC *c#Q
Set pattern reference point	ESC *p#R

Macros

Macro ID	ESC &f#Y
Macro control	ESC &f#X

Status readback

Set status readback location type	ESC *s#T
Set status readback location unit	ESC *s#U
Inquire status readback entity	ESC *s#I
Flush all pages	ESC &r#F
Free memory space	ESC *s1M
Echo	ESC *s#X

Programming hints

End-of-line wrap	ESC &s#C
Enable display functions	ESC Y
Disable display functions	ESC Z

PCL vector graphics switching/set-up picture frame

Enter GL/2 mode	ESC %#B
GL/2 plot horizontal size	ESC*c#K
GL/2 plot vertical size	ESC*c#L
Set picture frame anchor point	ESC*c0T
Picture frame horizontal size	ESC*c#X
Picture frame vertical size	ESC*c#Y

GL/2 context commands

Dual context extensions

Enter PCL mode	ESC %#A
Reset	ESC E
Primary font	FI
Secondary font	FN
Scalable or bitmapped fonts	SB

Palette extensions

Transparency mode	TR
Screened vectors	SV
Number of pens	NP

Vector group

Arc absolute	AA
Arc relative	AR
Absolute arc three point	AT
Bezier absolute	BZ
Bezier relative	BR
Plot absolute	PA
Plot relative	PR
Pen down	PD
Pen up	PU
Relative arc three point	RT
Polyline encoded	PE

Polygon group

Fill rectangle absolute	RA
Fill rectangle relative	RR
Edge rectangle absolute	EA
Edge rectangle relative	ER
Fill wedge	WG
Edge wedge	EW
Polygon mode	PM
Fill polygon	FP
Edge polygon	EP

Character group

Select standard font	SS
Select alternate font	SA
Absolute direction	DI
Relative direction	DR
Absolute character size	SI
Relative character size	SR
Character slant	SL
Extra space	ES
Standard font definition	SD
Alternate font definition	AD
Character fill mode	CF
Label origin	LO
Label	LB
Define label terminator	DT
Character plot	CP
Transparent data	TD
Define variable text path	DV

Line and fill attribute group

Line type	LT
Line attribute	LA
Pen width	PW
Pen width unit selection	WU
Select pen	SP
Symbol mode	SM
Fill type	FT
Anchor corner	AC
Raster fill definition	RF
User defined line type	UL

Configuration and status group

Scale	SC
Input window	IW
Input P1 and P2	IP
Input relative P1 and P2	IR
Default values	DF
Initialize	IN
Rotate coordinate system	RO
Comment	CO

ESC/P2 and FX Commands

This section lists the printer commands supported in the ESC/P2 and FX emulation modes.

ESC/P2 mode

General operation

Initialize printer	ESC @
Control paper loading/ejecting	ESC EM *n*
Delete last character	DEL
Cancel	CAN

Paper feeding

Carriage return	CR
Form feed	FF
Line feed	LF
Select 1/8-inch line spacing	ESC 0
Select 1/6-inch line spacing	ESC 2
Set n/180-inch line spacing	ESC 3 *n*
Set n/360-inch line spacing	ESC + *n*
Set n/60-inch line spacing	ESC A *n*
Backspace	BS

Page format

Set page format	ESC (c 40 *n*
Set page length in defined units	ESC (C 20 *n*
Set page length in lines	ESC C *n*
Set page length in inches	ESC C NUL *n*
Set bottom margin for continuous paper	ESC N *n*
Cancel top/bottom margin for continuous paper	ESC O
Set left margin	ESC l *n*
Set right margin	ESC Q *n*

Print position motion

Set absolute horizontal print position	ESC $ *n1 n2*
Set relative horizontal print position	ESC \ *n1 n2*
Set absolute vertical print position	ESC (V *nn*
Set relative vertical print position	ESC (v *nn*
Set horizontal tabs	ESC D *nn*
Tab horizontally	HT
Set vertical tabs	ESC B *nn*
Tab vertically	VT
Perform n/180-inch Line Feed	ESC J *n*
Reverse n/180-inch Line Feed	ESC j *n*

Font selection

Select typeface	ESC k *n*
Select font by pitch and point	ESC X m *nn*
Select 10 cpi	ESC P
Select 12 cpi	ESC M
Select 15 cpi	ESC g
Turn proportional mode on/off	ESC p 1/0
Select LQ or draft	ESC x *n*
Select italic font	ESC 4
Cancel italic font	ESC 5
Select bold font	ESC E
Cancel bold font	ESC F
Master select	ESC ! *n*
Select print pitch	ESC c*nn*
Select superscript/subscript printing	ESC Sn

Font enhancement

Select condensed printing	SI
Cancel condensed printing	DC2
Select double-width printing (one line)	SO
Turn double-width printing on/off	ESC W 1/0
Cancel double-width printing (one line)	DC4
Turn double-height printing on/off	ESC w 1/0
Select double-strike printing	ESC G
Cancel double-strike printing	ESC H
Select superscript printing	ESC S 0
Select subscript printing	ESC S 1

Select double-width printing (one line)	ESC S0
Cancel superscript/subscript printing	ESC T
Select line/score	ESC (- 301 *nn*
Turn underline on/off	ESC - 1/0
Select character style	ESC q *n*

Spacing

Set intercharacter space	ESC SP *n*
Define unit	ESC (U 10 *n*

Character handling

Assign character table	ESC (t 30 *n dd*
Select character table	ESC t *n*
Select an international character set	ESC R *n*
Define download character	ESC & *nn*
Copy ROM to RAM	ESC : NUL *n* s
Select download character set	ESC % *n*
Enable printing of upper control codes	ESC 6
Enable upper control codes	ESC 7
Print data as characters	ESC (^ *nn*

Bit image

Selection and printing of bit image	ESC * *nn*
Select graphic mode	ESC (G 10 *n*
Print raster graphics	ESC . c v hm
8-bit single-density bit image	ESC K *nn*

8-bit double-density bit image	ESC L *nn*
8-bit double-speed double-density bit image	ESC Y *nn*
8-bit double-speed quad-density bit image	ESC Z *nn*
Reassign bit-image mode	ESC ? *nm*

Barcode

Print barcode	ESC (B *nn*

FX mode

Printer commands arranged by topic

The following section lists and describes all FX and LQ commands by topic.

Printer operation

Initialize printer	ESC @
Control paper loading/ejecting	ESC EM *n*
Delete last character	DEL
Cancel	CAN

Data control

Carriage return	CR
Backspace	BS

Vertical motion

Form feed	FF

Set page length in lines	ESC C *n*
Set page length in inches	ESC C NUL *n*
Set page length in defined units	ESC (C 20 *n*
Set or cancel top/bottom margin	ESC (c 40 *n*
Set skip over perforation	ESC N *n*
Cancel skip over perforation	ESC O
Line feed	LF
Select 1/8-inch line spacing	ESC 0
Select 7/72-inch line spacing	ESC 1
Select 1/6-inch line spacing	ESC 2
Reverse paper n/216 inch	ESC j
Select n/216-inch line spacing	ESC 3 *n*
Perform n/216-inch line spacing	ESC J
Tab vertically	VT
Set vertical tabs	ESC B *nn*
Set n/72-inch line spacing	ESC A *n*

Note:
Your printer will not print characters beyond one page in length (set with the ESC C or ESC C 0 commands), while an FX printer might print them.

Horizontal motion

Set absolute horizontal print position	ESC $ *n1 n2*
Set relative horizontal print position	ESC\ *n1 n2*
Set left margin	ESC l *n*
Set right margin	ESC Q *n*
Tab horizontally	HT

Set horizontal tabs	ESC D *nn*

Overall printing style

Select letter quality or draft	ESC x *n*

Note:
The print quality and speed cannot be changed even if you send the ESC x command.

Select typeface family	ESC k *n*
Master select	ESC ! *n*

Print size and character width

Select 10 cpi	ESC P
Select 12 cpi	ESC M
Turn proportional mode on/off	ESC p 1/0
Select condensed mode	SI
Cancel condensed mode	DC2
Select double-width mode (one line)	SO
Cancel double-width mode (one line)	DC4
Turn double-width mode on/off	ESC W 1/0
Turn double-height printing on/off	ESC w 1/0
Select condensed mode	ESC S1
Select double-width mode (one line)	ESC S0

Font enhancement

Select emphasized mode	ESC E
Cancel emphasized mode	ESC F

Select double-strike mode	ESC G
Cancel double-strike mode	ESC H

Note:
The ESC G and ESC E commands produce identical effects; you cannot obtain darker print by combining the two.

Select superscript/subscript mode	ESC S 0/1
Cancel superscript/subscript mode	ESC T
Select italic mode	ESC 4
Cancel italic mode	ESC 5
Turn underline mode on/off	ESC - 1/0

Word processing

Set intercharacter space	ESC SP *n*
Select character tables	ESC t *n*
Assign character tables	ESC (t 30 *n dd*
Select international character set	ESC R *n*
Printable code area expansion	ESC 6
Enable upper control codes	ESC 7
Define unit	ESC (U 10 n

User-defined characters

Define characters	ESC & *nn*

Note:
The appearance of characters defined using ESC & may differ slightly from an actual FX printer.

Copy ROM to RAM	ESC : NUL *n* s

Select download character set	ESC % *n*
Printable code area expansion	ESC I *n*

Bit image

Select graphics mode	ESC * m *n*
Selection and printing of bit image	ESC ^ m *n*
8-bit single-density bit image	ESC K *nn*
8-bit double-density bit image	ESC L *nn*
8-bit double-speed double-density bit image	ESC Y *nn*
8-bit double-speed quad-density bit image	ESC Z *nn*
Reassign bit-image mode	ESC ? *nm*

Barcode

Print barcode	ESC (B *nn*

PJL Commands

This section lists the available commands for the printer job language mode (PJL). For more information on PJL, refer to the Printer Job Language Technical Reference Manual from Hewlett-Packard.

COMMENT	@PJL COMMENT [words] [<CR>] <LF>
DEFAULT	@PJL DEFAULT [LPARM: ***] variable = value [<CR>] <LF>
DINQUIRE	@PJL DINQUIRE [LPARM: ***] variable [<CR>] <LF>
ECHO	@PJL ECHO [Words] [<CR>] <LF>

ENTER	@PJL ENTER LANGUAGE = *** [<CR>] <LF>
EOJ	@PJL EOJ [NAME= ***] [<CR>] <LF>
INFO	@PJL INFO read only variable [<CR>] <LF>
INITIALIZE	@PJL INITIALIZE [<CR>] <LF>
INQUIRE	@PJL INQUIRE [LPARM: ***] variable [<CR>] <LF>
JOB	@PJL JOB [NAME = ***] [START = ***] [END = ***] [<CR>] <LF>
OPMSG	@PJL OPMSG DISPLAY = *** [<CR>] <LF>
RDYMSG	@PJL RDYMSG DISPLAY = *** [<CR>] <LF>
RESET	@PJL RESET [<CR>] <LF>
SET	@PJL SET [LPARM: ***] variable = value [<CR>] <LF>
STMSG	@PJL STMSG DISPLAY = *** [<CR>] <LF>
UEL	<ESC>%-12345X
USTATUS	@PJL USTATUS variable = value [<CR>] <LF>
USTATUSOFF	@PJL USTATUSOFF [<CR>] <LF>
PJL	@PJL [<CR>] <LF>

I239X Emulation Commands

This section lists the printer commands supported in the I239X emulation mode. For more information on these commands, see IBM's 2390/2391 reference manual.

Page format

Printable area

Set page length in lines	ESC C n
Set page length in inches	ESC C NUL n
Set skip perforation	ESC N n
Cancel skip perforation	ESC O
Set horizontal margins	ESC X

Line spacing

Set line space to 1/8 inch	ESC 0
Set line space to 7/72 inch	ESC 1
Activate line spacing for text	ESC 2
Set line spacing for graphics (n/180, n/216, or n/360 inch)	ESC 3 n
Set line spacing for text (n/72 inch)	ESC A n

Unit definition

Set vertical units (1/180, 1/216, or 1/360 inch)	ESC [\

Tab

Set vertical tab stops	ESC B
Set default tab stops	ESC R
Set horizontal tab stops	ESC D

Paper feeding/print position motion

Carriage return	CR
Line feed	LF
Form feed	FF
Move paper vertically (n/180, n/216, or n/360 inch)	ESC J
Automatic line feed	ESC 5
Reverse line feed	ESC]
Backspace	BS
Space	SP
Horizontal tab	HT
Vertical tab	VT
Move current print position (1/120 inch)	ESC d
Set top of form	ESC 4

Text

Font selection

Select 10 pitch font	DC2
Select 12 pitch font	ESC:
Start 17 cpi printing	SI
Start 17 cpi printing	ESC SI
Proportional spacing	ESC P
Begin subscript/superscript	ESC S
End subscript/superscript	ESC T
Select font and pitch	ESC[I
Select print or font	ESC I
Select character set 2	ESC 6
Select character set 1	ESC 7
Select page code	ESC[T
Print one character	ESC ^
Print character from a code page	ESC \
Select character quality	ESC[d

Font enhancement

Continuous overscore	ESC_
Continuous underline	ESC-
Score select	ESC[-
Select print type style	ESC[@
Begin double-width printing by line	SO
Begin double-width printing by line	ESC SO
End double-width printing by line	DC4
Double-width printing	ESC W
Begin emphasized (bold) print	ESC E
End emphasized (bold) print	ESC F
Begin double-strike print	ESC G
End double-strike print	ESC H

Bit image

Normal-density bit image graphics	ESC K
Double-density bit image graphics (half speed)	ESC L
Double-density bit image graphics (normal speed)	ESC Y
High-density bit image graphics	ESC Z
Graphic print mode	ESC [g

Barcode

Barcode set up	ESC [f
Barcode transfer	ESC [P-

Auxiliary functions

Initialize

Set initial conditions	ESC [K

Data input control

Cancel 1 line	CAN

Auxiliary function

Select paper tray	ESC [F

AGM mode

Line spacing

Set line spacing for graphics (n/180, n/216, or n/360 inch)	ESC 3
Set line spacing for text (n/60 inch)	ESC A

Paper feeding/print position motion

Move paper vertically (n/180, n/216, or n/360 inch)	ESC J
Line feed	LF

Bit image

Normal-density bit image graphics	ESC K
Double-density bit image graphics (half speed)	ESC L
Double-density bit image graphics (normal speed)	ESC Y
High-density bit image graphics	ESC Z
Graphic print mode	ESC [g
Select graphic mode	ESC *

Appendix D

Working with Fonts

Printer and Screen Fonts D-2

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Printer and Screen Fonts

Fonts are installed on both the printer and the computer. The printer fonts, which reside in printer memory, are used by the printer to print text. Screen fonts, which are stored in your computer, are used to display text on screen to represent the fonts that will be printed.

Two separate sets of fonts are needed because the monitor and the printer have different requirements for producing fonts. The monitor normally uses bitmap fonts that are specially designed for the screen's resolution. A bitmap is a dot-by-dot representation of an image or character. The printer, however, uses an outline font that is created from a mathematical formula that describes the outline of each character. Using outline fonts allows the printer to render any character in the requested size.

Note:
The distinction between printer and screen fonts is not as important when you are using TrueType® fonts, which are included with Windows. TrueType is an outline font format that can be used by both the printer and the screen.

Available Fonts

The following table lists the fonts that are installed on your printer. The names of all the fonts appear in your software's font list if you are using the driver provided with the printer. If you are using a different driver, all of these fonts may not be available.

The fonts provided with the printer are shown below, according to the emulation mode.

LJ4/GL2 mode

Font name	Family	HP equivalent
Dutch 801 SWC	Medium, Bold, Italic, Bold Italic	CG Times
Zapf Humanist 601 SWC	Medium, Bold, Italic, Bold Italic	CG Omega
Ribbon 131 SWC	-	Coronet
Clarendon Condensed SWC	-	Clarendon Condensed
Swiss 742 SWC	Medium, Bold, Italic, Bold Italic, Condensed, Condensed Bold, Condensed Italic, Condensed Bold Italic	Univers
Incised 901 SWC	Medium, Bold, Italic	Antique Olive
Original Garamond SWC	Medium, Bold, Italic, Bold Italic	Garamond
Audrey Two SWC	-	Marigold
Flareserif 821 SWC	Medium, Extra Bold	Albertus
Swiss 721 SWM	Medium, Bold, Italic, Bold Italic	Arial
Dutch 801 SWM	Medium, Bold, Italic, Bold Italic	Times New
Symbol Set SWM	-	Symbol
More WingBats SWM	-	Wingdings
Courier SWC	Medium, Bold, Italic, Bold Italic	Courier
Letter Gothic SWC	Medium, Bold, Italic	Letter Gothic
Line Printer	-	Line Printer
OCR A	-	-

Font name	Family	HP equivalent
OCR B	-	-
Code 39	9.37 pitch, 4.69 pitch	-
EAN/UPC	Bold, Medium	-
Dutch 801 SWA	Medium, Bold, Italic, Bold Italic	Times
Swiss 721 SWA	Medium, Bold, Italic, Bold Italic	Helvetica
Courier SWA	Medium, Bold, Italic, Bold Italic	CourierPS
Symbol Set SWA	-	SymbolPS
Zapf Calligraphic 801 SWA	Medium, Bold, Italic, Bold Italic	Palatino Roman
ITC Avant Garde SWA	Medium, Bold, Italic, Bold Italic	ITC Avant Garde Gothic
ITC Bookman SWA	Medium, Bold, Italic, Bold Italic	ITC Bookman
Swiss 721 Narrow SWA	Medium, Bold, Italic, Bold Italic	Helvetica Narrow
ITC Zapf Chancery SWA Italic	-	ITC Zapf Chancery Medium Italic
ITC Zapf Dingbats SWA	-	ITC Zapf Dingbats
Century Schoolbook SWA	Medium, Bold, Italic, Bold Italic	New Century Schoolbook

When selecting fonts in your software program, choose the font name listed in the HP equivalent column.

Note:
Depending on the print density, or on the quality or color of the paper, OCR A, OCR B, Code 39, FAN/UPC fonts may not be readable. Print a sample and make sure the fonts can be read before printing large quantities.

ESC/P 2 and FX modes

Font name	Family
EPSON Roman	-
EPSON Sans serif	-
Courier SWC	Medium, Bold
EPSON Prestige	-
EPSON Script	-
Swiss 721 SWM*	Medium, Bold
Dutch 801 SWM*	Medium, Bold
Letter Gothic SWC	Medium, Bold

* Available only in ESC/P 2 mode.

Font name	Family
OCR A	-
OCR B	-

Note:
Depending on the print density, or on the quality or color of the paper, OCR A and OCR B fonts may not be readable. Print a sample and make sure the fonts can be read before printing large quantities.

I239X mode

Font name	Family
EPSON Sans serif	-
Courier SWC	Medium, Bold
EPSON Prestige	-
EPSON Gothic	-
EPSON Presentor	-
EPSON Orator	-
EPSON Script	-

Font name	Family
OCR B	-

Note:
Depending on the print density, or on the quality or color of the paper, OCR B font may not be readable. Print a sample and make sure the font can be read before printing large quantities.

You can print font samples using the Remote Control Panel utility. To print font samples for viewing, follow the steps below:

1. Make sure there is paper in the printer.

2. Launch the Remote Control Panel utility. For instructions, see "Accessing the Remote Control Panel utility" on page 4-4

3. Click the File menu and choose the font sample that you want to print.

Adding and Selecting Fonts

Adding more fonts

Fonts that reside on your computer's hard disk can be downloaded, or transferred, to the printer so they can be printed. Downloaded fonts, also called soft fonts, remain in printer memory until you turn off the printer or otherwise reinitialize it. If you plan on downloading many fonts, make sure your printer has sufficient memory.

Downloading fonts

Most font packages make it easy to install fonts by providing their own installer. The installer gives you the option of having the fonts automatically downloaded whenever you start your computer or having fonts downloaded only when you need to print a particular font.

If you're running Windows, you can also install fonts from within the Fonts window. To access this window, open the Control Panel and double-click the Fonts icon. Once installed, the fonts are available in all your Windows applications.

Selecting fonts

Whenever possible select fonts from the font list in your application. See your software documentation for instructions.

If you are sending unformatted text to the printer directly from DOS or if you are using a simple software package that does not include font selection, you can select fonts by clicking the Type button in the Remote Control Panel's main screen when in the LJ4 mode. Click the Others button when in the ESC/P 2, FX, or I239X mode.

EPSON BarCode Fonts

EPSON BarCode Fonts let you easily create and print many types of barcodes.

Normally, barcode creation is a laborious process requiring you to specify various command codes, such as Start bar, Stop bar and OCR-B, in addition to the barcode characters themselves. However, EPSON BarCode Fonts are designed to add such codes automatically, allowing you to easily print barcodes that conform to a variety of barcode standards.

EPSON BarCode Fonts support the following types of barcodes:

Barcode Standard	EPSON BarCode	OCR-B	Check Digit	Comments
EAN	EPSON EAN-8	Yes	Yes	Creates EAN (abbreviated version) barcodes.
	EPSON EAN-13	Yes	Yes	Creates EAN (standard version) barcodes.
UPC-A	EPSON UPC-A	Yes	Yes	Creates UPC-A barcodes.
UPC-E	EPSON UPC-E	Yes	Yes	Creates UPC-E barcodes.
Code 39	EPSON Code 39	No	No	Printing of OCR-B and check digits can be specified with the font name.
	EPSON Code 39 CD	No	Yes	
	EPSON Code 39 CD Num	Yes	Yes	
	EPSON Code 39 Num	Yes	No	

Barcode Standard	EPSON BarCode	OCR-B	Check Digit	Comments
Code 128	EPSON Code 128	No	Yes	Creates Code 128 barcodes.
Interleaved 2 of 5 (ITF)	EPSON ITF	No	No	Printing of OCR-B and check digits can be specified with the font name.
	EPSON ITF CD	No	Yes	
	EPSON ITF CD Num	Yes	Yes	
	EPSON ITF Num	Yes	No	
Codabar	EPSON Codabar	No	No	Printing of OCR-B and check digits can be specified with the font name.
	EPSON Codabar CD	No	Yes	
	EPSON Codabar CD Num	Yes	Yes	
	EPSON Codabar Num	Yes	No	

System requirements

To use EPSON BarCode Fonts, your computer system should meet the following requirements:

Printer: EPSON EPL-5800/EPL-5700i/EPL-5700L/ EPL-N1600/EPL-N4000/EPL-C8000/ EPL-N2700/EPL-C8200/EPL-N4000+/ EPL-N2050 or later printers which have EPSON BarCode Fonts

Computer: IBM PC series or IBM compatible with an i386SX or higher CPU

Operating system:	Microsoft Windows 98/95, NT 3.5x/4.0
Hard disk:	15 to 30 KB free space, depending on the font.
Printer driver:	EPSON EPL-5800 Advanced, EPSON EPL-5700 Advanced, EPSON EPL-N1600 Advanced, EPSON EPL-N4000 Advanced, EPSON EPL-C8000 Advanced, EPSON EPL-N2700 Advanced, EPL-C8200 Advanced, EPL-N4000; Advanced, EPL-N2050 Advanced or later drivers which have EPSON BarCode Fonts

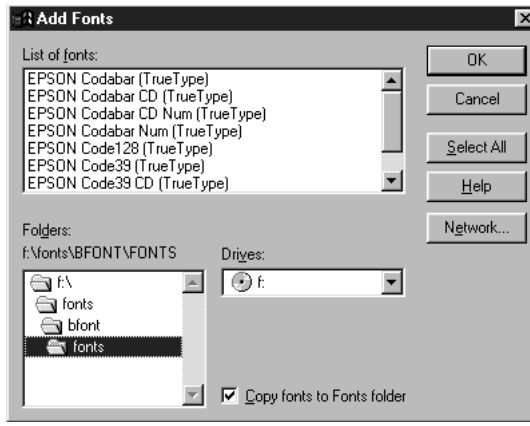
Note:
EPSON BarCode Fonts can only be used with EPSON printer drivers.

Installing EPSON BarCode Fonts

Follow these steps to install EPSON BarCode Fonts. The procedure described here is for installation in Windows NT 4.0; the procedure for other Windows operating systems is nearly the same.

1. Turn on the computer and start Windows.
2. Insert the CD-ROM or floppy disk containing the BarCode Fonts into the appropriate drive.
3. Click Start, point to Settings, then click Control Panel.
4. Double click Fonts.

5. From the File menu, select Install New Font.



6. Select the appropriate CD-ROM or floppy drive, then select the BarCode Fonts folder from the Folders list.

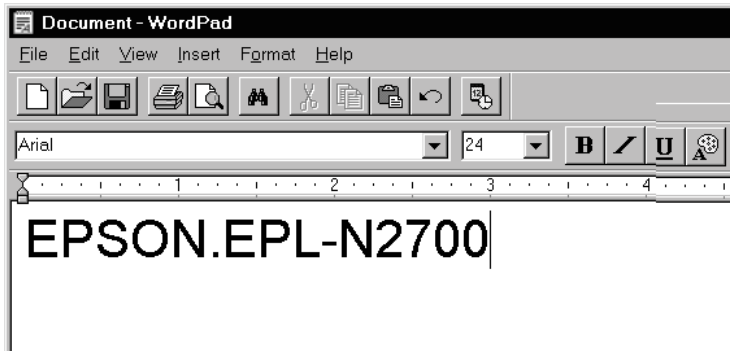
7. In the List of fonts box, select the BarCode Font you want to install, or click the Select All button to install all EPSON BarCode Fonts.

8. Click OK. The selected EPSON BarCode Fonts are installed in the Windows Fonts folder.

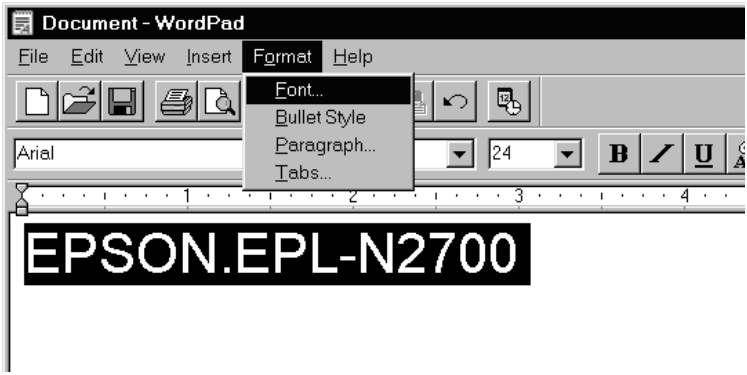
Printing with EPSON BarCode Fonts

Follow these steps to create and print barcodes using EPSON BarCode Fonts. The application featured in these instructions is Microsoft WordPad. The actual procedure may differ slightly when printing from other applications.

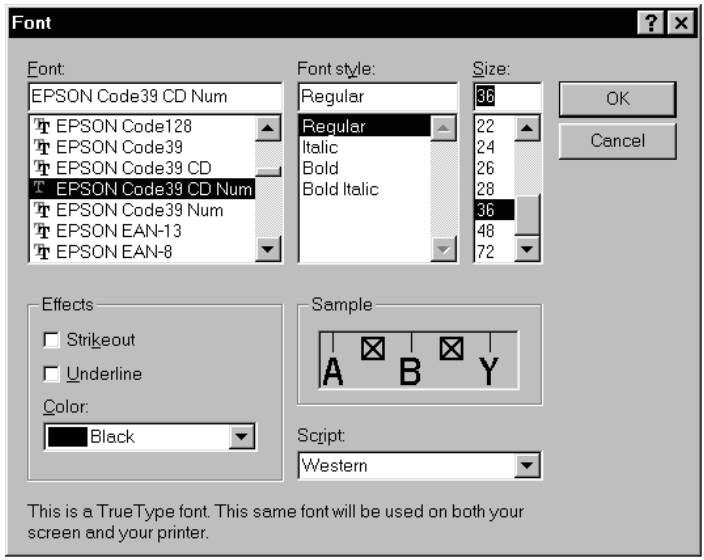
1. Open a document in your application and enter the characters you want to convert to a barcode.



2. Select the characters, then select Font from the Format menu.

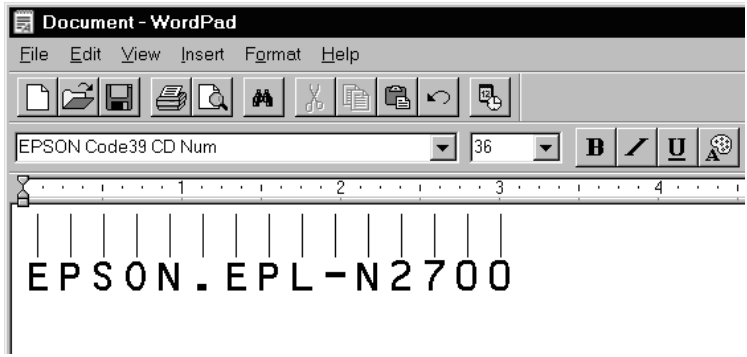


3. Select the EPSON BarCode Font you want to use, then set the font size and click OK.



Note:
In Windows NT 3.5x and NT 4.0, you cannot use font sizes larger than 96 points when printing barcodes.

4. The characters you selected appear as barcodes similar to those shown below.



5. Select Print from the File menu, then select your EPSON printer and click Properties. Make the following printer driver settings:

Print Quality	600 dpi
Toner Save mode	Off
Zoom Options	Unchecked
Graphic Mode	Printer

6. Click OK to print the barcode.

   Note:
   If there is an error in the barcode character string, such as inappropriate data, the barcode will be printed as it appears on the screen, but it cannot be read by a barcode reader.

Notes on inputting and formatting barcodes

Please note the following when inputting and formatting barcode characters:

- ❏ Do not apply shading or special character formatting, such as bold, italic, or underline.
- ❏ Print barcodes in black and white only.
- ❏ When rotating characters, only specify rotation angles of 90°, 180° and 270°.
- ❏ Turn off all automatic character and word spacing settings in your application.
- ❏ Do not use features in your application which enlarge or reduce the size of characters in only the vertical or horizontal direction.
- ❏ Turn off your application's auto-correct features for spelling, grammar, spacing, etc.

- ❏ To more easily distinguish barcodes from other text in your document, set your application to show text symbols, such as paragraph marks, tabs, etc.

- ❏ Because special characters such as Start bar and Stop bar are added when an EPSON BarCode Font is selected, the resulting barcode may have more characters than were originally input.

- ❏ For best results, use only the font sizes recommended in "BarCode Font specifications" on page D-15 for the EPSON BarCode Font you are using. Barcodes in other sizes may not be readable with all barcode readers.

Note:
Depending on the print density, or on the quality or color of the paper, barcodes may not be readable with all barcode readers. Print a sample and make sure the barcode can be read before printing large quantities.

BarCode Font specifications

This section contains details on the character input specifications for each EPSON BarCode Font.

EPSON EAN-8

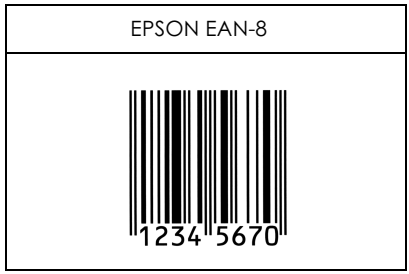
- ❏ EAN-8 is an eight-digit abbreviated version of the EAN barcode standard.
- ❏ Because the check digit is added automatically, only 7 characters can be input.

Character type	Numbers (0 to 9)
Number of characters	Up to 7 characters
Font size	52 pt to130 pt (up to 96 pt in Windows NT). Recommended sizes are 52 pt, 65 pt (standard), 97.5 pt and 130 pt.

The following codes are inserted automatically and need not be input by hand:

- ❏ Left/right margin
- ❏ Left/right guard bar
- ❏ Center bar
- ❏ Check digit
- ❏ OCR-B

Print Sample



EPSON EAN-13

- ❏ EAN-13 is the standard 13-digit EAN barcode.
- ❏ Because the check digit is added automatically, only 12 characters can be input.

Character type	Numbers (0 to 9)
Number of characters	Up to 12 characters
Font size	60 pt to150 pt (up to 96 pt in Windows NT). Recommended sizes are 60 pt, 75 pt (standard), 112.5 pt and 150 pt.

The following codes are inserted automatically and need not be input by hand:

- ❏ Left/right margin
- ❏ Left/right guard bar
- ❏ Center bar
- ❏ Check digit
- ❏ OCR-B

Print Sample

EPSON EAN-13

EPSON UPC-A

- ❏ UPC-A is the UPC-A standard barcode specified by the American Universal Product Code (UPC Symbol Specification Manual).
- ❏ Only regular UPC codes are supported. Supplementary codes are not supported.

Character type	Numbers (0 to 9)
Number of characters	Up to 11 characters
Font size	60 pt to150 pt (up to 96 pt in Windows NT). Recommended sizes are 60 pt, 75 pt (standard), 112.5 pt and 150 pt.

The following codes are inserted automatically and need not be input by hand:

- ❏ Left/right margin
- ❏ Left/right guard bar
- ❏ Center bar
- ❏ Check digit
- ❏ OCR-B

Print Sample

EPSON UPC-A

EPSON UPC-E

- ❏ UPC-E is the UPC-A zero-suppression (deletes extra zeros) barcode specified by the American Universal Product Code (UPC Symbol Specification Manual).

Character type	Numbers (0 to 9)
Number of characters	Up to 6 characters
Font size	60 pt to150 pt (up to 96 pt in Windows NT). Recommended sizes are 60 pt, 75 pt (standard), 112.5 pt and 150 pt.

The following codes are inserted automatically and need not be input by hand:

- ❏ Left/right margin
- ❏ Left/right guard bar
- ❏ Check digit
- ❏ OCR-B
- ❏ The numeral "0"

Print Sample

EPSON UPC-E

EPSON Code 39

- ❏ Four Code 39 fonts are available, allowing you to enable and disable the automatic insertion of check digits and OCR-B.
- ❏ The height of the barcode is automatically adjusted to 15% or more of its total length, in conformance to the Code 39 standard. For this reason, it is important to keep at least one space between the barcode and the surrounding text to prevent overlapping.
- ❏ Spaces in Code 39 barcodes should be input as "_" underbars.
- ❏ When printing two or more barcodes on one line, separate the barcodes with a tab, or select a font other than a BarCode Font and input the space. If a space is input while a Code 39 font is selected, the barcode will not be correct.

Character type	Alphanumeric characters (A to Z, 0 to 9) Symbols (-. space $ / + %)
Number of characters	No limit
Font size	When OCR-B is not used: 26 pt or more (up to 96 pt in Windows NT) Recommended sizes are 26 pt, 52 pt, 78 pt and 104 pt. When OCR-B is used: 36 pt or more (up to 96 pt in Windows NT) Recommended sizes are 36 pt, 72 pt, 108 pt and 144 pt.

The following codes are inserted automatically and need not be input by hand:

- ❏ Left/right quiet zone
- ❏ Check digit
- ❏ Start/Stop character

Print Sample

EPSON Code 39	EPSON Code 39 CD
EPSON Code 39 Num	EPSON Code 39 CD Num

EPSON Code 128

- ❏ Code 128 fonts support code sets A, B, and C. When the code set of a line of characters is changed in the middle of the line, a conversion code is automatically inserted.

- ❏ The height of the barcode is automatically adjusted to 15% or more of its total length, in conformance to the Code 128 standard. For this reason, it is important to keep at least one space between the barcode and the surrounding text to prevent overlapping.

- ❏ Some application software automatically deletes the spaces at the end of lines or changes multiple spaces into tabs. Barcodes containing spaces may not be correctly printed from applications that automatically delete spaces from the ends of lines or change multiple spaces into tabs.

- ❏ When printing two or more barcodes on one line, separate the barcodes with a tab, or select a font other than a BarCode Font and input the space. If a space is input while Code 128 is selected, the barcode will not be correct.

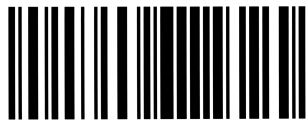
Character type	All ASCII characters (95 in total)
Number of characters	No limit
Font size	26 pt to 104 pt (up to 96 pt in Windows NT.) Recommended sizes are 26 pt, 52 pt, 78 pt and 104 pt.

The following codes are inserted automatically and need not be input by hand:

- ❏ Left/right quiet zone
- ❏ Start/Stop character
- ❏ Check digit
- ❏ Change code set character

Print Sample

EPSON Code 128



EPSON ITF

- ❏ The EPSON ITF fonts conform to the USS Interleaved 2-of-5 standard (American).
- ❏ Four EPSON ITF fonts are available, allowing you to enable and disable the automatic insertion of check digits and OCR-B.
- ❏ The height of the barcode is automatically adjusted to 15% or more of its total length, in conformance to the Interleaved 2-of-5 standard. For this reason, it is important to keep at least one space between the barcode and the surrounding text to prevent overlapping.
- ❏ Interleaved 2 of 5 treats every two characters as one set. When there are an odd number of characters, EPSON ITF fonts automatically add a zero to the beginning of the character string.

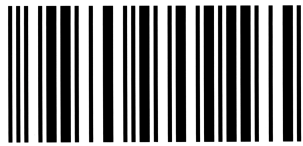
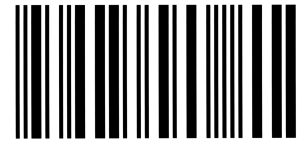
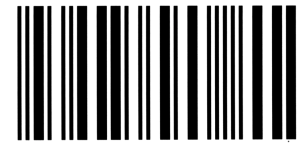
Character type	Numbers (0 to 9)
Number of characters	No limit
Font size	When OCR-B is not used: 26 pt or more (up to 96 pt in Windows NT) Recommended sizes are 26 pt, 52 pt, 78 pt and 104 pt. When OCR-B is used: 36 pt or more (up to 96 pt in Windows NT) Recommended sizes are 36 pt, 72 pt, 108 pt and 144 pt.

The following codes are inserted automatically and need not be input by hand:

- ❏ Left/right quiet zone
- ❏ Start/Stop character
- ❏ Check digit

❏ The numeral "0" (added to the beginning of character strings as needed)

Print Sample

EPSON ITF	EPSON ITF CD
	
EPSON ITF Num	EPSON ITF CD Num
0 1 2 3 4 5 6 7	 1 2 3 4 5 6 7 0

EPSON Codabar

❏ Four Codabar fonts are available, allowing you to enable and disable the automatic insertion of check digits and OCR-B.

❏ The height of the barcode is automatically adjusted to 15% or more of its total length, in conformance to the Codabar standard. For this reason, it is important to keep at least one space between the barcode and the surrounding text to prevent overlapping.

❏ When either a Start or a Stop character is input, Codabar fonts automatically insert the complimentary character.

❏ If neither a Start nor a Stop character is input, these characters are automatically input as the letter *A*.

Character type	Numbers (0 to 9) Symbols (- $: / . +)
Number of characters	No limit
Font size	When OCR-B is not used: 26 pt or more (up to 96 pt in Windows NT) Recommended sizes are 26 pt, 52 pt, 78 pt and 104 pt. When OCR-B is used: 36 pt or more (up to 96 pt in Windows NT) Recommended sizes are 36 pt, 72 pt, 108 pt and 144 pt.

The following codes are inserted automatically and need not be input by hand:

- ❏ Left/right quiet zone
- ❏ Start/Stop character (when not input)
- ❏ Check digit

Print Sample

EPSON Codabar	EPSON Codabar CD
EPSON Codabar Num	EPSON Codabar CD Num

Appendix E

d

Appendix E

Contacting Customer Support

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

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

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

Printer model

Brand and model of your computer

Printer software version
(Click Version Info on the printer driver's Basic Settings tab.)

Operating system (Windows 98/95, NT 4.0, Mac OS 8.1, etc.) you are using

Version of applications you normally use with your printer

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

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

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Printer software version
(Click Version Info on the printer driver's Basic Settings tab.)

Operating system (Windows 98/95, NT 4.0, Mac OS 8.1, etc.) you are using

Version of applications you normally use with your printer

For United Kingdom and the Republic of Ireland Users

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

Support Via the World Wide Web

- ❏ For information on the latest EPSON products, software drivers, online user guides and answers to frequently asked questions:

  http://www.epson.co.uk

- ❏ To e-mail EPSON Technical Support:

http://www.epson.co.uk/support/email/

- ❏ For a full list of EPSON Customer and Warranty Support services:

  http://www.epson.co.uk/support/

Support Via Telephone

Our Customer and Warranty Support teams can be contacted by calling 0870 163 7766 in the UK or 0044 0870 163 7766 from the Republic of Ireland. They can provide the following services:

- ❏ Technical information on installing, configuring and operating your EPSON products

- ❏ Arranging for faulty EPSON products to be repaired within the warranty period

Before you call, please have the following information ready:

Product Model

Serial number of your product
(The serial number label is on the back of the product.)

Brand and model of your computer

Driver software version
(Click Version Info on the printer driver's Basic Settings tab.)

Operating System
(For example, Windows 98/95, NT 4.0, or Mac OS 8.1)

Applications
The applications you normally use with your printer and their version numbers.

Pre Sales Enquiry Desk

Our Enquiry Desk team can be contacted by calling 0800 220546 in the UK or 1 800 409132 from the Republic of Ireland, by faxing 01442 227271 in the UK or 0044 1442 227271 from the Republic of Ireland, and via e-mail at info@epson.co.uk. They can provide the following information:

- ❏ Pre sales information and literature on new EPSON products (also available via our world wide web site at http://www.epson.co.uk)
- ❏ Where to purchase genuine EPSON consumables, accessories, and options

For Australian Users

EPSON Australia wishes to provide you with a high level of Customer Service. As well as this *Reference Guide*, we provide the following sources for obtaining information:

EPSON FAXBACK

EPSON FAXBACK will fax you the latest specifications and pricing for most EPSON products offered in Australia. There is also technical information including details of the latest software and drivers available. Phone (02) 9903 9075 and the system will guide you through a number of choices before faxing the information to your fax machine.

EPSON Bulletin Board System

This is where you can download the latest software and drivers. Visit the BBS to check out the latest versions. If you have a modem, connect to our BBS at (02) 9417 5090.

Internet URL http://www.epson.com.au

Access the EPSON Australia World Wide Web pages. Worth taking your modem here for the occasional surf! You can get the same information as offered on the EPSON FAXBACK and the EPSON Bulletin Board, plus more.

Your Dealer

Don't forget that your dealer can often help identify and resolve problems. The dealer should always be the first to call for advice on problems. They can often solve problems quickly and easily as well as give you advice on the next step to take.

EPSON Helpdesk

EPSON Helpdesk is provided as a final backup to make sure our clients have access to advice. Operators on the Helpdesk can aid you in diagnosing hardware and software problems. They can also advise you on the latest EPSON products and where the nearest dealer or service agent is located. Many types of queries are answered here.

The Helpdesk numbers are:

Phone: (02) 9903 9040
Fax: (02) 9903 9189

We encourage you to have all the relevant information at hand when you ring. The more information you prepare, the faster we can help solve the problem. This information includes the *Reference Guide* for your EPSON product, type of computer, operating system, application programs, and any other information you feel is required.

For India Users

World Wide Web (www.epson.co.in)

- ❏ Information on product specifications, drivers for download, Frequently Asked Questions (FAQs), Product Enquiry, and Technical Query are available.

Epson India Bangalore Head Office

Phone: (080) 5095465
Fax: (080) 5095474

For Malaysia Users

World Wide Web (www.epson.com.my)

- ❏ Information on product specifications, drivers for download, Frequently Asked Questions (FAQs), and Email Enquiry are available.

Epson Trading Shah Alam Head Office

Phone: (03) 5191366
Fax: (03) 5191281

For Singapore Users

Sources of information, support and services available from Epson Singapore are:

World Wide Web (www.epson.com.sg)

Information on product specifications, drivers for download, Frequently Asked Questions (FAQs), Sales Enquiry, and Technical Email Support are available.

Epson HelpDesk

Phone: (065) 8323111

Our helpdesk team could help you with the following over the phone:

- ❏ Sales enquiry and product information
- ❏ Product usage questions or problems
- ❏ Enquiries on repair service and warranty

For Hong Kong Users

To obtain technical support as well as other after-sales services, users are welcome to contact EPSON Hong Kong Limited.

Internet home page

EPSON Hong Kong has established a local home page in both Chinese and English on the Internet to provide users with the following information:

- ❏ Product information

- ❏ Answers to Frequently Asked Questions (FAQs)
- ❏ Latest versions of EPSON printer drivers

Users can access our World Wide Web home page at:
http://www.epson.com.hk

Electronic bulletin board system

An electronic bulletin board system (BBS) is also available to obtain printer information and the latest versions of printer drivers. You can log on to the following number for the BBS service:

BBS: (852) 2827-4244

Technical Support Hotline

You can also contact our technical staff at the following telephone and fax numbers:

Phone: (852) 2585-4399
Fax: (852) 2827-4383

For Philippines Users

To obtain technical support as well as other after-sales services, users are welcome to contact the EPSON Philippines Representative Office at the telephone and fax numbers below:

Phone: (632) 813-6552
Fax: (632) 813-6545
BBS: (632) 814-0595

Glossary

ASCII
American Standard Code for Information Interchange. A standardized way of assigning codes to characters and control codes. This system is widely used by manufacturers of computers, printers, and software.

bitmap font
The dot-by-dot representation of a font. Bitmap fonts are displayed on computer screens and printed on dot matrix printers. See *outline font*.

buffer
See *memory*.

character set
A collection of letters, numbers, and symbols used in a particular language.

cpi (characters per inch)
A measure of the size of fixed-width text characters.

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

developer cartridge
A component of the printer that contains the toner that creates the printed image on paper.

dots per inch (dpi)
The number of dots per 25.4 mm (1 inch) is a measure of printer resolution. The higher the number of dots, the higher the resolution or print quality.

download
To transfer information from the computer to the printer.

dpi
See *dots per inch*.

driver
The part of a software program that converts commands from the application program into commands used by the printer. Also known as the *printer driver*.

emulation
See *printer emulation*.

fixed-width font
A font whose characters are allotted the same amount of horizontal space, no matter the width of the character. Thus, the uppercase *M* receives the same amount of space as the letter *l*.

font
A set of characters and symbols that share a common typographic design and style.

halftone
A grayscale image that is composed of small dots. The dots can be close together to create black or more widely spaced to create gray or white areas in the image. Newspaper photographs are common examples of halftones.

initialization
The act of returning the printer to its defaults (fixed set of conditions).

interface
The connection between the printer and the computer. The parallel interface of this printer complies to the IEEE 1284 Parallel Interface standard that supports the Compatibility, Nibble, and ECP modes. The USB interface is a serial interface that complies to Microsoft Plug and Play (PnP) specification. With the use of a USB hub, multiple USB peripherals can be connected to the computer at the same time.

landscape
Printing that is oriented sideways on the page. This orientation gives you a page that is wider than it is high and is useful for printing spreadsheets.

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

orientation
Refers to the direction in which characters are printed on a page. This direction is either portrait, like this page, or landscape, in which the page is rotated 90°.

outline font
A font whose outline is described mathematically, allowing it to be rendered (printed or drawn) smoothly at any size.

PCL
The command language built into the Hewlett-Packard LaserJet series printers.

photoconductor unit
A component of the printer that contains a light-sensitive print drum which permanently fixes the toner onto paper.

pitch
A measure of the number of *characters per inch* (cpi) for fixed-width fonts.

portrait
Printing that is oriented upright on the page (as opposed to landscape, in which the printing is oriented sideways on the page). This is the standard orientation for printing letters or documents.

printer driver
See *driver*.

printer emulation
A set of operating commands that determines how data sent from the computer is interpreted and acted upon. Printer emulations replicate existing printers, such as the HP LaserJet 4.

proportional font
A font whose characters have varying amounts of horizontal space depending on the width of the character. Thus, the uppercase *M* takes up more horizontal space than the lowercase *l*.

RAM
Random Access Memory (RAM) is where temporary information is stored.

reset
To refresh the printer's memory and erase the current print jobs.

resolution
A measure of the fineness and clarity of images produced by the printer or monitor. Printer resolution is measured in *dots per inch*. Monitor resolution is measured in pixels.

RITech
Resolution Improvement Technology. A feature that smooths the jagged edges of printed lines or shapes.

ROM
Read Only Memory (ROM) is where permanent information is stored.

status sheet
A report that lists the printer settings and other printer information.

symbol set
A collection of symbols and special characters. Symbols are assigned to specific codes in a character table.

TrueType
An outline font format that was developed jointly by Apple® Computer and Microsoft Corporation. TrueType fonts are outline fonts that can be easily resized for screen display or for printing.