EPSON®

24-pin Dot Matrix Printer
PLQ-20/PLQ-20M

Reference Guide

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Chapter 1

Setting up the Printer

Unpacking the Printer

These items are included in the box with your printer.
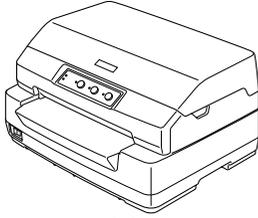
printer

power code
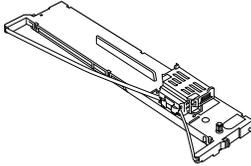
ribbon cartridge
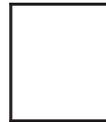
User's Guide

Remove the protective materials

Follow the directions written on the cardboard box to remove the protective materials.

Save all packing and protective materials in case you need to ship the printer in the future.

Assembling the Printer

1. Make sure the printer is turned off and unplugged.

2. Hold both sides of the printer cover and move it upward to open it.
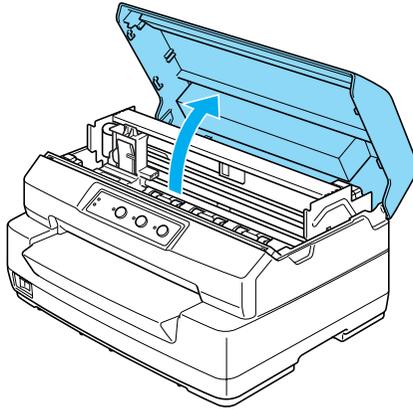
3. Push the release lever to move the upper mechanism forward. Make sure that you push the lever until it clicks.
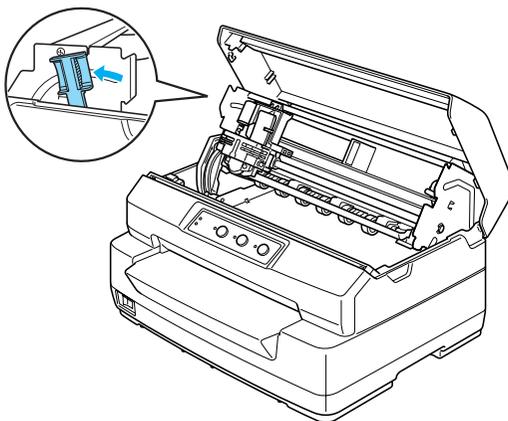
4. Slide the print head to the middle of the printer by hand.
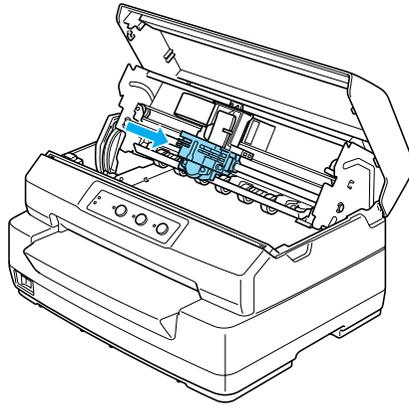
5. Remove the ribbon cartridge from the package.

6. Place the plastic hooks on the ribbon cartridge into the slots of the printer. Then press both sides of the cartridge until it clicks into place.
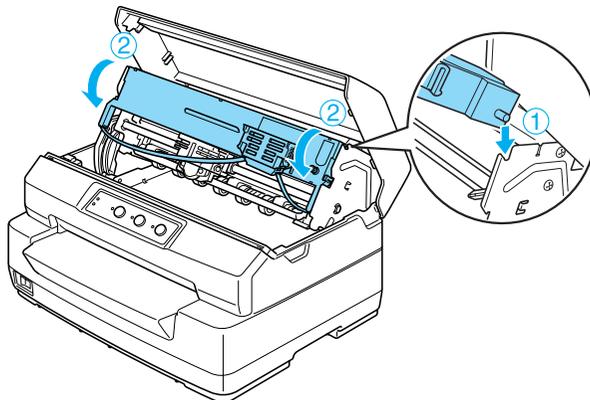
7. Hold both sides of the ribbon guide and pull it down until it is out of the cartridge.
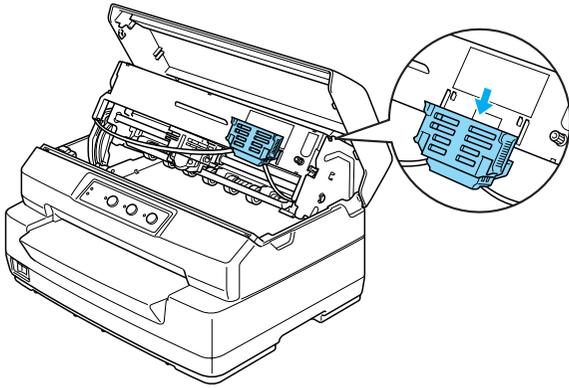
8. Put the ribbon guide at the bottom of the print head and push it up until it clicks into place.
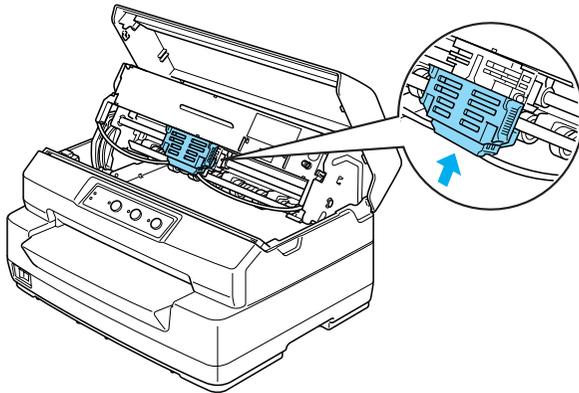
9. Turn the ribbon-tightening knob to help feed the ribbon into place.
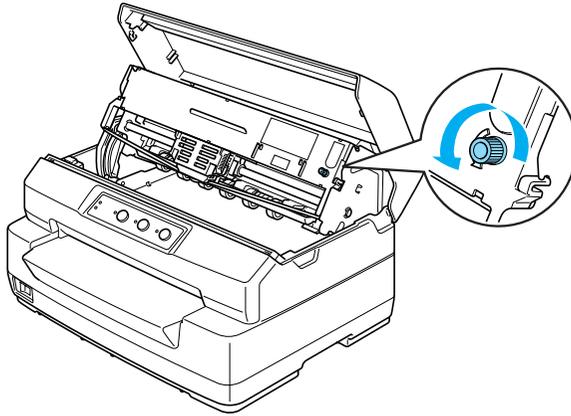
> **Caution:**
> *The ribbon should not be twisted or creased.*

10. Pull the release lever back to move the upper mechanism to its original position. Make sure that you pull the lever until it clicks.
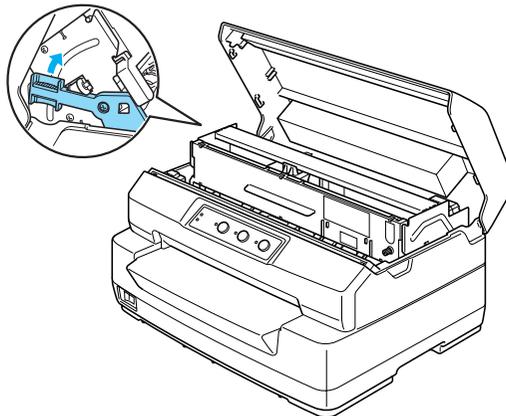
11. Close the printer cover.

Connecting the Printer to Your Computer

Connecting the printer

Make sure both the printer and computer are turned off, then connect the interface into the printer and computer. Use USB, Serial, or Parallel cable to connect the printer and computer.

Note:
The interface cable connectors have only one correct orientation. Ensure the correct orientation of a connector before inserting it into the appropriate port.

USB

Serial

Parallel
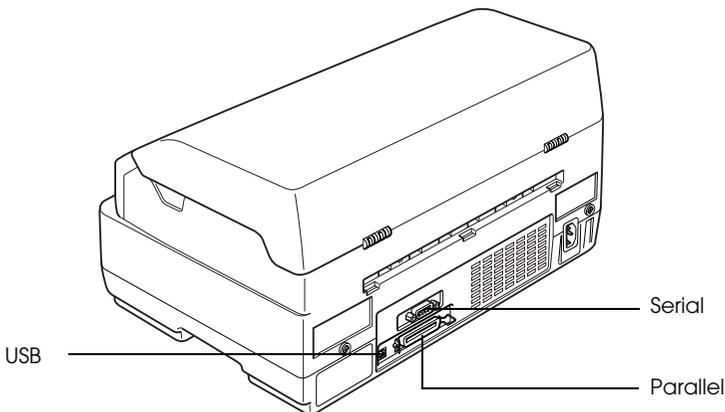
Plugging in the Printer

Make sure the printer is turned off, then plug the power cord into the printer's AC inlet and a properly grounded electrical outlet.
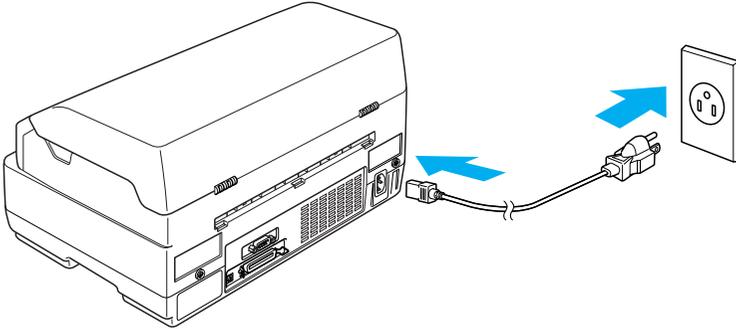
Installing the Printer Software

Installing the software in Windows XP, Me, or 2000

Note:
❏ *Installing the printer software for Windows XP or 2000 may require administrator privileges. If you have problems, ask your administrator for more information.*

❏ *Turn off all virus protection programs before installing the printer software.*

1. Make sure that the printer is turned off, then insert the User CD-ROM into the CD-ROM drive.
   The SOFTWARE LICENSE AGREEMENT dialog box appears.

2. Read the license agreement. If you agree with the terms, click Agree.

3. Click Install and then follow the on-screen instructions.
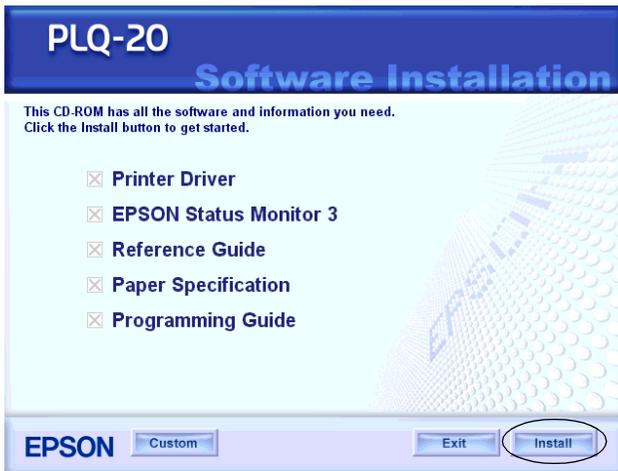
4. After you install the driver, change the software setting from PR2 to ESC/P. See "Changing default settings" on page 94 for details.

Installing the software in Windows 98 or Windows NT 4.0

Note:
❏ *Installing the printer software for Windows NT 4.0 may require administrator privileges. If you have problems, ask your administrator for more information.*

❏ *The examples in the following section are from the Windows 98 operating system. They may vary in appearance from what actually appears on your screen; however, the instructions are the same.*

1. Make sure that the printer is turned off, then insert the User CD-ROM into the CD-ROM drive. The SOFTWARE LICENSE AGREEMENT dialog box appears.

   Note:
   If the SOFTWARE LICENSE AGREEMENT dialog box does not appear, double-click Epsetup.exe *in the CD-ROM.*

2. Read the license agreement. If you agree with the terms, click Agree.

3. Click the name of the printer that you have.

4. Click Install and then follow the on-screen instructions.

5. When prompted, insert your Windows CD-ROM, and click OK.
   When the Windows installation screen is displayed, close the screen to continue with the driver installation.

   Note:
   ❏ *If your PC shipped with Windows pre-installed, Setup may complete without requiring the Windows CD-ROM, and your printer is ready to use.*

   ❏ *If you receive a message saying the drive is not accessible, click* Cancel *and try again.*

   ❏ *If you are using Windows NT, go to step 7.*

6. Click Browse to select the appropriate path for the printer driver, then click OK and follow the instruction on the screen.
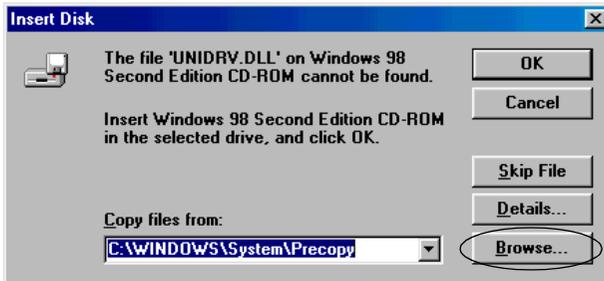
Note:
If you are using Windows NT, insert your Windows CD-ROM when prompted on the screen.

7. Select the appropriate file in the folder, then click OK.
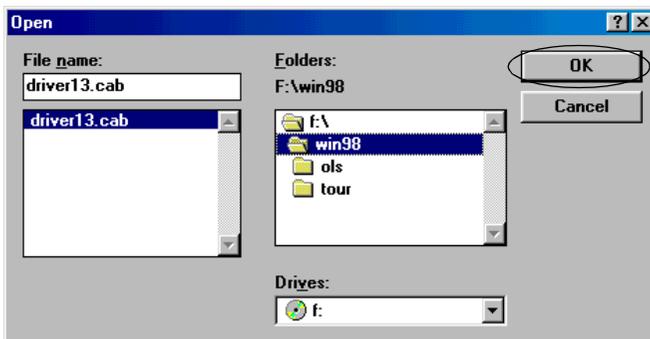
8. When prompted, insert the User CD-ROM, then click OK.
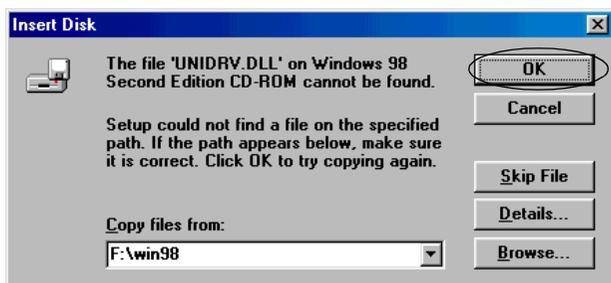
Note:

❏ *If you receive a message saying the drive is not accessible, click* Cancel *and try again.*

❏ *If a "System Error" message appears, click* Cancel. *The exact message differs depending on your version of Windows.*

❏ *If you are using Windows NT, you do not need to specify a path.*

❏ *If you are using Windows 98, the Printer Utility Setup may start. If it does, follow the instructions on the screen.*

9. Setup is complete. Your printer is ready to use.

10. After you install the driver, change the software setting from PR2 to ESC/P. See "Changing default settings" on page 94 for details.

For DOS programs

To control the printer from DOS application programs, you need to select the printer you are using.
If the list in your application does not include your printer, choose the first available printer from the list below.
Choose the Epson printer at the appropriate step in the installation or setup procedure. If the list in your application does not include your printer, choose the first available printer from the list below:

PLQ-20	LQ-510/550/1010
LQ-2090	LQ-200
LQ-2080/2180	LQ-500
LQ-2070/2170	LQ-860+/1060+
LQ-1070/1070+	LQ-2550
LQ-870/1170	LQ-2500
LQ-850+/1050+	LQ-800/1000
LQ-850/1050	LQ-1500

Note:
The printer on this list are also available for PLQ-20M printers.

Once the printer software has been successfully installed onto your computer, your printer is ready to use.

Chapter 2

Safety Instructions

Warnings, Cautions, and Notes

Warnings *must be followed carefully to avoid bodily injury.*

Cautions *must be observed to avoid damage to your equipment.*

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

Hot Parts Caution Symbol

This symbol is placed on the print head and other parts to indicate that they may be hot. Never touch those parts just after the printer has been used. Let them cool for a few minutes before touching them.

Important Safety Instructions

Read all of these safety instructions before using the printer. In addition, follow all warnings and instructions marked on the printer itself.

When setting up the printer

Caution:
Be sure the AC power cord meets the relevant local safety standards.

❏ Do not place the printer on an unstable surface or near a radiator or heat source.

❏ Place the printer on a flat surface. The printer will not operate properly if it is tilted or placed at an angle.

❏ Do not place this product on a soft, unstable surface like a bed or a sofa, or a small, enclosed area, as this restricts ventilation.

❏ Do not block or cover the slots and openings in the printer's cabinet, and do not insert objects through the slots.

❏ Use only the type of power source indicated on the printer's label. If you are not sure of the power supply specifications in your area, contact your local power company or consult your dealer.

❏ Connect all equipment to properly grounded electrical outlets. Avoid using outlets on the same circuit as photocopiers or air control systems that regularly switch on and off.

❏ Do not use a damaged or frayed power cord.

❏ The power cord should be placed to avoid abrasions, cuts, fraying, crimping, kinking, and other damage.

❏ If you use an extension cord with the printer, make sure the total ampere rating of all devices plugged into the extension cord does not exceed the cord's ampere rating. Also, make sure the total ampere of all devices plugged into the electrical outlet does not exceed the electrical outlet's ampere rating.

❏ Use only the power cord that comes with this product. Use of another cord may result in fire or electric shock.

❏ This product's power cord is for use with this product only. Use with other equipment may result in fire or electric shock.

❏ When connecting this product to a computer or other device with a cable, ensure the correct orientation of the connectors. Each connector has only one correct orientation. Inserting a connector in the wrong orientation may damage both devices connected by the cable.

❏ Place the printer where you can easily connect it to a network interface cable, if necessary.

❏ Leave adequate room around the printer for easy operation and maintenance.

❏ Avoid places subject to shocks and vibrations.

❏ Place the printer near a wall outlet where you can easily unplug the power code.

❏ Keep the entire computer system away from potential sources of electromagnetic interference, such as loudspeakers or the base units of cordless telephones.

❏ Avoid electrical outlet controlled by wall switches or automatic timers. An interruption in power can erase information in the memory of your printer or computer. Also avoid outlets on the same circuit as large motors or other appliances that can cause voltage fluctuations.

❏ Use a grounded power outlet; do not use an adapter plug.

❏ If you plan to use a printer stand, follow these guidelines:

Use a stand that can support at least 15 kg (33.1 lb) for PLQ-20 or 17 kg (37.5 lb) for PLQ-20M.

Never use a stand that tilts the printer. The printer should always be kept level.

Position your printer's power cord and interface cable so they do not interfere with paper feeding. If possible, secure the cables to a leg of the printer stand.

When maintaining the printer

❏ Unplug the printer before cleaning it, and always clean it with a piece of damp cloth only.

❏ Do not spill liquid onto the printer.

❏ Except as specifically explained in this guide, do not attempt to service the printer yourself.

❏ Unplug the printer and refer servicing to qualified service personnel under the following conditions:

i. If the power cord or plug is damaged.

ii. If liquid has entered the printer.

iii. If the printer has been dropped or the cabinet damaged.

iv. If the printer does not operate normally or exhibits a distinct change in performance.

❏ Adjust only those controls that are covered by the operating instructions.

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

To provide adequate short-circuit protection and over-current protection for this printer, the building installation must be protected by a 10- or 16-amp circuit breaker.

When loading paper

❏ Use passbooks and paper that have more than 60% reflectance.

❏ When you use a passbook, set Passbook mode to On and set Binding mode to the method for the passbook's binding in the default settings mode.

❏ Do not load passbooks that are creased or have ripped seam.

❏ Do not use a passbook that has any metallic parts such as staplers or metal clips.

❏ Do not use a passbook with sticky parts such as stamps or seals.

❏ Do not use a passbook that has any pages smaller than the cover page.

❏ Do not print on the front or back cover of a passbook. Printing can be done only when the passbook is opened.

❏ When you use paper that is shorter than 110.0 mm, set the paper eject direction to front. The factory set default is front. Refer to the *Programming Guide* for details.

❏ Do not insert paper that is curled or has been folded into the slot when you load it.

❏ Do not punch holes in the area from 25.0 to 40.0 mm from the left edge of paper.

When operating the printer

❏ Avoid using or storing the printer in places subject to rapid changes in temperature and humidity. Keep it away from direct sunlight, strong light, heat sources or excessive moisture or dust.

❏ Adjust only those controls that are covered in the user documentation. Improper adjustment of other controls may result in damage requiring extensive repair by a qualified technician.

❏ Whenever you turn off the printer, wait at least five seconds before turning it back on; otherwise, you may damage the printer.

❏ Do not turn off the printer while it is printing the self-test. Always press the Offline button to pause printing. Then turn off the printer.

❏ Do not turn off the printer while it is printing the hex dump. Always press the Offline button to pause printing. Then turn off the printer.

❏ Do not reconnect the power cord to an electrical outlet that has the wrong voltage for your printer.

❏ Never replace the print head yourself; you may damage the printer. Also, other parts of the printer must be checked when the print head is replaced.

❏ You need to move the print head by hand to replace the ribbon cartridge. If you have just used the printer, the print head may be hot; let it cool for a few minutes before touching it.

Note for German-speaking users:
Bei Anschluss des Druckers an die Stromversorgung muss sichergestellt werden, dass die Gebaudeinstallation mit einer 10 A-oder 16 A-Sicherung abgesichert ist.

ENERGY STAR® Compliance

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

The International ENERGY STAR® Office Equipment Program is an international program that promotes energy saving through the penetration of energy efficient computers and other office equipment. The program backs the development and dissemination of products with functions that effectively reduce energy consumption. It is an open system in which business proprietors can participate voluntarily. The targeted products are office equipment such as computers, monitors, printers, facsimiles, copiers, scanners, and multifunction devices. Their standards and logos are uniform among participating nations.

Chapter 3

Paper Handling

Loading Passbooks

You can load vertical-fold and horizontal-fold passbooks. Follow the steps shown below to load passbooks.

1. Turn on the printer.

2. Open your passbook to the page to be printed.

    Note:
    Make sure that you press any bulging parts of the folded passbook down to 0.6 mm or less before inserting it into the front slot. For information on the thickness of passbooks you can print, see the Paper Specification that is included on the User CD-ROM.

3. Insert the passbook printable side up into the front slot until the top part of it reaches the roller inside. The printer loads it automatically to the correct position and the passbook is ready to be printed.
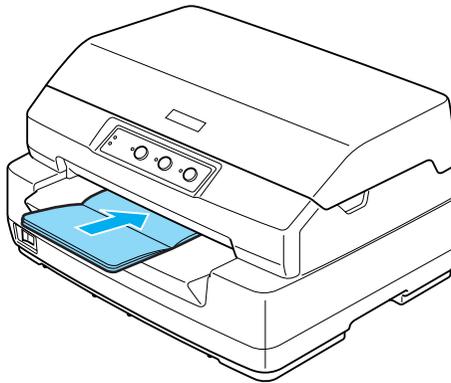
> **Caution:**
> ❏ *When you use a passbook, set Passbook mode to On and set Binding mode to the method for the passbook's binding in the default settings mode.*
>
> ❏ *Use a passbook that has more than 60% reflectance.*
>
> ❏ *Do not load passbooks that are creased or have ripped seam.*
>
> ❏ *Do not use a passbook that has any metallic parts such as staplers or metal clips.*
>
> ❏ *Do not use a passbook with sticky parts such as stamps or seals.*
>
> ❏ *Do not use a passbook that has any pages smaller than the cover page.*
>
> ❏ *Do not print on the front or back cover of a passbook. Printing can be done only when the passbook is opened.*
>
> ❏ *Always close the printer cover before printing. The printer does not print when the printer cover is open.*

Loading Single Sheets

You can load single sheets and carbonless single sheet multipart forms up to 7 parts (one original and six copies). Follow these steps to load single sheets.

1. Turn on the printer.

2. Insert a single sheet printable side up into the front slot until the top part of the paper reaches the roller inside. The printer loads the paper automatically to the correct position and the paper is ready to be printed.
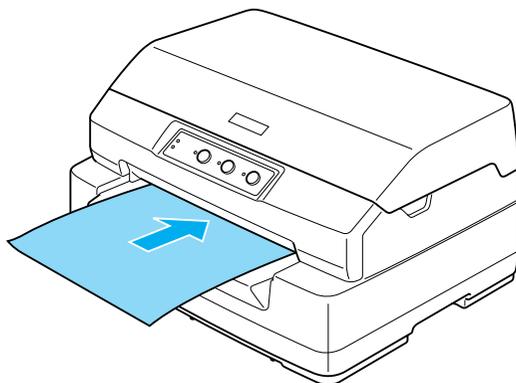
Note:
❏ *Use paper that has more than 60% reflectance.*

❏ *Do not load paper that is curled or has been folded.*

❏ *Do not punch holes in the area from 25.0 to 40.0 mm from the left edge of paper.*

❏ *When you use paper that is shorter than 110.0 mm, set the paper eject direction to front. The factory set default is front. Refer to the Programming Guide for details.*

❏ *When you print a multipart form that is glued at the top, load the glued part first.*

❏ *Be sure your multipart forms do not exceed 0.53 mm (0.021 inch) in thickness.*

❏ *Always close the printer cover before printing. The printer does not print when the printer cover is open.*

Adjusting the top-of-form position

The top-of-form position is the vertical position on the page where the printer starts printing. If the printout appears too high or low on the page, you can use this function to adjust the top-of-form position.

Follow these steps to adjust the top-of-form position:

Note:
❏ *The factory set default for the top-of-form position is set as shown below.*

 PR2: 4.2 mm
 ESC/P and IBM PPDS: 8.5 mm

❏ *This mode can be used even when the printer cover is open.*

❏ *If you wish to change the top-of-form position in PR40+, make sure that you set the TOF position for PR40+ to Off.*

❏ *Your top-of-form position setting remains in effect until you change it, even if you turn off the printer.*

❏ *The top margin setting made in some application software overrides the top-of-form position setting you make with this function. If necessary, adjust the top-of-form position in your software.*

❏ *Prepare an A4 size sheet of paper before using this function.*

1. Turn off the printer.

 ⚠ *Caution:*
 Whenever you turn off the printer, wait at least five seconds before turning it back on; otherwise you may damage the printer.

2. Turn on the printer while holding the F2 button.

3. Press the Offline button while the F1/Eject, Offline, and F2 lights are flashing.

4. When the Ready light turns on, insert a sheet of A4 paper into the front slot. The printer prints triple H in capitals (HHH) on the current top-of-form position and ejects the sheet.

5. Press the F1/Eject button to move the top-of-form position up on the page, or press the F2 button to move the top-of-form position down on the page. Each time you press the F1/Eject or F2 button, the printer makes a short beep. Pressing these buttons executes micro feed in 0.282 mm (1/90-inch) increments.

    Note:
    The top-of-form position can be set from 1.0 mm to 33.8 mm in the PR2 mode and from 1.0 mm to 33.9 mm in the ESC/P and IBM PPDS modes.
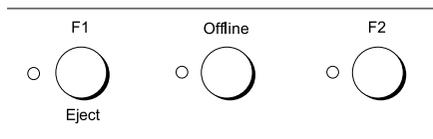
6. Insert a sheet of A4 paper into the front slot. The printer prints triple H in capitals (HHH) on the current top-of-form position and ejects the sheet. You may continue to adjust the position by pressing the F1/Eject and F2 buttons and checking the position by inserting another sheet.

7. After finishing the adjustment, turn off the printer. The setting does not change even if the printer is turned off.

Adjusting the printing start position

The printing start position is the horizontal position on the page where the printer starts printing. If the printout appears too for the left or right on the page, you can use this function to adjust the printing start position.

Follow these steps to adjust the printing start position:

Note:
❏ *Your printing start position setting remains in effect until you change it, even if you turn off the printer.*

❏ *Prepare an A4 size sheet of paper before using this function.*

❏ *Always close the printer cover before printing. The printer does not print when the printer cover is open.*

1. Turn off the printer.

   Caution:
   Whenever you turn off the printer, wait at least five seconds before turning it back on; otherwise you may damage the printer.

2. Turn on the printer while holding the F2 button.

3. Press the F2 button while the F1/Eject, Offline, and F2 lights are flashing.

4. When the Ready light turns on, insert a sheet of A4 paper into the front slot. The printer prints the guide to adjust the printing start position and position patterns.

5. Press the F1/Eject button for the next pattern or F2 button for the previous pattern to select the printing start position. Each time you press the F1/Eject or F2 button, the printer makes a short beep. The F1/Eject, Offline and F2 lights show the pattern which is selected at that time.

6. After you select the printing start position, turn off the printer. The setting does not change even if the printer is turned off.

Chapter 4

Printer Software

About Your Printer Software

The Epson software includes the printer driver software and EPSON Status Monitor 3.

The printer driver is software that allows your computer to control the printer. You need to install the printer driver so your Windows software applications can take full advantage of the printer's capabilities.

EPSON Status Monitor 3 program allows you to monitor the status of your printer, alerts you when errors occur, and provides you with troubleshooting tips. Status Monitor 3 is automatically installed when you install the printer driver.

Note:
❏ *Before proceeding, make sure you have installed the printer driver on your computer as described in "Installing the Printer Software" on page 13.*

❏ *Make sure the software setting is set to ESC/P. The printer driver software and EPSON Status Monitor 3 can only function in ESC/P mode.*

Using the Printer Driver with Windows Me and 98

You can access the printer driver from your Windows applications or from the Start menu.

❏ When you access the printer driver from a Windows application, any settings you make apply only to the application you are using. See "Accessing the printer driver from Windows applications" on page 37 for more information.

❏ When you access the printer driver from the Start menu, the printer driver settings you make apply to all your applications. See "Accessing the printer driver from the Start menu" on page 39 for more information.

See "Changing the printer driver settings" on page 40 to check and change printer driver settings.

Note:
❏ *The printer driver is designed for PLQ-20, but is compatible and can be installed for PLQ-20M.*

❏ *While many Windows applications override the settings made with the printer driver, some do not, so you must verify that the printer driver settings match your requirements.*

Accessing the printer driver from Windows applications

Follow these steps to access the printer driver from a Windows application:

1. Select Print Setup or Print from the File menu of your application software. In the Print or Print Setup dialog box displayed, make sure that your printer is selected in the Name drop-down list.
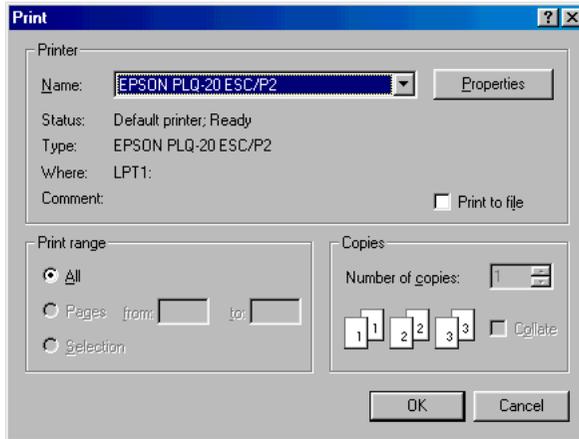
2. Click Printer, Setup, Properties, or Options. (You may need to click a combination of these buttons.) The Properties window appears, and you see the Paper, Graphics, and Device Options menu. These menus contain the printer driver settings.
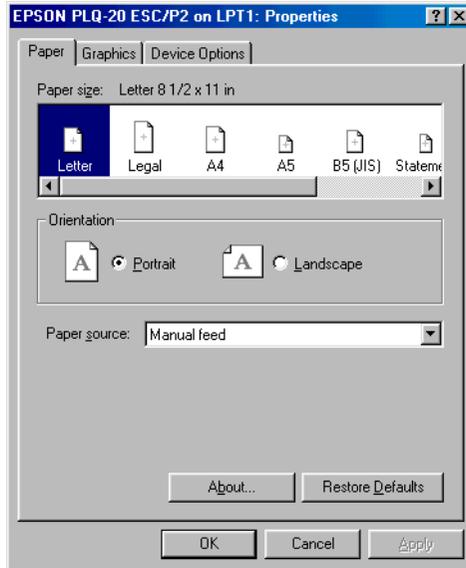
3. To view a menu, click the corresponding tab at the top of the window. See "Changing the printer driver settings" on page 40 for information on how to change the settings.

Accessing the printer driver from the Start menu

Follow these steps to access the printer driver from the Start menu:

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

2. Click Printers.

3. Right-click your printer icon, and click Properties. The screen displays the Properties window, which contains the Paper, Graphics, Device Options, and Utility menus. These menus display the printer driver settings.

4. To view a menu, click the corresponding tab at the top of the window. See "Changing the printer driver settings" on page 40 for information on how to change the settings.

Changing the printer driver settings

Your printer driver has four menus: Paper, Graphics, Device Options, and Utility. For an overview of the available settings, see "Printer Driver Settings Overview" on page 47. You can also view online help by right-clicking items in the driver and selecting What's this?
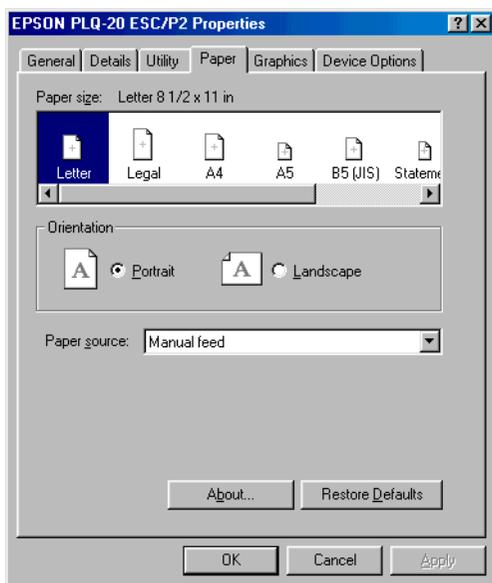
When you finish making printer driver settings, click OK to apply the settings, or click Restore Defaults to return the settings to their default values.

Once you have checked your printer driver settings and made any necessary changes, you are ready to print.

Using the Printer Driver with Windows XP, 2000, and Windows NT 4.0

You can access the printer driver from your Windows applications or from the Start menu.

❏ When you access the printer driver from a Windows application, any settings you make apply only to the application you are using. See "Accessing the printer driver from Windows applications" on page 42 for more information.

❏ When you access the printer driver from the Start menu, the printer driver settings you make apply to all your applications. See "Accessing the printer driver from the Start menu" on page 44 for more information.

To check and change printer driver settings, see "Changing the printer driver settings" on page 46.

Note:
❏ *The printer driver is designed for PLQ-20, but is compatible and can be installed for PLQ-20M.*

❏ *While many Windows applications override the settings made with the printer driver, some do not, so you must verify that the printer driver settings match your requirements.*

Accessing the printer driver from Windows applications

Follow these steps to access the printer driver from a Windows application:

Note:
The examples in the following section are from the Windows 2000 operating system. They may vary in appearance from what actually appears on your screen; however, the instructions are the same.

1. Select Print Setup or Print from the File menu of your application software. In the Print or Print Setup dialog box displayed, make sure that your printer is selected in the Name drop-down list.
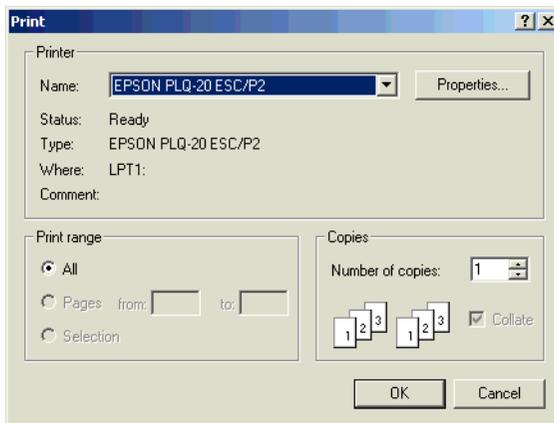
2. Click Printer, Setup, Properties, or Options. (You may need to click a combination of these buttons.) The Document Properties window appears, and you see the Layout and Paper/Quality menus. These menus contain the printer driver settings.
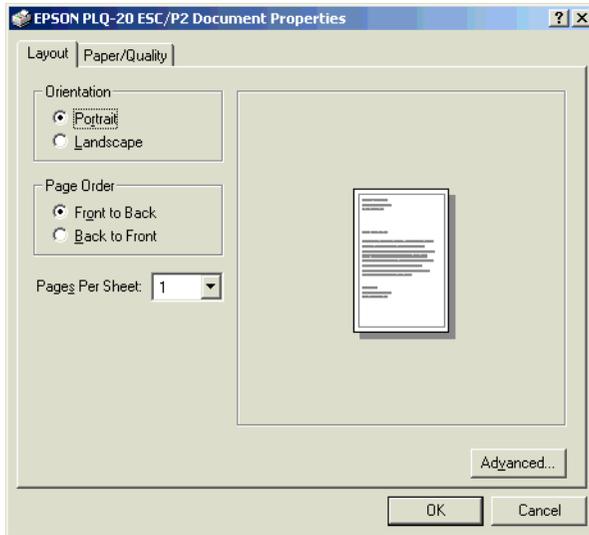
3. To view a menu, click the corresponding tab at the top of the window. See "Changing the printer driver settings" on page 46 to change the settings.
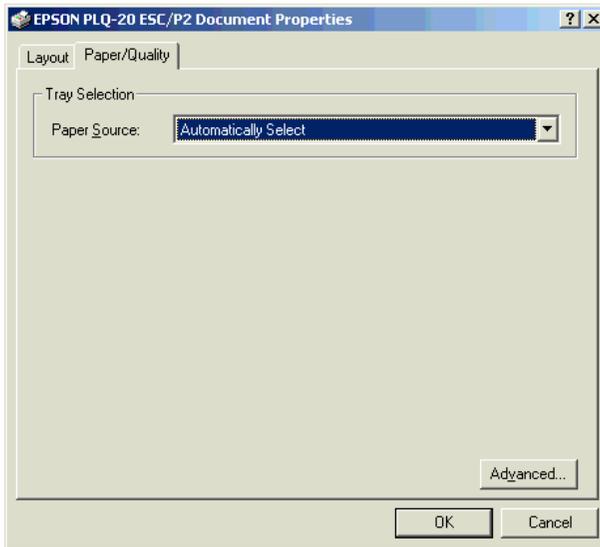
Accessing the printer driver from the Start menu

Follow these steps to access the printer driver from the Start menu:

Note:
The screen shots used in this procedure are from the Windows 2000 operating system. They may vary in appearance from what actually appears on your screen; however, the instructions are the same.

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

2. Click Printers.

3. Right-click your printer icon, and click Printing Preferences (in Windows XP or 2000) or Document Defaults (in Windows NT 4.0). The screen displays the Default Document Properties window, which contains the Layout and Paper/Quality menus. These menus display the printer driver settings.
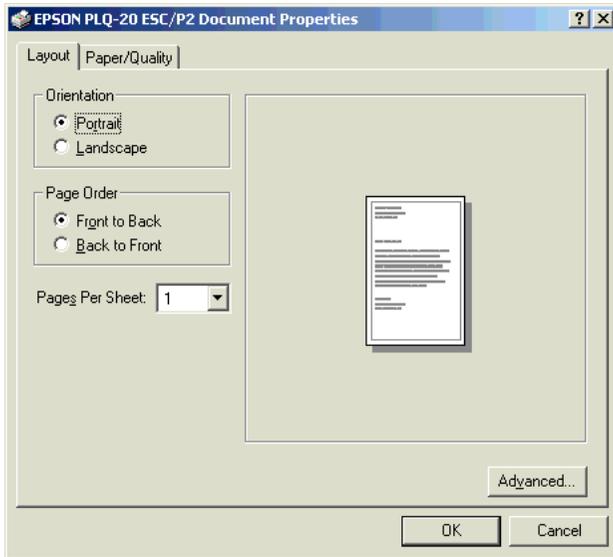
When you click Properties in the menu displayed by
right-clicking the printer icon, the printer software window
appears, which includes menus used to make the printer
driver settings.
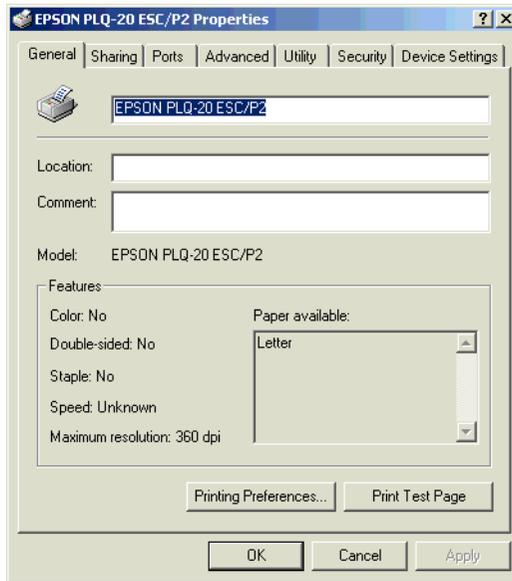
4. To view a menu, click the corresponding tab at the top of the
    window. See "Printer Driver Settings Overview" on page 47
    for information on how to change the settings.

Changing the printer driver settings

Your printer driver has two menus from which you can change
the printer driver settings; Layout and Paper/Quality. You can
also change settings on the Utility menu in the printer software.
For an overview of the available settings, see "Printer Driver
Settings Overview" on page 47. You can also view online help by
right-clicking items in the driver and selecting What's this?

When you finish making your printer driver settings, click OK to apply the settings, or click Cancel to cancel your changes.

Once you have checked your printer driver settings and changed them if necessary, you are ready to print.

Printer Driver Settings Overview

The following tables show the Windows printer driver settings. Note that not every setting is available in all versions of Windows.

Printer settings

Settings	Explanations
Paper size	Select the size of the paper you want to use. If you do not see your paper size, use the scroll bar to scroll through the list.
Orientation	Select Portrait or Landscape.
Paper source	Select the paper source you want to use.
Resolution/ Graphics Resolution	Select the printing resolution you want. The higher the resolution you select, the more detailed your printout will be; however, increasing the resolution slows printing.
Dithering	You can leave this option set to Fine, which is the default setting, or select another dithering pattern depending on the kind of printout you want.
Intensity/ Intensity Control	Move the slider to make your printout lighter or darker.
Print quality	Select a print quality option from the Print quality list. If you set Hi-speed to On, you will enter bidirectional printing mode and printing speed will increase. Setting Hi-speed to Off will return the printer to unidirectional printing mode. Printing speed will decrease, but printing precision will improve. Printing with the default settings uses the settings stored in the printer.

Settings	Explanations
EPSON Status Monitor 3	You can access EPSON Status Monitor 3 when you click this button. To monitor the printer, make sure the Monitor the printing status check box is selected.
Monitoring Preferences	Click this button to open the Monitoring Preferences dialog box where you can make settings for EPSON Status Monitor 3.
Paper/Output	Check the Paper Size, Orientation, and Paper Source settings you made on the Page Setup menu and change them if necessary. Select the setting and then choose an option from the Change Setting list box.
Halftone	Click this button to set the brightness and contrast, input the RGB gamma, or make other settings. The Halftone Color Adjustment dialog box appears. For details, click the Help button in this dialog box.
Halftoning	Select the type of halftoning to use when printing graphics. To let the printer determine the best halftone quality, use Auto Select.
Printer Fonts Support	Select a character table group to use. You can select one of three character table groups, Standard, Expanded, and None (Bit Image printing). When Standard or Expanded is selected, the printer uses the device fonts. Expanded includes more fonts than Standard. When None is selected, the printer uses bit map images instead of the device fonts. For details on the fonts which are included in each table, see "Electronic" on page 150.

Monitoring settings

Settings	Explanations
EPSON Status Monitor 3	You can access EPSON Status Monitor 3 when you click this button. To monitor the printer, make sure the Monitor the printing status check box is selected.
Monitoring Preferences	Click this button to open the Monitoring Preferences dialog box where you can make settings for EPSON Status Monitor 3. See "Setting up EPSON Status Monitor 3" on page 50 for more information.

Using EPSON Status Monitor 3

EPSON Status Monitor 3 is available for Windows XP, Me, 98, 2000, and Windows NT 4.0. It allows you to monitor your printer's status, alerts you when printer errors occur, and provides troubleshooting instructions when needed.

EPSON Status Monitor 3 is available only when:

❏ The printer is connected directly to the host computer via the parallel port [LPT1].

❏ Your system is configured to support bidirectional communication.

EPSON Status Monitor 3 is installed when you install the printer driver as described in "Installing the Printer Software" on page 13.

Note:
If you install the driver using the "Point and Print" method, EPSON Status Monitor 3 may not function properly. If you want to use EPSON Status Monitor 3, reinstall the driver as described in "Installing the Printer Software" on page 13.

Before using EPSON Status Monitor 3, be sure to read the README file on the User CD-ROM. This file contains the latest information on the utility.

Setting up EPSON Status Monitor 3

Follow these steps to set up EPSON Status Monitor 3:

1. Open the Utility menu as described in "Using the Printer Driver with Windows Me and 98" on page 36 or "Using the Printer Driver with Windows XP, 2000, and Windows NT 4.0" on page 41.

2. Click the Monitoring Preferences button. The Monitoring Preferences dialog box appears.
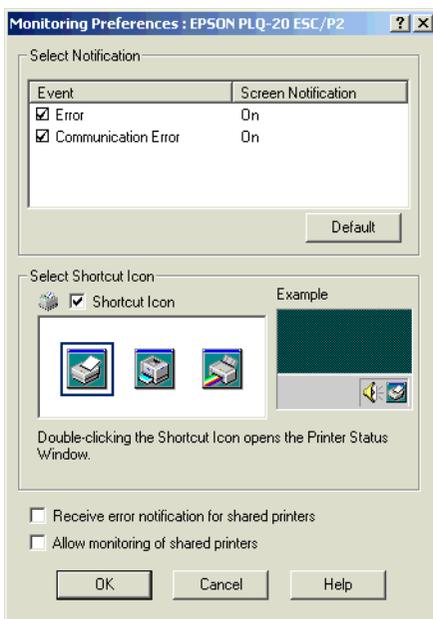
3. The following settings are available:

Select Notification	Displays the error item check box On/Off status. Turn on this check box to display the selected error notification.
Select Shortcut Icon	The selected icon is displayed in the system tray on the taskbar on the computer screen. The setting's example is shown on the right window. By clicking the shortcut icon, you can access the Monitoring Preferences dialog box easily.
Receive error notification for shared printers	Error notification for a shared printer can be received when this check box is selected.
Allow monitoring of shared printer	When this check box is selected, a shared printer can be monitored by other PCs.

Note:
Click the Default *button to revert all items to the default settings.*

Accessing EPSON Status Monitor 3

Do one of the following to access EPSON Status Monitor 3;

❏ Double-click the printer-shaped shortcut icon on the taskbar. To add a shortcut icon to the taskbar, go to the Utility menu and follow the instructions.

❏ Open the Utility menu, then click the EPSON Status Monitor 3 icon. To find out how to open the Utility menu, See "Using the Printer Driver with Windows Me and 98" on page 36 or "Using the Printer Driver with Windows XP, 2000, and Windows NT 4.0" on page 41.

When you access EPSON Status Monitor 3 as described above, the following printer status window appears.
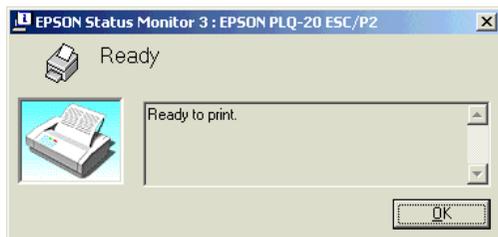
You can view printer status information in this window.

Setting Up Your Printer on a Network

Sharing the printer

This section describes how to share the printer on a standard Windows network.

The computers on a network can share a printer that is directly connected to one of them. The computer that is directly connected to the printer is the printer server, and the other computers are the clients which need permission to share the printer with the printer server. The clients share the printer via the printer server.

According to the versions of Windows OS and your access rights on the network, perform the appropriate settings of the printer server and clients.

Setting the printer server

❏ For Windows Me or 98, see "With Windows Me or 98" in "Setting up your printer as a shared printer" on page 54.

❏ For Windows XP, 2000, or Windows NT 4.0, see "With Windows XP, 2000, or Windows NT 4.0" in "Setting up your printer as a shared printer" on page 56.

Setting the clients

❏ For Windows Me or 98, see "With Windows Me or 98" in "Setting for the clients" on page 58.

❏ For Windows XP or 2000, see "With Windows XP or 2000" in "Setting for the clients" on page 60.

❏ For Windows NT 4.0, see "With Windows NT 4.0" in "Setting for the clients" on page 63.

Note:
❏ *When sharing the printer, be sure to set EPSON Status Monitor 3 so that the shared printer can be monitored on the printer server. See "Setting up EPSON Status Monitor 3" on page 50.*

❏ *When you are Windows shared printer user in a Windows Me or 98 environment, on the server, double-click the* Network *icon in Control panel and make sure that the "File and printer sharing for Microsoft Networks" component is installed. Then, on the server and clients, make sure that the "IPX/SPX-compatible Protocol" or the "TCP/IP Protocol" is installed.*

❏ *The printer server and clients should be set on the same network system, and they should be under the same network management beforehand.*

❏ *The on-screen displays on the following pages may differ depending on the version of Windows OS.*

Setting up your printer as a shared printer

With Windows Me or 98

When the printer server's OS is Windows Me or 98, follow these steps to set the printer server.

1. Click Start, point to Settings, and click Control Panel.

2. Double-click the Network icon.

3. Click File and Print Sharing on the Configuration menu.

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

5. Click OK to accept the settings.

   Note:
   ❏ *When "Insert the Disk" appears, insert the Windows Me or 98 CD-ROM in the computer. Click OK and then follow the on-screen instructions.*

   ❏ *When the prompt to restart the computer appears, restart the computer and continue with the settings.*

6. Double-click the Printers icon on the control panel.

7. Right-click your printer icon, and click Sharing in the menu that appears.

8. Select Shared As, type the name in the Share Name box, and click OK. Type a Comment and Password if needed.
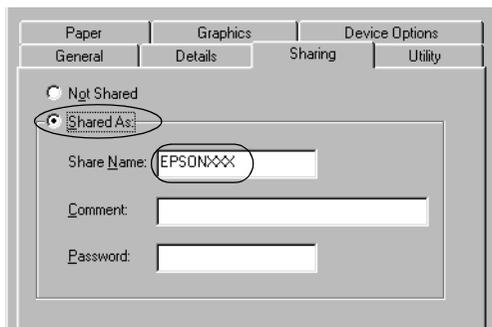
Note:
❏ *Do not use spaces or hyphens for the share name, or an error may occur.*

❏ *When sharing the printer, be sure to set EPSON Status Monitor 3 so that the shared printer can be monitored on the printer server. See "Setting up EPSON Status Monitor 3" on page 50.*

You need to set the client computers so that they can use the printer on a network. See the following pages for details.

❏ "With Windows Me or 98" in "Setting for the clients" on page 58

❏ "With Windows XP or 2000" in "Setting for the clients" on page 60

❏ "With Windows NT 4.0" in "Setting for the clients" on page 63

With Windows XP, 2000, or Windows NT 4.0

When the printer server's OS is Windows XP, 2000, or Windows NT 4.0, follow these steps to set the printer server.

Note:
You must access Windows XP, 2000, or Windows NT 4.0 as the
Administrators of the local machine.

1. For a Windows 2000 or Windows NT 4.0 printer server, click Start, point to Settings, and click Printers.
   For a Windows XP printer server, click Start, point to Printers and Faxes. For Windows XP Home edition users, point to Control panel first, then click Printers and Faxes.

2. Right-click your printer icon, and click Sharing in the menu that appears.

   For Windows XP, if the following menu appears, click either Network Setup Wizard or If you understand the security risks but want to share printers without running the wizard, click here.
   In either case, follow the on-screen instructions.
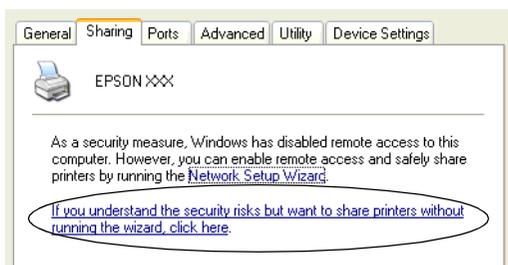
3. For a Windows 2000 or Windows NT 4.0 printer server, select Shared (for Windows 2000) or Shared as (for Windows NT 4.0), then type the name in the Share name box and click OK.
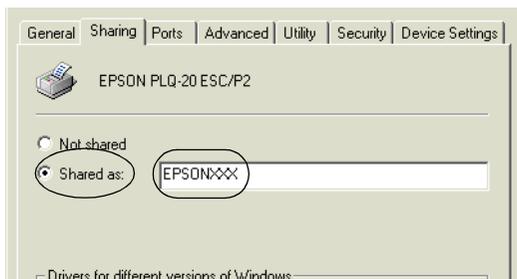
For a Windows XP printer server, select Share this printer, then type the name in the Share name box and click OK.

Note:
Do not use spaces or hyphens for the share name, or an error may occur.

You need to set the client computers so that they can use the printer on a Network. See the following pages for details:

❏ "With Windows Me or 98" in "Setting for the clients" on page 58

❏ "With Windows XP or 2000" in "Setting for the clients" on page 60

❏ "With Windows NT 4.0" in "Setting for the clients" on page 63

Setting for the clients

This section describes how to install the printer driver by accessing the shared printer on a network.

Note:
❏ *To share the printer on a Windows network, you need to set the printer server. For details, see "Setting up your printer as a shared printer" on page 54 (Windows Me or 98) or "With Windows XP, 2000, or Windows NT 4.0" on page 56 (Windows XP, 2000, or Windows NT 4.0).*

❏ *This section describes how to access the shared printer on a standard network system using the server (Microsoft workgroup). If you cannot access the shared printer due to the network system, ask the administrator of the network for assistance.*

❏ *This section describes how to install the printer driver by accessing the shared printer from the Printers folder. You can also access the shared printer from Network Neighborhood or My Network on the Windows desktop.*

❏ *When you want to use the EPSON Status Monitor 3 at clients, you have to install both of the printer driver and the EPSON Status Monitor 3 in each client from the CD-ROM.*

With Windows Me or 98

Follow these steps to set Windows Me or 98 clients.

1. Click Start, point to Settings, and click Printers.

2. Double-click the Add Printer icon, then click Next.

3. Select Network printer, then click Next.

4. Click Browse, and the Browse for Printer dialog box appears.

    Note:
    You can also type "\\(the name of the computer that is locally connected to the shared printer)\(the shared printer's name)" in the Network path or queue name.

5. Click the computer or server that is connected to the shared printer, and the name of the shared printer. Then click OK.
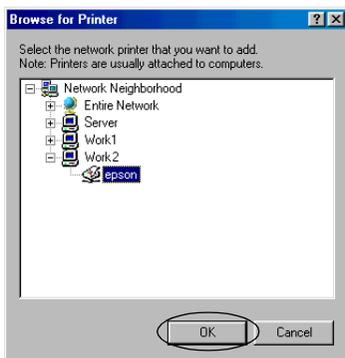
    Note:
    The name of the shared printer may be changed by the computer or server that is connected to the shared printer. To make sure of the name of the shared printer, ask the administrator of the network.

6. Click Next.

    Note:
    ❏ *If the printer driver is installed in the client beforehand, you need to select the new printer driver or the current printer driver. When the prompt to select the printer driver appears, select the printer driver according to the message.*

    ❏ *If the printer server's OS is Windows Me or 98, go to the next step.*

❏ *If the printer server's OS is not Windows Me or 98, go to "Installing the printer driver from the CD-ROM" on page 65.*

7. Make sure of the name of the shared printer, and select whether to use the printer as the default printer or not. Click OK, and then follow the on-screen instructions.

Note:
You can change the shared printer's name so that it appears only on the client computer.

With Windows XP or 2000

Follow these steps to set Windows XP or 2000 clients.

You can install the printer driver of the shared printer, if you have Power Users or more powerful access rights even if you are not the Administrator.

1. For Windows 2000 clients, click Start, point to Settings, and click Printers.
   For Windows XP clients, click Start, point to Printers and Faxes. For Windows XP Home edition users, point to Control panel first, then click Printers and Faxes.

2. For Windows 2000, double-click the Add Printer icon, then click Next.

   For Windows XP, click the Add a printer in the Printer Tasks menu.
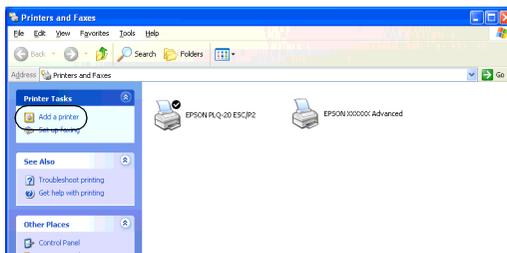
3. Select Network printer (for Windows 2000) or A network printer, or a printer attached to another computer (for Windows XP), then click Next.

4. For Windows 2000, select Type the printer name, or click Next to browse for a printer and type the name of the shared printer, then click Next.
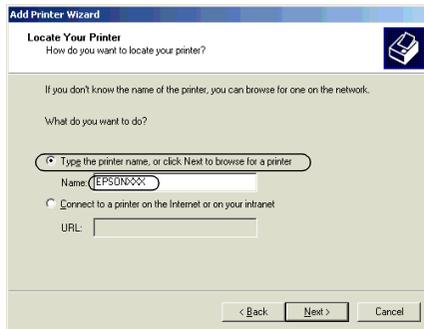
Note:
❏   *You can also type "\\(the name of the computer that is locally connected to the shared printer)\(the shared printer's name)" in Network path or queue name.*

❏   *You do not necessarily need to type the name of the shared printer.*

For Windows XP, select Browse for a printer.
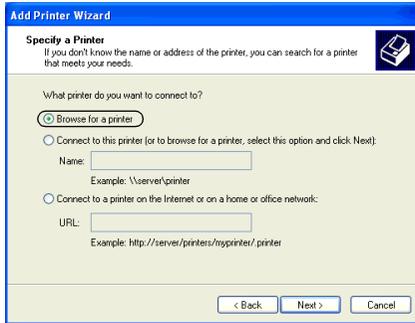
5. Click the icon of the computer or server that is connected to the shared printer, and the name of the shared printer. Then click Next.
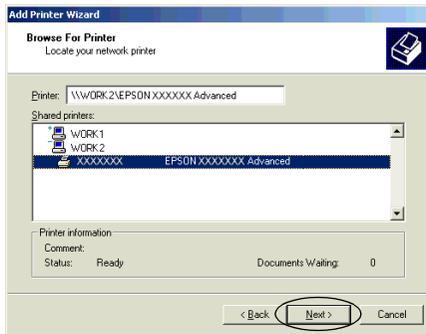
Note:
❏ *The name of the shared printer may be changed by the computer or server that is connected to the shared printer. To make sure of the name of the shared printer, ask the administrator of the network.*

❏ *If the printer driver is installed in the client beforehand, you need to select either the new printer driver or the current printer driver. When the prompt to select the printer driver appears, select the printer driver according to the message.*

❏ *If the printer server's OS is Windows XP or 2000, go to the next step.*

❏ *If the printer server's OS is not Windows XP or 2000, or is Windows Me or 98, go to "Installing the printer driver from the CD-ROM" on page 65.*

6. For Windows 2000, select whether to use the printer as the default printer or not, then click OK.

7. Make sure of the settings, then click Finish.

With Windows NT 4.0

Follow these steps to set Windows NT 4.0 clients.

You can install the printer driver of the shared printer, if you have Power Users or more powerful access rights even if you are not the Administrator.

1. Click Start, point to Settings, and click Printers.

2. Double-click the Add Printer icon.

3. Select Network printer server, then click Next.

4. Click the icon of the computer or server that is connected to the shared printer and the name of the shared printer. Then click OK.
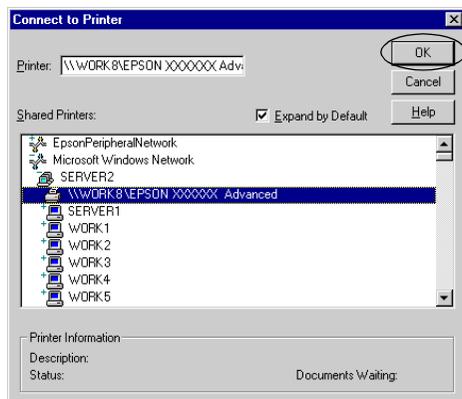
Note:
❏ *You can also type "\\(the name of the computer that is locally connected to the shared printer)\(the shared printer's name)" in Network path or queue name.*

❏ *The name of the shared printer may be changed by the computer or server that is connected to the shared printer. To make sure of the name of the shared printer, ask the administrator of the network.*

❏ *If the printer driver is installed in the client beforehand, you need to select the new printer driver or the current printer driver. When the prompt to select the printer driver appears, select the printer driver according to the message.*

❏ *If the printer server's OS is Windows NT 4.0, go to the next step.*

❏ *If the printer server's OS is not Windows NT 4.0, or is Windows Me or 98, go to "Installing the printer driver from the CD-ROM" on page 65.*

5. Select whether to use the printer as the default printer or not, then click OK.

6. Click Finish.

Installing the printer driver from the CD-ROM

This section describes how to install the printer driver in the clients when the computers of the server and clients use different OS.

The on-screen displays on the following pages may differ depending on the version of Windows OS.

Note:
❏ *When installing in Windows XP, 2000, or Windows NT 4.0 clients, you must access Windows XP, 2000, or Windows NT 4.0 with the Administrator.*

❏ *If the computers of the server and clients use the same OS, you do not have to install the printer drivers from the CD-ROM.*

1. Access the shared printer and a prompt may appear. Click OK, and then follow the on-screen instructions to install the printer driver from the CD-ROM.

2. Insert the CD-ROM, then the EPSON Installation Program dialog box appears. Cancel the dialog box by clicking Cancel, then type the appropriate drive and folder names in which the printer driver for clients is located, then click OK.
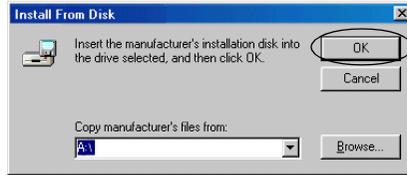
When installing drivers in Windows XP or 2000, "Digital Signature is not found." may appear. Click Yes (for Windows 2000) or Continue Anyway (for Windows XP) and continue installing.

The folder name differs depending on the OS being used.

Client's OS	Folder Name
Windows Me or 98	\<Language>\WIN98
Windows XP, 2000	\<Language>\WIN2000
Windows NT 4.0	\<Language>\WINNT40

3. Select the name of the printer, then click OK. Then follow the on-screen instructions.

Canceling Printing

If the printouts are not what you expected and display incorrect or garbled characters or images, you may need to cancel printing. When the printer icon is displayed on the taskbar, follow the instructions below to cancel printing.

1. Double-click the printer icon on the task bar, then click Purge Print Documents on the Printer menu.
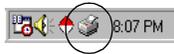
2. When canceling all printing documents, select Purge Print Documents (For Windows Me or 98) or Cancel All Documents (For Windows XP, 2000, or Windows NT 4.0) on the Printer menu.
   When canceling a specified document, select a document you want to cancel and select Cancel Printing (For Windows Me or 98) or Cancel (For Windows XP, 2000, or Windows NT 4.0) on the Document menu.
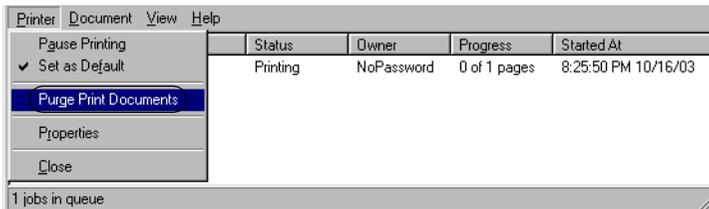
The printing job is canceled.

Uninstalling the Printer Software

When you wish to reinstall or upgrade the printer driver, uninstall the printer driver that has been installed already.

Uninstalling the printer driver and EPSON Status Monitor 3

1. Quit all applications.

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

3. Double-click the Add/Remove Programs icon.

4. Select EPSON Printer Software, and click the Add/Remove.

1

2
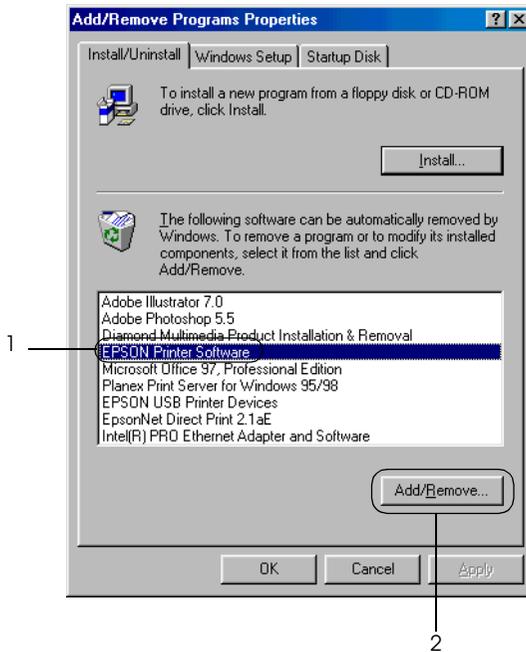
Note:
When using the Windows XP or Windows 2000 computer, click Change *or* Remove Programs, *select the* EPSON Printer Software, *then click* Change/Remove.

5. Click the Printer Model menu, select the EPSON PLQ-20 Advanced icon, then click OK.
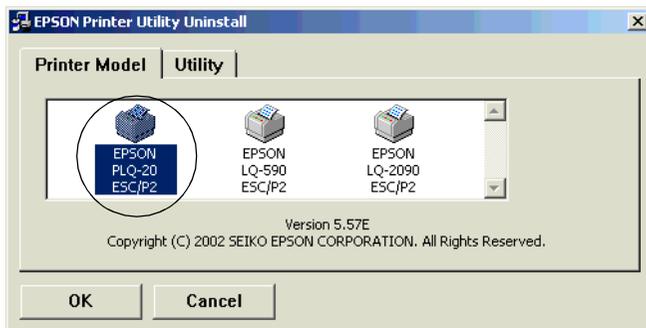
Note:
The printer driver is designed for PLQ-20, but is compatible and can be installed for PLQ-20M.

6. If you uninstall Monitored Printers, click Yes in the displayed dialog box.

Note:
You can uninstall only the Monitored Printers utility of EPSON Status Monitor 3. When the utility is uninstalled, you cannot change the setting of Monitored Printers from EPSON Status Monitor 3.

7. If you uninstall EPSON Status Monitor 3, click Yes in the displayed dialog box.

8. Follow the on-screen instructions.

Uninstalling the USB device driver

When you connect the printer to your computer with a USB interface cable, the USB device driver is also installed. When you uninstalled the printer driver, you also need to uninstall the USB device driver.

Follow these steps to uninstall the USB device driver.

Note:
❏ *Uninstall the printer driver before uninstalling the USB device driver.*

❏ *Once you uninstalled the USB device driver, you cannot access any other Epson printers connected with a USB interface cable.*

1. Follow steps 1 through 3 of "Uninstalling the Printer Software" on page 68.

2. Select EPSON USB Printer Devices, and click Add/Remove.
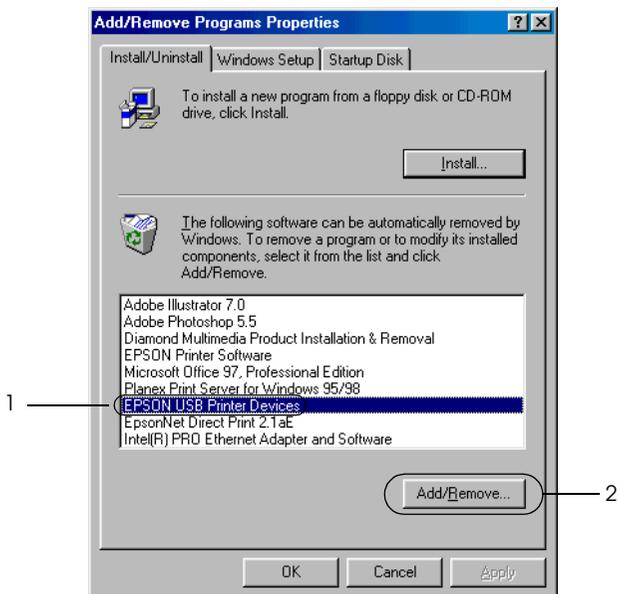
Note:
❏ *EPSON USB Printer Devices appears only when the printer is connected to Windows Me or 98 with a USB interface cable.*

❏ *If the USB device driver is not installed correctly, EPSON USB Printer Devices may not appear. Follow these steps to run the "Epusbun.exe" file in the CD-ROM.*

1. Insert the CD-ROM in your computer's CD-ROM drive.
2. Access the CD-ROM drive.
3. Double-click the Win98 *folder.*
4. Double-click the Epusbun.exe *icon.*

3. Follow the on-screen instructions.

To reinstall a printer driver, see "Installing the Printer Software" on page 13.

Chapter 5

Control Panel

Buttons and Lights
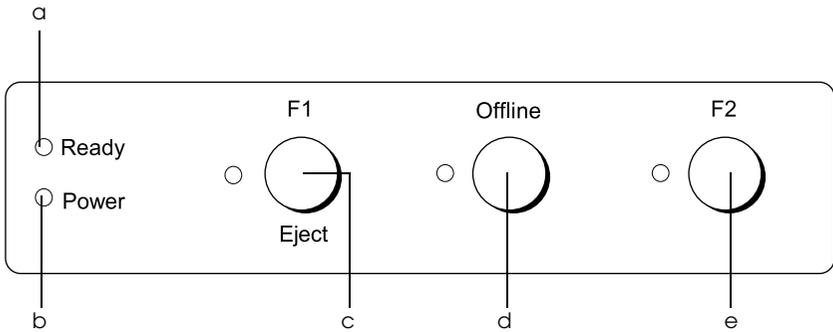
a   Ready light (Yellow)

   ❏   On when the printer is ready to receive or already receiving data.

   ❏   Flashes when an error has occurred during a printing operation.

b   Power light (Green)

   ❏   On for a few seconds when the printer is turned on.

   ❏   On when the printer is paused.

c   F1/Eject button

❏ Executes functions which are assigned to the F1/Eject button when the printer is in the PR2 mode. You can assign optional functions to it by programming them in the PR2 mode.

❏ Ejects paper when the printer is in the ESC/P or IBM PPDS mode.

❏ When the printer enters the default setting mode, the button works as a button to select the menu. You can select the next menu by pressing this button. See "Changing default settings" on page 94.

F1/Eject light (Yellow)

❏ Works as programmed only when the printer is in the PR2 mode. You can program it when it is on, off or flashes in the PR2 mode.

d   Offline button

❏ Alternates the printer activity between offline and online.

❏ When the printer enters the default setting mode, the button works as a button to select the menu. You can select the previous menu by pressing this button. See "Changing default settings" on page 94.

Offline light (Yellow)

❏ On when the printer is offline.

e   F2 button

❏   Executes functions which are assigned to the F2 button when the printer is in the PR2 mode. You can assign optional functions to it by programming them in the PR2 mode.

❏   When the printer enters the default setting mode, you can change the setting by pressing this button. See "Changing default settings" on page 94.

F2 light (Yellow)

❏   Works as programmed only when the printer is in the PR2 mode. You can program it when it is on, off or flashes in the PR2 mode.

Functions auxiliary

This section describes functions executed by turning on the printer while holding one or more buttons. These functions are shown in the following table and explained in detail after the table.

Switch	Function
F2*	Self-test
F1/Eject & F2	Default setting
F1/Eject & Offline	Compress printing mode
Offline	Data dump
Open the cover & F1/Eject	Paper removing
F2**	Bidirectional adjustment
F2***	Top-of-form adjustment
F2****	Printing start position adjustment

* To enter this mode, press the F1/Eject and F2 button while the F1/Eject, Offline, and F2 lights are flashing.

** To enter this mode, press the F1/Eject button while the F1/Eject, Offline, and F2 lights are flashing.

*** To enter this mode, press the Offline button while the F1/Eject, Offline, and F2 lights are flashing.

**** To enter this mode, press the F2 button while the F1/Eject, Offline, and F2 lights are flashing.

Self-test

Prints the self-test. See "Printing a Self-Test" on page 102 for more information.

Default setting

Starts the default setting mode. See "Changing default settings" on page 94 for more information.

Compress printing mode

Starts the compress printing mode. See "Compress Printing Mode" on page 79 for more information.

Data dump

Starts the data dump mode, in which all input data is printed as hexadecimal numbers and corresponding characters. See "Printing Hex Dump" on page 103 for more information.

Paper removing

Starts the paper removing mode. See "Clearing Paper Jams" on page 119 for instruction on feeding paper.

Bidirectional adjustment

Starts the bidirectional adjustment mode. See "Aligning Vertical Lines in Your Printout" on page 96 for more information.

Top-of-form adjustment

Starts the top-of-form position adjustment mode. See "Adjusting the top-of-form position" on page 31 for more information.

Printing start position adjustment

Starts the printing start position adjustment mode. See "Adjusting the printing start position" on page 33 for more information.

Compress Printing Mode

You can compress your printing data to the ratio of 75% by following the steps below.

Note:
Compress printing mode is effective only when the printer is in the ESC/P mode.

1. Turn off the printer.

> ! *Caution:*
> *Whenever you turn off the printer, wait at least five seconds before turning it back on; otherwise you may damage the printer.*

2. Turn on the printer while holding the F1/Eject and Offline buttons. The printer makes two short beeps and enters the compress printing mode.

About Your Printer's Default Settings

The default settings control many printer functions. While you can often set these functions through your software or printer driver, you may sometimes need to change a default setting from the printer's control panel using the default-setting mode.

For a detailed description of the settings you can change in the default-setting mode, see "Understanding default settings" on page 80. For instructions on changing the settings, see "Changing default settings" on page 94.

Understanding default settings

This section describes the settings and options available in the default-setting mode.

All items available in the default setting mode are divided into three groups depending on the applications. You can select the three main menus while making the default settings and then change the setting of each item which belongs to the menu you selected. On the Common Settings menu, you can change the settings which are effective in all three application modes. On the PR2 Mode Settings menu, you can change the settings which are active in the PR2 mode. Then you can change the settings active in the ESC/P and IBM PPDS modes on the Other Emulation Settings menu.
These settings are shown in the following tables and explained in detail after the each table.

To access and change a setting, see "Changing default settings" on page 94.

Default-setting mode

Common Settings

Menu	Values (default in bold)
Software	**PR2**, ESC/P2, IBM PPDS
High speed draft	**Off**, On
I/F mode *	**Auto**, Parallel, Serial, USB
Auto I/F wait time (Seconds)	**10**, 30
Parallel I/F bidirectional mode	Off, **On**
Packet mode **	**Auto**, Off
Baud rate (bps)	19200, **9600**, 4800, 2400, 1200, 600, 300
Data length (bit)	**8**, 7
Parity	**None**, Odd, Even
DSR (PR2)	**Off**, On
DCD (PR2)	**Off**, On
Passbook	Off, **On**
Binding	**Horizontal**, Vertical
Thin paper	**Off**, On
Buzzer	Off, **On**
Paper width measurement	**After loading**, Before printing
Right paper edge detection	Off, **On**
Low-noise mode	**Off**, On
Broken pin compensation	**Off**, On
Broken pin number	**1**, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24
Roll Paper	**Off**, On
Rear Paper Guide	**Off**, On

* When the printer turns on in Auto I/F mode and PR2 mode, this mode is set to Serial.

** When the printer turns on in the PR2 mode, Packet mode is set Off.

Software

This setting allows you to select the software format. When you select ESC/P2, the printer operates in the EPSON ESC/P mode. When you select PR2 or IBM PPDS, the printer emulates an Olivetti or IBM printer.

High speed draft

In PR2 mode, this option is available in any pitch.
In other modes, this option is available when the pitch is 10 or 12 cpi (characters per inch). When you choose On, the printer prints up to 480 cps (characters per second) at 10 cpi. When you choose Off, the printer prints up to 360 cps at 10 cpi.

I/F mode

The printer provides built-in slots for three kinds of interfaces; Parallel, Serial, and USB. You can choose Auto (automatic), Parallel, Serial, or USB, for the interface mode. When you select Auto, the printer automatically selects the interface that is receiving data, and uses that interface until the end of the print job. The Auto setting allows you to share the printer among multiple computers without changing the interface mode. When the printer turns on in Auto I/F mode and PR2 mode, this mode is set to Serial.

If only one computer is connected to the printer, you can select Parallel, Serial, or USB depending on which interface your computer uses.

Auto I/F wait time (Seconds)

When the printer is in the auto interface mode and it receives no data from the currently selected interface for the amount of time specified with this setting, it determines which interface is receiving data and switches to that interface. You can specify either 10 or 30 for the auto interface wait time. When the printer turns on in the PR2 mode, this mode is not activated.

Parallel I/F bidirectional mode

The Parallel Interface bidirectional transfer mode is used when this feature is set to On. If bidirectional transfer mode is unnecessary, select Off.

Packet mode

Make sure to select Auto when you print from Windows applications using the printer driver included on the User CD-ROM. Set this feature to Off if you have connection troubles while printing from applications based on other operating systems such as DOS. When the printer turns on in the PR2 mode, this mode is set to Off.

Baud rate (bps)

Use this option to set the data transfer rate (baud) for the serial interface. The baud rate is measured in bits per second (bps).

Data length (bit)

Set the data length of the serial interface to 7 or 8.

Parity

When this option is set to None, parity checking is disabled. The parity bit, if used, provides a basic form of error detection.

DSR (PR2)

When you select On, DSR (Data Set Ready) is activated.

This option is available only in the PR2 mode.

DCD (PR2)

When you select On, DCD (Data Carrier Detector) is activated.

This option is available only in the PR2 mode.

Passbook

When you use single sheet or passbook, set this option to On. When you use multipart forms, set this option to Off.

Binding

You need to set the method for binding when you use a passbook. Select Horizontal for a horizontal-fold passbook or Vertical for a vertical-fold passbook.

Thin paper

When you use thin paper, set this option to On. This mode is activated when you select On and the Passbook mode is set to Off.

Buzzer

If you set this feature to On, the printer beeps when an error occurs. See "Using the error indicators" on page 99 for more information on printer errors. If you do not want the printer to beep, select Off.

Paper width measurement

You can set the timing when the printer measures the width of the paper. When you select After loading, the printer measures the width just after it loads the paper. When you select Before printing, it makes the measurement just before printing the first line.

Right paper edge detection

This setting allows you to determine whether the printer prints excess data when the data is longer than the paper width. When you select On, the excess data is not printed. When you select Off, the printer prints the excess data on the next line.

Low-noise mode

When this mode is set to On, the noise is reduced, but the printing speed is slower.

Broken pin compensation

When this feature is On, printing is done at normal quality if one of the 24 pins is broken. You need to set the broken pin number at the Broken pin number setting.

Broken pin number

Select the pin number of the broken pin. The broken pin number is shown on the sheet of current default settings that can be printed in the default settings mode. The gap on the sloping line above the pin numbers shows the broken pin number.

Roll Paper

When you use roll paper with the optional roll paper holder, set this option to On. This mode is activated when you select On and the Passbook mode is set to Off.

When this option is set to Off and paper is left in the printer, the printer ejects the paper when the printer is turned on or the cover is opened. When this option is set to On, the printer does not eject the paper.

Rear Paper Guide

When you use the optional rear paper guide, set this option to On.

When you select On and the Roll Paper mode is also set to On, the Roll Paper mode is not available.

PR2 Mode Settings

Menu	Values (default in bold)
Emulation	**PR2**, PR40+, PR54+
Font	Draft, **NLQ1**, NLQ2, LQ2, OCR-A, OCR-B
Pitch (cpi)	10, **12**, 15, 16.6, 13, 17.1
Character table	**Olivetti**, PC, ISO

Menu	Values (default in bold)
Olivetti character table	**ST15INT (International)**, ST15ITA (Italy), ST15P (Portugal), ST15USSR (USSR), ST15SDC (SDC),ST15E (Spain 1), ST15E2 (Spain 2), ST15S/SF (Sweden/Finland), ST15CH (Switzerland), ST31 (Olivetti TCV 370), ST15TR (Turkey), ST15USA (U.S.A.), ST15YU (Yugoslavia), ST15ARABIC (Arabic), ST15CND (Canada), ST15CIBC (CIBC), ST15DK/N (Denmark/Norway), ST15IL (Israel), ST15F (France), ST15UK (Great Britain), ST15D (Germany), ST15GR (Greece)
PC character table	**PC437 (INT)**, PC210 (GR), PC220 (E), PC850 (LATIN 1), PC851 (GREEK), PC 852 (LATIN 2), PC855 (CYRILLIC), PC857 (LATIN 5), PC858 (LATIN EURO), PC860 (P), PC862 (IL), PC863 (CANADIAN FRENCH), PC864 (ARABIC), PC865 (NORDIC), PC866 (CYRILLIC), DK/N (Denmark/Norway), DK (Denmark), PC1252 (PC-WIN LATIN1), PC1250 (PC-WIN LATIN2)
ISO character table	**CPOLUNIX**, ISO 8859/15, ISO 8859/1, ISO 8859/2, ISO 8859/5, ISO 8859/6, ISO 8859/7, ISO 8859/8, ISO 8859/9
8-pin bit image resolution	72, **96**
Condensed pitch (cpi)	**16.6**, 17.1
Vertical resolution	1/216", **1/240"**
Auto CR	**Off**, ON
Columns	90, **94**
TOF position for PR40+	**Off**, On
Magnetic standard *	DIN/ISO, ANSI, **IBM3604**, IBM4746, ISO7811, HT2751CIZ, ISO8484

Menu	Values (default in bold)
End sentinel * **	C, **F**
Displacement *	**Standard**, +10, +20
Duplicate *	**Off**, On
Retry *	**1**, 3

* These settings are available only for PLQ-20M.

** This setting is effective, when the format of IBM3604 or IBM4746 is selected.

Emulation

You can select emulation of PR2, PR40+, or PR54+.

Font

This setting allows you to set one of the six fonts.

Pitch (cpi)

This setting allows you to set one of six pitches.

Character table

You can set one of the three character tables; Olivetti, PC, ISO.

Olivetti character table

You can select a font. The setting you select in this table is effective only when you have chosen Olivetti in the Character table setting.

PC character table

You can select a font. The setting you select in this table is effective only when you have chosen PC in the Character table setting.

ISO character table

You can select a font. The setting you select in this table is effective only when you have chosen ISO in the Character table setting.

8-pin bit image resolution

You can select 72 or 96 as the default value of the 8 pin bit image resolution.

Condensed pitch (cpi)

You can set the pitch that is used in the condensed mode.

Vertical resolution

This setting allows you to select the vertical resolution.

Auto CR

When auto carriage return is set to On, each line feed (LF) code is accompanied by a carriage return (CR) code so the printer moves the next printing start position to the left margin. When this setting is set to Off, you must send a CR code after the line feed code to move the printing start position to the left margin.

Columns

You can select the number of columns in one line.

TOF position for PR40+

When you select On in this option and PR40+ in Emulation, the top-of-form position is set to 6.5 mm which is unique to the PR40+ mode. When you select Off and PR40+, the top-of-form position is set to the same position as in the PR2 and PR54+ modes (the factory set default is 4.2 mm).

Magnetic standard

You can select the magnetic standard in this setting.

This feature is available only for PLQ-20M.

End sentinel

You can select C or F as the letter which will be attached to the end of the data recorded on magnetic stripes.

This setting is effective only when the format for IBM3604 or IBM4746 is selected in the Magnetic standard setting.

This feature is available only for PLQ-20M.

Displacement

This option allows you to select the displacement value of the magnetic stripe.

This feature is available only for PLQ-20M.

Duplicate

When this feature is set to On, the magnetic stripes record the data in duplicate.

This feature is available only for PLQ-20M.

Retry

This setting allows you to set the number of times the printer tries to receive data before it fails.

This feature is available only for PLQ-20M.

Other Emulation Settings

Menu	Values (default in bold)
Print direction	Bi-D., Uni-D., **Auto**
0 slash	**0**, ∅
Font	Draft, **Roman**, Sans Serif, Courier, Prestige, Script, OCR-B, Orator, Orator-S, Script C, Roman T, Sans Serif H
Pitch (cpi)	**10**, 12, 15, 17.1, 20, Proportional
Character table	Standard model: Italic, **PC437**, PC850, PC860, PC863, PC865, PC861, BRASCII, Abicomp, Roman 8, ISO Latin 1, PC858, ISO 8859-15 All other models: Italic, **PC437**, PC850, PC437 Greek, PC853, PC855, PC852, PC857, PC866, PC869, MAZOWIA, Code MJK, ISO 8859-7, ISO Latin IT, Bulgaria, PC774, Estonia, ISO 8859-2, PC 866 LAT., PC 866 UKR, PC860, PC861, PC865, PC864, PC APTEC, PC708, PC720, PC AR864, PC863, BRASCII, Abicomp, Roman 8, ISO Latin 1, PC858, ISO 8859-15, PC 771, PC437 Slovenia, PC MC, PC 1250, PC 1251
International character set for Italic table	**Italic U.S.A.**, Italic France, Italic Germany, Italic U.K., Italic Denmark 1, Italic Sweden, Italic Italy, Italic Spain 1
Auto line feed	**Off**, On
Auto CR (IBM PPDS) *	**Off**, On
AGM (IBM PPDS) *	**Off**, On
IBM character table (IBM PPDS) *	**Table2**, Table1
Columns	80, 90, **94**
Paper loading	**Auto loading**, Data exists

* These settings are effective when IBM PPDS emulation is selected.

Print direction

You can select auto print direction (Auto), bidirectional printing (Bi-D), or unidirectional printing (Uni-D). Printing is normally bidirectional; however, unidirectional printing allows for precise vertical printing alignment.

When set to Auto, the printer analyzes the data and uses unidirectional printing for any lines which require vertical printing alignment.

0 slash

The zero character has a slash (∅) when this feature is set to On; it has no slash (0) when set to Off. The slash allows you to easily distinguish between the uppercase letter "O" and a zero.

Font

This setting allows you to set one of the 12 fonts.

Pitch (cpi)

This setting allows you to set one of six pitches.

Character table

You can select among various character tables. This setting is used when you print without using the printer driver.

When using the printer driver, change the settings on the printer driver. For details, see "Printer Driver Settings Overview" on page 47.

International character set for italic table

You can select among several international character sets for the italic character table. Each character set contains eight characters that vary depending on the country or language, so you can customize the italic table to suit your printing needs.

Auto line feed

When auto line feed is set to On, the printer accompanies each carriage return (CR) code received with a line feed (LF) code.

Auto CR (IBM PPDS)

When auto carriage return is set to On, each line feed (LF) code or ESC J code is accompanied by a carriage return (CR) code so the printer moves the next printing start position to the left margin. When this setting is set to Off, you must send a CR code after the line feed code to move the printing start position to the left margin.

This feature is available only in IBM PPDS emulation mode.

A.G.M. (IBM PPDS)

When the alternate graphic mode (A.G.M.) is set to On, the ESC 3, ESC A, ESC J, ESC K, ESC L, ESC Y, ESC Z, and ESC * commands in IBM PPDS emulation mode work the same way as in ESC/P mode.

This feature is available only in IBM PPDS emulation mode.

IBM character table (IBM PPDS)

Select table2 or table1 for the IBM character table.

This feature is available only in IBM PPDS emulation mode.

Columns

You can select the number of columns in one line.

Paper loading

When you set Auto load, the printer loads paper just after it is inserted. When you set Data exists, the printer does not load the paper until it receives the data.

Changing default settings

The following table shows the basic function of each button in the default setting mode.

Button	Basic function
F1/Eject	Selects the next menu parameter.
Offline	Selects the previous menu parameter.
F2	Changes the value in the selected menu.

Follow these steps to enter the default-setting mode and change the printer's default settings:

Note:
❏ *Prepare an A4 size sheet of paper before entering the default setting mode.*

❏ *You need to load a new sheet of paper each time the printer ejects a printed sheet from the front slot.*

❏ *Always close the printer cover before printing. The printer does not print when the printer cover is open.*

1. Turn off the printer.

> **Caution:**
> *Whenever you turn off the printer, wait at least five seconds before turning it back on; otherwise you may damage the printer.*

2. Turn on the printer while holding the F1/Eject and F2 buttons on the control panel.

3. When the Ready light turns on, insert a sheet of A4 paper into the front slot. The printer prints the version number and the language selection for the default settings menu. The underline shows the selected language. Select the language by pressing the F1/Eject button.

4. Press the F2 button to set the language. The printer prints a message asking if you wish to print the current settings. If you wish to print the current settings, press the F2 button. The printer prints the current settings. The underline shows the setting value that is currently selected for each item. You can also bypass printing the current setting by pressing the F1/Eject button.

5. The printer prints the setting method and the first selection of the main setup menu.

    Common Settings menu

    PR2 Mode Settings menu

    Other Emulation Settings menu

    You can select the main setup menu by pressing F2. Then press the F1/Eject to set it.

6. Select the menu parameters which you wish to change by pressing the F1/Eject button (for the next item) or the Offline button (for the previous item). The printer prints the item and the current setting value of that item is underlined.

7. Press the F2 button to change the value and the printer prints the next value.

8. You may either continue to make changes to other parameters by pressing the F1/Eject or Offline button. The menu selection will return to the selection of the three main setup menus after the selection of the last parameter on each menu is done.

9. After you finish the default setting, turn off the printer to exit the default setting mode.

Aligning Vertical Lines in Your Printout

If you notice that the vertical lines in your printout are not properly aligned, you can use the printer's bidirectional adjustment mode to correct this problem.

During bidirectional adjustment, the printer prints three sheets of alignment patterns, labeled Draft, Bit image (ESC * 26H), and LQ (letter quality). As described below, you select the best alignment pattern from each sheet.

Note:
Prepare an A4 size sheet of paper before entering the bidirectional adjustment mode.

Follow these steps to perform the bidirectional adjustment:

1. Turn off the printer.

    Caution:
    Whenever you turn off the printer, wait at least five seconds before turning it back on; otherwise you may damage the printer.

2. Turn on the printer while holing the F2 button.

3. Press the F1/Eject button while the F1/Eject, Offline, and F2 lights are flashing.

4. When the Ready light turns on, insert a sheet of A4 paper into the front slot. The printer prints the guide to adjust the bidirectional alignment and the first set of alignment patterns.

5. As described in the instructions, compare the alignment patterns and select the pattern with the best alignment. You can select the alignment pattern by pressing the F1/Eject button (for the next pattern) and the F2 button (for the previous pattern). The F1/Eject, Offline and F2 lights show the pattern which is selected at that time. Each time you press the F1/Eject or F2 button, the printer makes a short beep.

6. Set the pattern by pressing the Offline button. The printer prints the next set of alignment patterns.

7. After you select the best pattern in the final set of alignment patterns and set it by pressing the Offline button, turn off the printer. The setting does not change even if the printer is turned off.

Chapter 6

Problem Solver

Diagnosing the Problem

For problems that may be related to USB connections, see "Correcting USB Problems" on page 115 for details.

If your problem is not USB related, troubleshooting printer problems is best handled in two easy steps; first diagnose the problem, then apply likely solutions until the problem is fixed.

The information that you need to diagnose and solve most common problems is provided by the printer's control panel, EPSON Status Monitor 3, or by printing a self-test or hex dump. Refer to the appropriate section below.

If you have a specific problem relating to print quality, a printout problem not related to print quality, or a paper feeding problem, or if the printer does not print at all, refer to the appropriate section in this chapter.

To solve a problem, you may need to cancel printing. For details, see "Canceling Printing" on page 67.

Using the error indicators

You can identify many common printer problems using the lights on the control panel. If your printer stops working and one or more control panel lights are on or flashing or the printer beeps, use the following table to diagnose and fix the problem. If you cannot fix your printer problem using this table, see "Problems and Solutions" on page 105.

Note:
The printer beeps once if you press a control panel button when the corresponding function is not available.

PR2 mode

State of panel lights	Beep pattern	Problem
		Solution
● Power Ö Ready	—	There is no paper loaded in the slot.
		Load a paper into the front slot.
	—	Paper is not loaded correctly.
		Remove the paper and reload it correctly. See "Loading Passbooks" on page 28, or "Loading Single Sheets" on page 29.
	—	Paper is not fully ejected.
		See "Clearing Paper Jams" on page 119 for instruction on ejecting paper.
	—	Paper is jammed in the printer.
		To clear the paper jam, see "Clearing Paper Jams" on page 119.
● Power ● Offline	—	The printer cover is open.
		Stop the operation and close the printer cover.
● Power Ö Offline	—	The print head is overheated.
		Wait for a few minutes; the printer resumes printing automatically once the print head cools.
● Pause Ö Ready Ö F1/Eject Ö Offline Ö F2	•••••	An unknown printer error has occurred.
		Turn off the printer and leave it off for several minutes; then turn on the printer again. If the error recurs, contact your dealer.

● = on, Ö = flashing

••• = short series of beeps (three beeps), ••••• = long series of beeps (five beeps)

ESC/P and IBM PPDS modes

State of panel lights	Beep pattern	Problem
		Solution
● Power Ö Ready ● Offline	•••	There is no paper loaded in the slot.
		Load a paper into the front slot.
	•••	Paper is not loaded correctly.
		Remove the paper and reload it correctly. See "Loading Passbooks" on page 28, or "Loading Single Sheets" on page 29.
	•••	Paper is not fully ejected.
		Press the F1/Eject button to eject paper.
	•••	Paper is jammed in the printer.
		To clear the paper jam, see "Clearing Paper Jams" on page 119.
● Power ● Offline	•••	The printer cover is open.
		Stop the operation and close the printer cover.
● Power Ö Offline	—	The print head is overheated.
		Wait for a few minutes; the printer resumes printing automatically once the print head cools.
● Pause Ö Ready Ö F1/Eject Ö Offline Ö F2	•••••	An unknown printer error has occurred.
		Turn off the printer and leave it off for several minutes; then turn on the printer again. If the error recurs, contact your dealer.

● = on, Ö = flashing

••• = short series of beeps (three beeps), ••••• = long series of beeps (five beeps)

EPSON Status Monitor 3

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

If a problem occurs while printing, an error message appears in the Progress Meter window.

Printing a Self-Test

Running the printer's self-test helps you determine whether the printer or the computer is causing the problem:

❏ If the self-test results are satisfactory, the printer is working properly and the problem probably results from your printer driver settings, application settings, computer, or interface cable. (Be sure to use a shielded interface cable.)

❏ If the self-test does not print properly, there is a problem with the printer. See "Problems and Solutions" on page 105 for possible causes and solutions to the problem.

Note:
❏ *Prepare an A4 size sheet of paper before entering the self-test printing mode.*

❏ *Always close the printer cover before printing. The printer does not print when the printer cover is open.*

Follow these steps to perform a self-test:

1. Turn off the printer.

> ! *Caution:*
> *Whenever you turn off the printer, wait at least five seconds before turning it back on; otherwise you may damage the printer.*

2. Turn on the printer while holding the F2 button. Then press the F1/Eject and F2 button while the F1/Eject, Offline, and F2 lights are flashing.

3. When the Ready light turns on, insert a sheet of A4 paper into the front slot.

4. The printer prints the self-test pattern in the font selected in the default settings mode.

```
Roman
  !"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_'abcdefghijklmnopqrstuvwxyz{¦}˜Ç
 !"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_'abcdefghijklmnopqrstuvwxyz{¦}˜Çü
 "#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_'abcdefghijklmnopqrstuvwxyz{¦}˜Çüé
                                    .
                                    .
                                    .
                                    .
                                    .
```

Note:
To stop the self-test temporarily, press the offline *button. To resume the test, press the* offline *button again.*

Caution:
Do not turn off the printer while it is printing the self-test. Always press the Offline *button to pause printing. Then turn off the printer.*

Printing Hex Dump

If you are an experienced user or a programmer, you can print a hexadecimal dump to isolate communication problems between the printer and your software program. In hex dump mode, the printer prints all data it receives from the computer as hexadecimal values.

Note:
❏ *The hex dump feature is designed for use with DOS-based PC.*

❏ *Prepare an A4 size sheet of paper before entering the hex dump printing mode.*

❏ *Always close the printer cover before printing. The printer does not print when the printer cover is open.*

Follow these steps to print a hex dump:

1. Turn off the printer.

   > **Caution:**
   > *Whenever you turn off the printer, wait at least five seconds before turning it back on; otherwise you may damage the printer.*

2. Turn on the printer while holding the Offline button to enter hex dump.

3. Open a software program and send a print job to the printer. Your printer prints all the codes it receives in hexadecimal format.

```
1B 40 20 54 68 69 73 20 69 73 20 61 6E 20 65 78    .@ This is an ex
61 6D 70 6C 65 20 6F 66 20 61 20 68 65 78 20 64    ample of a hex d
75 6D 70 20 70 72 69 6E 74 6F 75 74 2E 0D 0A       ump printout....
```

By comparing the characters printed in the right column with the printout of the hexadecimal codes, you can check the codes the printer is receiving. If characters are printable, they appear in the right column as ASCII characters. Nonprintable codes, such as control codes, are represented by dots.

> **Caution:**
> *Do not turn off the printer while it is printing the hex dump. Always press the Offline button to pause printing. Then turn off the printer.*

Problems and Solutions

Most problems you may encounter while operating your printer have simple solutions. Use the information in this section to find the source of and solution to printer problems that occur.

"Power supply problems" on page 106

"Paper loading or feeding problems" on page 107

"Printing position problems" on page 108

"Printing or printout quality problems" on page 109

"Network problems" on page 114

You can also use the self-test to determine whether the printer or the computer is causing the problem. See "Printing a Self-Test" on page 102 for instructions on printing a self-test. To pinpoint communication problems, experienced users may want to use the printer's hex dump mode described in "Printing Hex Dump" on page 103.

To clear a paper jam, see "Clearing Paper Jams" on page 119.

Power supply problems

The control panel lights come on briefly, but then go off and stay off.	
Cause	**What to do**
The printer's voltage rating does not match the voltage of your electrical outlet.	Check the printer and the outlet voltage ratings. If the voltages do not match, unplug the printer immediately and contact your dealer.

Warning:
Do not reconnect the power cord to an electrical outlet that has the wrong voltage for your printer.

The printer does not work and the control panel lights are off even when you turn on the printer.	
Cause	**What to do**
The power cord is not properly plugged into the electrical outlet or your printer.	Turn off the printer, and make sure the power cord is firmly plugged into the electrical outlet and the printer, if necessary. Then turn on the printer.
The electrical outlet does not work.	Use a different outlet.

Paper loading or feeding problems

The printer does not load single-sheet paper or does not feed it properly.	
Cause	**What to do**
Single-sheet paper is not loaded properly.	See "Loading Single Sheets" on page 29 for instructions on loading single-sheet paper.
Paper is creased, old, too thin, or too thick.	See the *Paper Specification* for information about the printable paper and use new, clean sheets of paper.

The printer does not fully eject a single sheet.	
Cause	**What to do**
Paper is too long.	When the printer is in the PR2 mode, see "Clearing Paper Jams" on page 119 for instructions on ejecting paper. When you are in the ESC/P and IBM PPDS modes, press the F1/Eject button. Make sure the page length of your paper is within the range specified for single-sheet paper in *Paper Specification*. Also check and adjust the paper size setting in your application or printer driver.

The printer does not load passbook or does not feed it properly.	
Cause	**What to do**
Passbook is not loaded properly.	See "Loading Passbooks" on page 28 for instructions on loading passbooks.

Printing position problems

Wrong top-of-form position

Your printing appears too high or low on the page.	
Cause	**What to do**
The paper size setting in your application software or printer driver does not match the size of the paper you are using.	Check the paper size setting in your application or printer driver.
The top margin or top-of-form position setting is incorrect.	Check and adjust the margin or top-of-form position settings in your application software. For information on printable areas, see the *Paper Specification*.
	You can also adjust the top-of-form position using the top-of-form adjusting function. See "Adjusting the top-of-form position" on page 31.
The printer driver settings you want to use are not selected in your software.	Choose the correct printer driver setting from the Windows desktop or in your application before printing.

Printing or printout quality problems

The printer is on but it doesn't print.	
Cause	**What to do**
The interface cable is broken or twisted.	Check that the interface cable is not broken or twisted. If you have another interface cable, replace the cable and check whether the printer works correctly.
The printer is not connected directly to your computer.	When you use a printer changer, printer buffer, or a extension cable, the printer does not print correctly due to the combination of these devices. Make sure that the printer works correctly when it is connected to your computer without these devices.
The printer driver is not installed correctly.	Check that the printer driver is installed properly. If necessary, reinstall the printer driver.
Paper is jammed or the ribbon or guard mechanism is stuck.	Turn the printer off, open the printer cover and remove the jammed paper or things that are stuck. To eject the jammed paper, see "Clearing Paper Jams" on page 119.
The USB setting is incorrect.	Confirm the USB setting is correct. See "Correcting USB Problems" on page 115 for details.
The printer is hung-up (stopping in abnormal situations).	Turn the printer off and wait for a while. Then, turn the printer on again, and start printing.

The printer does not print when the computer sends data.

Cause	What to do
The printer is paused.	Press the Offline button to turn off the Power light.
The interface cable is not plugged in securely.	Check that both ends of the cable between the printer and the computer are plugged in securely. If the cable is connected correctly, run a self-test as described in "Printing a Self-Test" on page 102.
Your interface cable does not meet the printer and/or computer specifications.	Use an interface cable that meets the requirements of both the printer and computer. See "Electronic" on page 150 and your computer documentation.
Your software is not properly set up for your printer.	Select your printer from the Windows desktop or in your application. If necessary, install or reinstall the printer driver software. For the information on installing the software, see "Installing the Printer Software" on page 13.

The printer makes noise, but nothing prints or printing stops abruptly.

Cause	What to do
The ribbon has too much slack, the ribbon has come loose, or the ribbon cartridge is not installed properly.	Remove any slack in the ribbon by turning the ribbon-tightening knob, or reinstall the ribbon cartridge as described in the section under "Replacing the ribbon cartridge" on page 132.

The printout is pale.

Cause	What to do
The ribbon is worn out.	Replace the ribbon cartridge as described in "Replacing the ribbon cartridge" on page 132.

The printout is faint.

Cause	What to do
The ribbon is worn out.	Replace the ribbon cartridge as described in "Replacing the ribbon cartridge" on page 132.

Part of the printout is missing, or dots are missing in random positions.

Cause	What to do
The ribbon has too much slack, the ribbon has come loose, or the ribbon cartridge is not installed properly.	Remove any slack in the ribbon by turning the ribbon-tightening knob, or reinstall the ribbon cartridge as described in "Replacing the ribbon cartridge" on page 132.
The ribbon is worn out.	Replace the ribbon cartridge as described in "Replacing the ribbon cartridge" on page 132.

Lines of dots are missing in the printout.

Cause	What to do
The print head is damaged.	Print the current settings in the default settings mode and check the pin condition. See "Changing default settings" on page 94 to see how to print them.
	If only one pin is broken, other pins can compensate for it. See "Broken pin compensation" on page 85 for details.
	If more than two pins are broken, stop printing and contact your dealer to have the print head replaced.

> **Caution:**
> *Never replace the print head yourself; you may damage the printer. Also, other parts of the printer must be checked when the print head is replaced.*

All the text is printed on the same line.

Cause	What to do
No line feed command is sent at the end of each line of text.	Set the Auto line feed setting to On in the default settings mode so that the printer automatically adds a line feed code to each carriage return. See "Changing default settings" on page 94.

The printout has extra blank lines between lines of text.

Cause	What to do
Two line feed commands are being sent at the end of each line of text, because the printer's auto line feed setting is on.	Set the Auto line feed setting to Off in the default settings mode. See "Changing default settings" on page 94.

The line space setting in your application software is incorrect.	Adjust the line space setting in your application software.

The printer prints strange symbols, incorrect fonts, or other inappropriate characters.

Cause	What to do
Your printer and computer are not communicating correctly.	Make sure that you use the correct interface cable and that the communications protocol is correct. See "Electronic" on page 150 and your computer documentation.
The wrong character table is selected in your software.	Select the correct character table using your software or the default-setting mode. The character table setting in your software overrides settings made in the default-setting mode.
The printer you want to use is not selected in your software.	Choose the correct printer from the Windows desktop or in your application before printing.
Your application software is not configured correctly for your printer.	Make sure that your application software is configured correctly for your printer. See your application documentation. If necessary, install or reinstall the printer driver software. For the information on installing the software, see "Installing the Printer Software" on page 13.
Software settings override settings you make using the default-setting mode or the control panel buttons.	Use your application software to select the font.

Vertical printed lines are not aligned.

Cause	What to do
Bidirectional printing, which is the printer's standard printing mode, is out of alignment.	Use the printer's bidirectional adjustment mode to correct this problem. See "Aligning Vertical Lines in Your Printout" on page 96.

Network problems

The printer does not print when using a network.

Cause	What to do
The network setting is wrong.	Check whether or not print jobs from other computers are being printed through the network.
	When the print job is executed, the printer or your computer may have a problem. Check the connection between the printer and your computer, settings on the printer driver, and settings of your computer.
	When the print job is not executed, network settings may be incorrect. Ask your network administrator for help.

Correcting USB Problems

If you are having difficulty using your printer with a USB connection, read the information in this section.

Make sure that your computer is a Windows XP, Me, 98, or 2000 pre-installed model

Your computer must be a Windows XP, Me, 98, or 2000 pre-installed model. You may not be able to install or run the USB printer driver on a computer which is not equipped with a USB port or which has been upgraded from Windows 95 to Windows XP, Me, 98, or 2000.

For details about your computer, contact your dealer.

Make sure that EPSON USB Printer Devices appears on the Device Manager menu (for Windows Me and 98 only)

If you canceled the plug-and-play driver installation before the procedure was complete, either the USB printer device driver or the printer driver may be incorrectly installed.

Follow these steps to check the installation and reinstall the drivers:

1. Turn the printer on, and plug the USB cable into the printer and the computer.

2. Right-click the My Computer icon on your desktop, then click Properties.

3. Click the Device Manager tab.

If your drivers are correctly installed, EPSON USB Printer Devices should appear on the Device Manager menu.
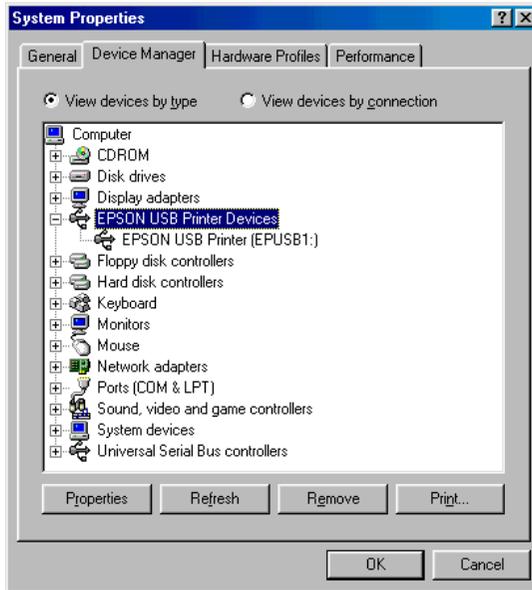
If EPSON USB Printer Devices does not appear on the Device Manager menu, click the plus (+) sign beside Other devices to view the installed devices.
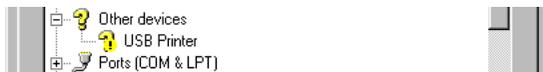
If USB Printer appears under Other devices, the USB printer device driver is not installed correctly. If EPSON PLQ-20 appears, the printer driver is not installed correctly.

If USB Printer, or EPSON PLQ-20 does not appear under Other devices, click Refresh or unplug the USB cable from the printer, then plug it into the printer again.

Note:
The printer driver is designed for PLQ-20, but is compatible and can be installed for PLQ-20M.

4. Under Other devices, select USB Printer or EPSON PLQ-20(for the PLQ-20 users) and click Remove. Then, click OK.
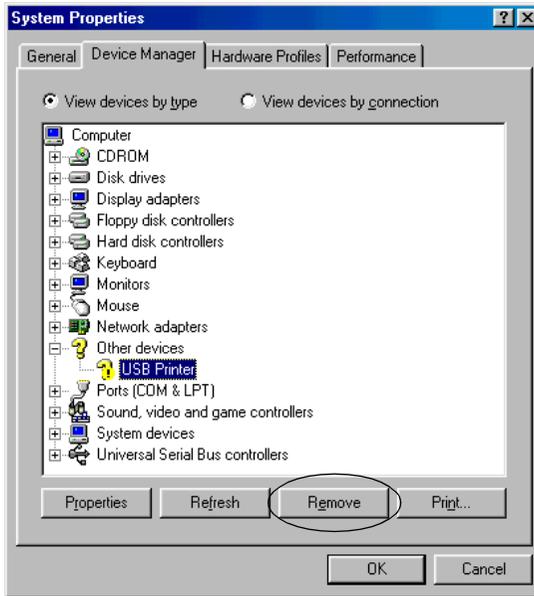
Note:
The printer driver is designed for PLQ-20, but is compatible and can be installed for PLQ-20M.

5. When the following dialog box appears, click OK. Then click OK again to close the System Properties dialog box.

6. Turn off the printer and restart your computer. Then, reinstall the drivers from the beginning, following the instructions in "Installing the Printer Software" on page 13.

Printer does not work correctly with the USB cable

If your printer does not work correctly with the USB cable, try one or more of these solutions:

❏ Make sure that the cable you are using is a standard, shielded USB cable.

❏ If you are using a USB hub, connect the printer to the first tier of the hub, or connect the printer directly to the computer's USB port.

❏ For Windows 98, try reinstalling the USB printer device driver and the printer software. First, uninstall EPSON Printer Software using the Add/Remove Programs utility in the Control Panel, then uninstall EPSON USB Printer Devices. Next, reinstall the software as described in "Installing the Printer Software" on page 13. If EPSON USB Printer Devices is not registered in the Add/Remove Programs list, access the CD-ROM and double-click Epusbun.exe in Win98 folder. Then follow the on-screen instructions.

Clearing Paper Jams

If paper is not automatically ejected in the situations noted below, a paper jam may have occurred inside the printer.

❏ The printer is turned on or the cover is opened when the Roll paper mode is Off.

❏ You press the F1/Eject button in the ESC/P or IBM PPDS mode.

Follow the steps noted below to clear the paper jam.

> ⚠ *Warning:*
> *If you have just used the printer, the print head may be hot; let it cool for a few minutes before touching it.*

1. Turn off the printer.

   > ❗ *Caution:*
   > *Whenever you turn off the printer, wait at least five seconds before turning it back on; otherwise you may damage the printer.*

2. Open the cover and press the release lever to move the upper mechanism. Then hold the jammed paper with both hands and pull it out of the printer. If you can clear the paper jam, move the upper mechanism to its original position by pulling the release lever and then close the printer cover. If it is difficult to do that, go to the next step.

   > ❗ *Caution:*
   > *Make sure that you move the upper mechanism by pulling the release lever. Do not pull the mechanism by hand. It may damage the printer.*

3. Turn on the printer while pressing the F1/Eject button. The printer is in the paper removing mode and ready to start feed operations. See the table below to find out how the F1/Eject and F2 buttons work in this mode and execute the appropriate operation.

Button	Press	Hold for a few seconds
F1/Eject	Feeds paper forward a few lines every time you press it.	Eject paper forward.
F2	Feeds paper backward a few lines every time you press it.	Eject paper backward.

If you can clear the paper jam, turn off the printer, move the upper mechanism to its original position by pulling the release lever, and then close the printer cover to finish the operation. If you cannot clear the paper jam with this function, stop the operation and contact your dealer.

> **Caution:**
> *Make sure that you move the upper mechanism by pulling the release lever. Do not pull the mechanism by hand. It may damage the printer.*

Contacting Customer Support

If your Epson product is not operating properly and you cannot solve the problem using the troubleshooting information in your product documentation, contact customer support services for assistance. If customer support for your area is not listed below, contact the dealer where you purchased your product.

Customer support will be able to help you much more quickly if you give them the following information:

❏ Product serial number
(The serial number label is usually on the back of the product.)

❏ Product model

❏ Product software version
(Click About, Version Info, or similar button in the product software.)

❏ Brand and model of your computer

❏ Your computer operating system name and version

❏ Names and versions of the software applications you normally use with your product

For users in North America

If you purchased your printer in the United States or Canada, Epson provides technical assistance 24 hours a day through the electronic support services and automated telephone services listed in the following table:

Service	Access
World Wide Web	From the Internet, you can reach Epson Support at http://support.epson.com. At this site, you can download drivers and other files, look at product documentation, access troubleshooting information, and receive technical advice through e-mail.
Automated Telephone Services	A variety of automated help services are available 24 hours a day, seven days a week. To use these services, you must have a touch tone telephone and call **(800) 922-8911**.

To speak to a technical support representative, dial:
(562) 276-4322 (U.S.), or **(905) 709-2170** (Canada), 6 AM to 6 PM, Pacific Time, Monday through Friday. Toll or long distance charges may apply.

Before you call, please have the following information ready:

❏ Product name

❏ Product serial number (located on the back of the printer)

❏ Proof of purchase (such as a store receipt) and date of purchase

❏ Computer configuration

❏ Description of the problem

Note:
For help using any other software on your system, see the documentation for that software for technical support information.

You can purchase ribbon cartridges, paper, manuals, and accessories from the Epson Store at **(800) 873-7766** or visit http://www.epsonstore.com (U.S. sales only). In Canada, please call **(800) 463-7766** for dealer referral.

For users in Australia

Epson Australia wishes to provide you with a high level of customer service. In addition to your product documentation, we provide the following sources for obtaining information:

Your Dealer

Don't forget that your dealer can often help identify and resolve problems. The dealer should always be the first call for advise on problems; they can often solve problems quickly and easily as well as give advise on the next step to take.

Internet URL http://www.epson.com.au

Access the Epson Australia World Wide Web pages. Worth taking your modem here for the occasional surf! The site provides a download area for drivers, Epson contact points, new product information and technical support (e-mail).

Epson Faxback Service

Epson Faxback service will fax you the latest specifications for most Epson products offered in Australia. Phone (02) 9903 9075 and the system will guide you through a number of choices before faxing the information to your fax machine.

Epson Helpdesk

Epson Helpdesk is provided as a final backup to make sure our clients have access to advise. Operators on the Helpdesk can aid you in installing, configuring and operating your Epson product. Our Pre-sales Helpdesk staff can provide literature on new Epson products and advise where the nearest dealer or service agent is located. Many types of queries are answered here.

The Helpdesk numbers are:

Phone: 1300 361 054

Fax: (02) 9903 9189

We encourage you to have all the relevant information on hand when you ring. The more information you prepare, the faster we can help solve the problem. This information includes your Epson product documentation, type of computer, operating system, application programs, and any information you feel is required.

For users in Singapore

Sources of information, support, and services available from Epson Singapore are:

World Wide Web (http://www.epson.com.sg)

Information on product specifications, drivers for download, Frequently Asked Questions (FAQ), Sales Enquiries, and Technical Support via e-mail are available.

Epson HelpDesk (Phone: (65) 6586 3111)

Our HelpDesk team can help you with the following over the phone:

❏ Sales enquiries and product information

❏ Product usage questions or problem

❏ Enquiries on repair service and warranty

For users in Thailand

Contact for information, support, and services are:

World Wide Web (http://www.epson.co.th)

Information on product specifications, drivers for download, Frequently Asked Questions (FAQ), and e-mail are available.

Epson Hotline (Phone: (66)2-670-0333)

Our Hotline team can help you with the following over the phone:

❏ Sales enquiries and product information

❏ Product usage questions or problem

❏ Enquiries on repair service and warranty

For users in Indonesia

Contacts for information, support, and services are:

World Wide Web (http://www.epson.co.id)

❏ Information on product specifications, drivers for download

❏ Frequently Asked Questions (FAQ), Sales Enquiries, questions through e-mail

Epson Hotline

❏ Sales enquiries and product information

❏ Technical support

Phone   (62) 21-572 4350

Fax   (62) 21-572 4357

Epson Service Center

Jakarta   Mangga Dua Mall 3rd floor No 3A/B
                     Jl. Arteri Mangga Dua,
                     Jakarta
                     Phone/Fax: (62) 21-62301104

Bandung	Lippo Center 8th floor
	Jl. Gatot Subroto No.2
	Bandung
	Phone/Fax: (62) 22-7303766
Surabaya	Hitech Mall Lt. IIB No.12
	JI. Kusuma Bangsa 116-118
	Surabaya
	Phone/Fax: (62) 31-5355035/31-5477837
Yogyakarta	Hotel Natour Garuda
	Jl. Malioboro No. 60
	Yogyakarta
	Phone: (62) 274-565478
Medan	Wisma HSBC 4th floor
	Jl. Diponegoro No. 11
	Medan
	Phone/Fax: (62) 61-4516173
Makassar	MTC Karebosi Lt. Ill Kav. P7-8
	JI. Ahmad Yani No.49
	Makassar
	Phone: (62)411-350147/411-350148

For users in Hong Kong

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 product drivers

Users can access our World Wide Web home page at:

http://www.epson.com.hk

Technical Support Hotline

You can also contact our technical staff at the following telephone and fax numbers:

Phone: (852) 2827-8911

Fax: (852) 2827-4383

For users in Malaysia

Contacts for information, support, and services are:

World Wide Web (http://www.epson.com.my)

❏ Information on product specifications, drivers for download

❏ Frequently Asked Questions (FAQ), Sales Enquiries, questions through e-mail

Epson Trading (M) Sdn. Bhd.

Head Office.

Phone: 603-56288288

Fax: 603-56288388/399

Epson Helpdesk

❏ Sales enquiries and product information (Infoline)

　Phone:　　　603-56288222

❏ Enquiries on repair services & warranty, product usage and technical support (Techline)

　Phone:　　　603-56288333

For users in India

Contacts for information, support, and services are:

World Wide Web (http://www.epson.co.in)

Information on product specifications, drivers for download, and products enquiry are available.

Epson India Head Office - Bangalore:

Phone: 5321266 (14 Lines)

Fax: 5581439/5321095

Epson India Regional Offices:

Mumbai	Phone: 28261516-17 Fax: 28257287
Delhi	Phone: 26447201/02/03/04/07/09 Fax: 26447205
Chennai	Phone: 28203940/41 -- 8218658/59 Fax: 28272463
Kolkata	Phone: 22831589/90 Fax: 22831591
Hyderabad	Phone: 55331738/39 Fax: 55328633
Cochin	Phone: 2357638/2356652 Fax: 2357950
Pune	Phone: 4335460/90 Ext 214 Fax: 4330881
Ahmedabad	Phone: 6407176/77 Fax: 6407347

Toll Free Telephone Support

To learn more about Epson products or to avail service support, please call 1600 440011. This is a toll-free number and can be accessed (9 A.M to 9 P.M) anywhere in the country.

For users in the Philippines

To obtain technical support as well as other after sales services, users are welcome to contact the Epson Philippines Corporation at the telephone and fax numbers and e-mail address below:

Phone: (63) 2-813-6567

Fax: (63) 2-813-6545

E-mail: customersupport@epc.epson.com.ph

World Wide Web (http://www.epson.com.ph)

Information on product specifications, drivers for download, Frequently Asked Questions (FAQ), and E-mail Enquiries are available.

Epson Helpdesk (Phone: (63) 2-813-6567)

Our Hotline team can help you with the following over the phone:

❏ Sales enquiries and product information

❏ Product usage questions or problems

❏ Enquiries on repair service and warranty

Chapter 7

Options and Consumables

Ribbon Cartridge

Genuine Epson ribbon cartridge

When printing becomes faint, you need to replace the ribbon cartridge (S015339). Genuine Epson ribbon cartridges are designed and manufactured to work properly with your Epson printer. They ensure proper operation and long life of the print head and other printer parts.
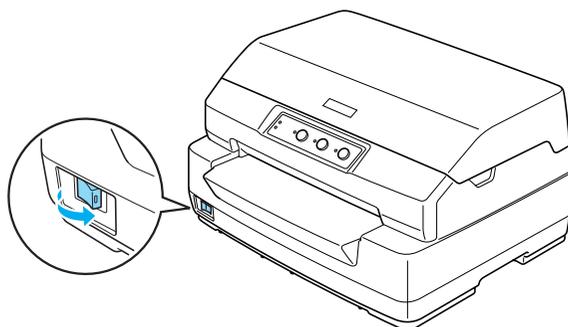
Replacing the ribbon cartridge

Follow these steps to replace the ribbon cartridge:

> ⚠️ *Warning:*
> *You need to move the print head by hand to replace the ribbon cartridge. If you have just used the printer, the print head may be hot; let it cool for a few minutes before touching it.*
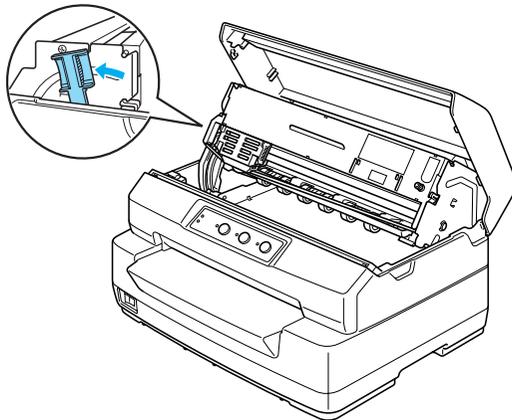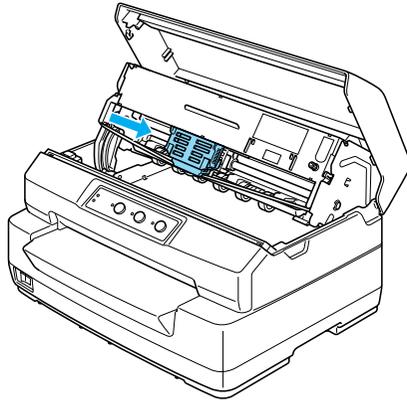
1. Make sure the printer is turned off.

2. Unplug the printer from the electric outlet.

3. Hold both sides of the printer cover and move it upward to open it.
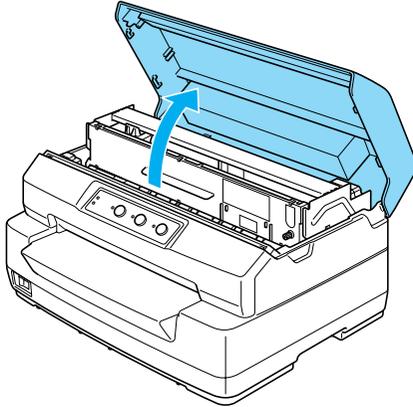
4. Push the release lever to move the upper mechanism forward. Make sure that you push the lever until it clicks.
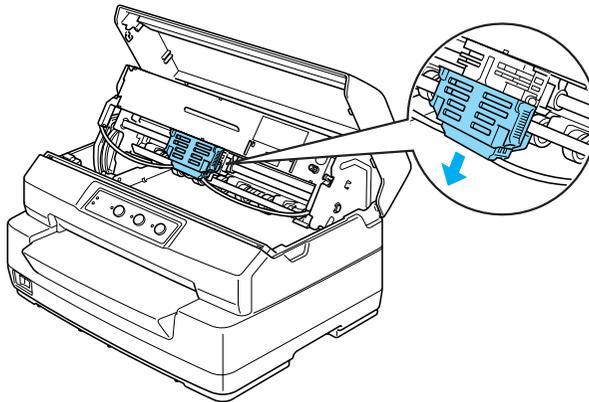
5. Slide the print head to the middle of the printer by hand.

> **Caution:**
> *Never move the print head while the printer is turned on; this can damage the printer.*

6. Hold both sides of the ribbon guide and pull it down until it is out of the print head.

7. Hold both sides of the ribbon cartridge with both hands and rotate it on the plastic hooks. Then pull it up until it is out of the printer.
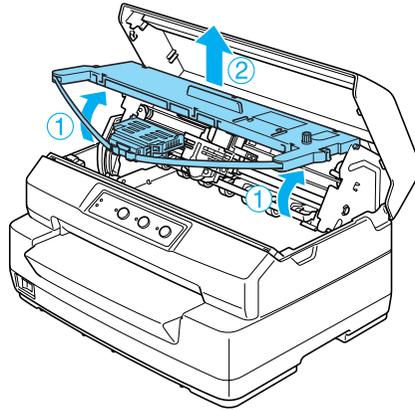
8. Remove the new ribbon cartridge from the package.

9. Place the plastic hooks on the ribbon cartridge into the slots of the printer. Then press the cartridge until it clicks into place.
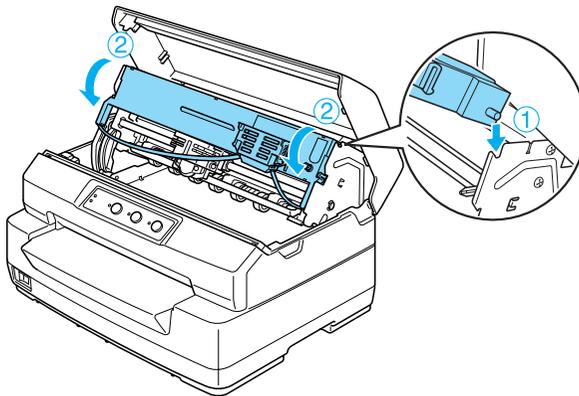
10. Hold both sides of the ribbon guide and pull it down until it is out of the cartridge.
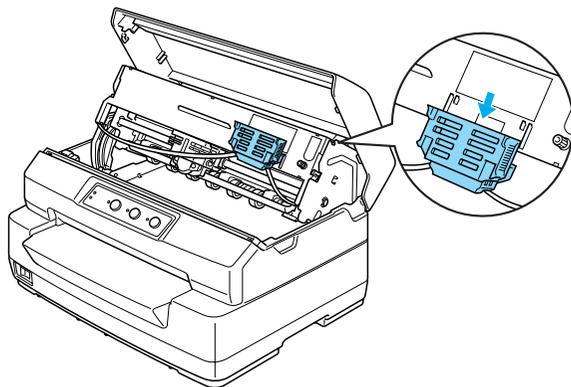
11. Put the ribbon guide at the bottom of the print head and push it up until it clicks.
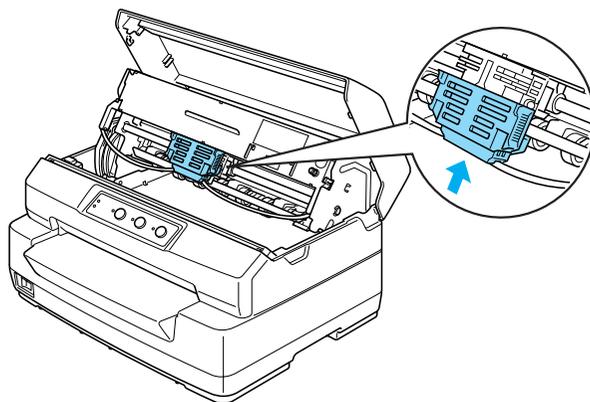
12. Turn the ribbon-tightening knob to help feed the ribbon into place.
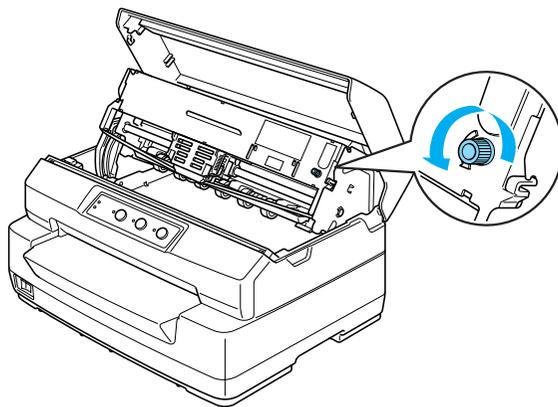
> **Caution:**
> *The ribbon should not be twisted or creased.*

13. Pull the release lever back to move the upper mechanism to its original position. Make sure that you pull the lever until it clicks.
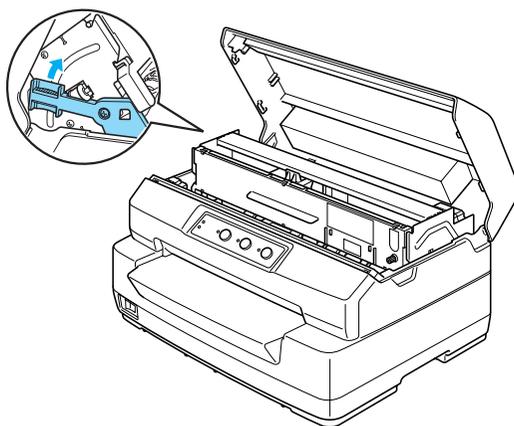
14. Close the printer cover.

Roll Paper Holder

The optional roll paper holder (C811141) allows you to use 8.5-inch roll paper like that used with telex machines. This provides an alternative for applications requiring variable paper lengths. Before you install and use the roll paper holder, you need to assemble it.

Assembling the roll paper holder

Follow these steps to assemble the roll paper holder:

1. Fit the arc bearings into the stand as shown.
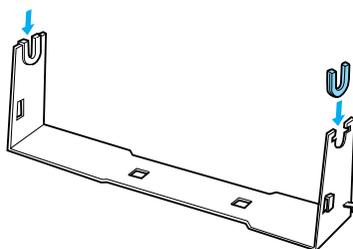
2. Place the base plate on the stand and fasten the two together with the plastic spacing clips. Make sure you orient the stand and base plate as shown below.
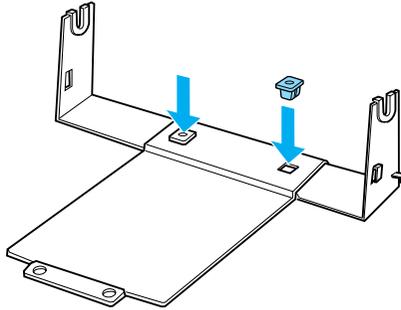
3. Hook the tension lever onto both ends of the stand as shown below. While pulling up on the tension lever, fit the wire ends of the tension lever into the holes in the stand. The roll paper holder is assembled.
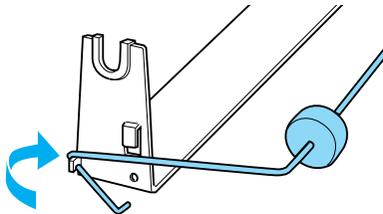
Installing the roll paper holder

Follow these steps to install the roll paper holder on your printer:

1. Make sure the printer is turned off.

2. Position the roll paper holder underneath the printer as shown below. Fit the two positioning pegs on the bottom of the printer into the two holes in the base plate.
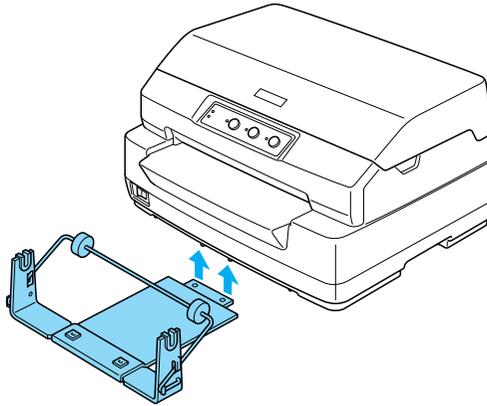
> **Caution:**
> *The roll paper holder is not fastened to the printer; only the printer's weight and the two positioning pegs hold it in place. If you pick up the printer, be careful not to drop the roll paper holder.*

Loading roll paper

Follow these steps to load a roll of paper after you install the roll paper holder:

1. Make sure the printer is turned off.

2. Cut the leading edge of the roll paper straight across.
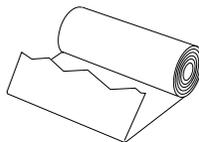
3. Insert the roll paper holder shaft into the center of the paper roll as shown.
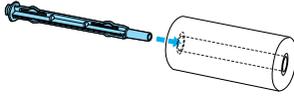
4. Place the shaft and paper roll on the roll paper holder so the paper feeds from the bottom of the roll. Then turn on the printer.
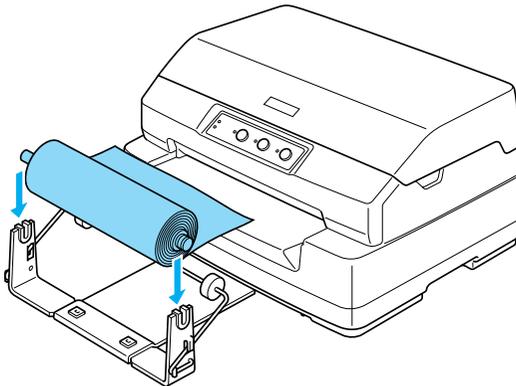
5. Bring the leading edge of the paper up over the front of the printer and insert it into the front slot until it meets resistance. The printer loads the roll paper automatically.
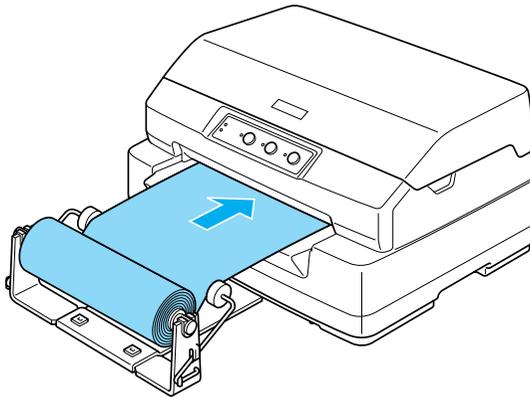
You are now ready to print. When you finish printing, advance the paper by holding the F2 button for a few seconds (in PR2 mode), or pressing the F1/Eject button (in ESC/P or IBM PPDS mode). Then cut the roll paper where it comes out from the printer.
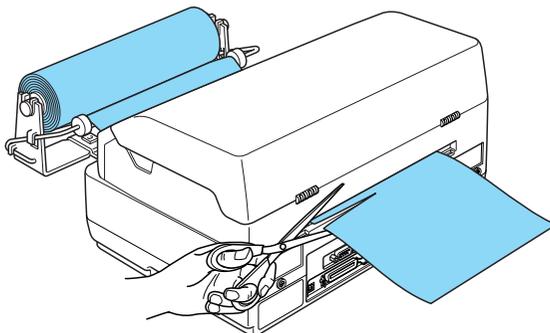
Removing roll paper

Roll paper cannot be fed backward. To remove roll paper, cut the roll paper behind where it feeds into the printer. Then eject the remaining paper by holding the F2 button for a few seconds (in PR2 mode), or pressing the F1/Eject button (in ESC/P or IBM PPDS mode).
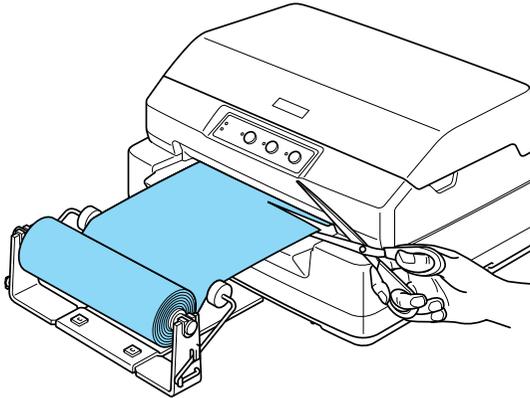
Print Server

You can use this printer as a network printer by installing a print server in the printer's USB interface port. See the Administrator's Manual packaged with this option for instructions on installation and use.

The following Printer Servers can be used:

❏ EpsonNet 802. 11b Wireless Ext.Print Server
 (C82396✽/C82397✽/C82398✽)

❏ EpsonNet 10/100 Base TX USB Print Server (C82402✽)

Note:
The asterisk (✽) is a substitute for the last digit, which varies by country.

Others

For details of other optional products, contact your dealer.

Appendix A
Product Information

Printer and Ribbon Cartridge Parts

Printer parts

printer cover

power switch

control panel

front slot

rear outlet

AC inlet

USB interface

Parallel interface

Serial interface

upper mechanism

print head

release lever

Ribbon cartridge parts

ribbon-tightening knob

ribbon

ribbon guide

plastic hook

Printer Specifications

Mechanical

Printing method: 24-pin impact dot matrix

Printing speed: PR2:

High speed draft	480 cps at 10 cpi
Draft	360 cps at 10 cpi
NLQ	180 cps at 10 cpi
LQ	120 cps at 10 cpi

ESC/P:

High speed draft	480 cps at 10 cpi
Draft	360 cps at 10 cpi
LQ	120 cps at 10 cpi

Printing direction: Bidirectional logic seeking for text and graphics printing. Unidirectional text or graphics printing can be selected using software commands.

Line spacing: 4.23 mm (1/6 inch)
PR2:
Programmable in increments of 0.106 mm (1/240 inch) or 0.118 mm (1/216 inch)
Other emulation:
Programmable in increments of 0.0706 mm (1/360 inch)

Printable columns: 94 columns (at 10 cpi)

Resolution: Maximum 360×180 dpi (letter quality)

Paper feed methods: Friction (front)
Roll paper holder (optional)

Paper feed speed:	Continuous	330 mm/second 13 inches/second
	Intermittent	35 msec/line at 1/6 inch line spacing
Reliability:	Total print volume	7 million lines (except print head)
		MTBF 10,000 POH
	Print head life	400 million strokes/wire
Dimensions and weight:	Height	203 mm (8.0 inches)
	Width	384 mm (15.1 inches)
	Depth	280 mm (11.0 inches)
		293 mm (11.5 inches) (including front slot projection)
	Weight	approx. 7.7kg (17.0 lb) (PLQ-20)
		approx. 8.7kg (19.2 lb) (PLQ-20M)
Ribbon:	Black ribbon cartridge	S015339
	Ribbon life	approx. 5 million characters (LQ, 10 cpi, 48 dots/character)
		approx. 10 million characters (Draft, 10 cpi, 24 dots/character)
Acoustic noise:	Approx. 53 dB (A) (ISO 7779 pattern) (PLQ-20)	
	Approx. 55 dB (A) (ISO 7779 pattern) (PLQ-20M)	

Electronic

Interfaces:	Three built-in interface slots; Bidirectional, 8-bit, parallel interface with IEEE 1284 nibble mode support, USB (ver 1.1) interface, EIA-232D Serial interface
Buffer:	64KB
Fonts:	PR2 emulation
	Bitmap fonts

High speed draft (=EPSON Super Draft)	10, 12 cpi
Draft (=EPSON Draft)	10, 12 cpi
NLQ1 (=EPSON Sans Serif)	10, 12, 15 cpi
NLQ2 (=EPSON Roman)	10, 12, 15 cpi
LQ2 (=EPSON Roman)	10, 12, 15 cpi
OCR-B (=EPSON OCR-B)	10 cpi
OCR-A (=EPSON OCR-A)	10 cpi

Scalable fonts

Not supported

Bar code fonts

EAN-13, EAN-8, Interleaved 2 of 5, UPC-A, UPC-E, Code 39, Coda bar (NW-7), Industrial 2 of 5

ESC/P and IBM PPDS emulations

Bitmap fonts

EPSON Super Draft	10, 12 cpi, proportional
EPSON Draft	10, 12, 15 cpi, proportional
EPSON Roman	10, 12, 15 cpi, proportional
EPSON Sans Serif	10, 12, 15 cpi, proportional
EPSON Courier	10, 12, 15 cpi
EPSON Prestige	10, 12 cpi
EPSON Script	10 cpi
EPSON OCR-B	10 cpi
EPSON Orator	10 cpi
EPSON Orator-S	10 cpi
EPSON Script C	proportional

Scalable fonts

EPSON Roman	10.5 pt. 8-32 pt. (every 2 pt.)
EPSON Sans Serif	10.5 pt. 8-32 pt. (every 2 pt.)
EPSON Roman T	10.5 pt. 8-32 pt. (every 2 pt.)
EPSON Sans Serif H	10.5 pt. 8-32 pt. (every 2 pt.)

Bar code fonts

EAN-13, EAN-8, Interleaved 2 of 5, UPC-A, UPC-E, Code 39, Code 128, POSTNET

Character tables: PR2 emulation

(Olivetti)

22 graphics character tables:

International, Germany, Portugal,
Spain 1, Denmark/Norway, France, Italy,
Sweden/Finland, Switzerland, Great
Britain, USA ASCII, Greece, Israel, Spain 2,
USSR, Yugoslavia,
Olivetti TCV 370, Canada, SDC, Turkey,
Arabic, CIBC

(ISO)

9 graphics character tables:

ISO 8859-1 Latin 1, ISO 8859-9 Latin 5
ISO 8859-2 Latin 2, ISO 8859-5 Cyrillic, ISO
8859-15, ISO 8859-6 Latin Arabic,
ISO 8859-7 Greek, ISO 8859-8 Hebrew,
OLI-UNIX

(PC)

19 graphics character tables:

PC-437 International, PC-220 Spain 2,
PC-865 Nordic, PC-Denmark/Norway,
PC-Denmark OPE, PC-860 Portugal, PC-863
Canadian French,
PC-850 Latin 1, PC-858 Latin Euro, PC-875
Turkish Latin 5, PC-852 Latin 2, PC-851
Greek, PC-210 Greek,
PC-855 Cyrillic, PC-862 Israel,
PC-864 Arabic, PC-866 Cyrillic,
PC-1252 PC-WIN Latin 1
PC-1250 PC-WIN Latin 2

ESC/P and IBM PPDS emulations

Standard

One italic and 12 graphics character tables:

Italic table,
PC 437 (US, Standard Europe),
PC 850 (Multilingual),
PC 860 (Portuguese),
PC 861 (Icelandic), PC 865 (Nordic),
PC 863 (Canadian-French), BRASCII,
Abicomp, ISO Latin 1, Roman 8, PC 858,
ISO 8859-15

Expanded

One italic and 39 graphics character tables:

Italic table,
PC 437 (US, Standard Europe),
PC 850 (Multilingual),
PC 860 (Portuguese),
PC 861 (Icelandic), PC 865 (Nordic),
PC 863 (Canadian-French), BRASCII,
Abicomp, ISO Latin 1, Roman 8, PC 858,
ISO 8859-15, PC 437 Greek,
PC 852 (Eastern Europe),
PC 853 (Turkish), PC 855 (Cyrillic),
PC 857 (Turkish), PC 866 (Russian),
PC 869 (Greek), MAZOWIA (Poland),
Code MJK (CSFR),
ISO 8859-7 (Latin/Greek),
ISO Latin 1T (Turkish),
Bulgaria (Bulgarian),
PC 774 (LST 1283: 1993),
Estonia (Estonian), PC 771 (Lithuanian),
ISO 8859-2, PC 866 LAT. (Latvian),
PC 866 UKR (Ukranian),
PC437 Slovenia, PC MC, PC1250,
PC1251, PC 864 (Arabic),
PC APTEC (Arabic), PC 708 (Arabic),
PC 720 (Arabic), PC AR 864 (Arabic)

Character sets: 14 international character sets and one legal character set:

USA, France, Germany, UK, Denmark I, Sweden, Italy, Spain I, Japan, Norway, Denmark II, Spain II, Latin America, Korea, Legal

Electrical

	120 V Model	220 to 240 V Model
Rated voltage range	120 V	220 to 240 V
Input voltage range	90 to 132 V	198 to 264 V
Rated frequency range	50 to 60 Hz	50 to 60 Hz
Input frequency range	49.5 to 60.5 Hz	49.5 to 60.5 Hz
Rated current	1.4 A (maximum 3.9 A depending on the character type)	0.7 A (maximum 1.9 A depending on the character type)
Power consumption	Approx. 59 W (ISO/IEC 10561 letter pattern)	Approx. 60 W (ISO/IEC 10561 letter pattern)

This product is also designed for IT power systems with a phase-to-phase voltage of 220 to 240 V.

Note:
Check the label on the back of the printer for the voltage of your printer.

Environmental

	Temperature	Humidity (without condensation)
Operation (passbook, plain paper, recycled paper, and multipart forms)	5 to 35°C (41 to 95°F)	10 to 80% RH
Operation (roll paper)	15 to 25°C (59 to 77°F)	30 to 60% RH
Storage	-30 to 60°C (-22 to 140°F)	0 to 85% RH

Paper

For information about available paper types and their printable area, refer to the *Paper Specification*, which is included on the User CD-ROM.

Magnetic stripe reader/writer (horizontally installed only)

The horizontal magnetic stripe reader/writer is used to read and write data on the magnetic stripe on bank passbooks. See the following specifications of this device for details.

Recording code   BCD Binary Coded decimal, 4 data bits, 1 VRC parity control bit

Recordable characters   column 3 of the ASCII table

Recordable formats   IBM3604, DIN/ISO, ISO7811, IBM4746, ANSI, HT-2751-CIZ, ISO8484

Recorded track width	7 mm
Read track width	2 mm
Speed of medium	340 mm/second
Displacement	Standard, Standard + 10 mm, Standard + 20 mm
Number of retries	1 or 3
Field duplication	YES or NO

Recordable area

Back Cover
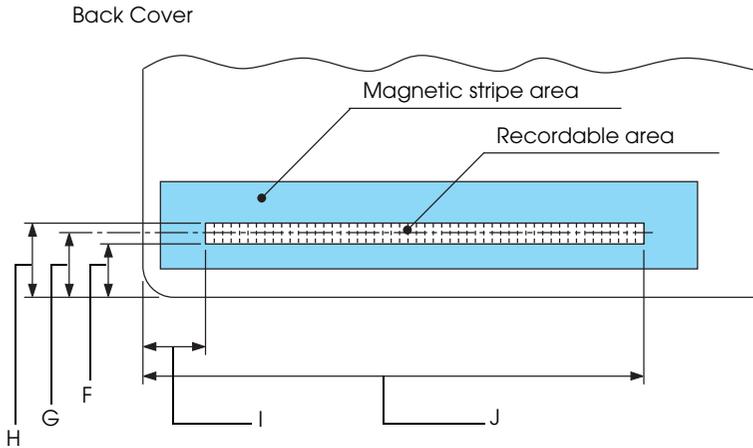
	F (max)	G	H (min)	I	J (max)
DIN/ISO, ANSI	12.5	13.9	15.5	9.5	85
IBM3604	8.9	10.4	11.9	10.4	81.3
ISO7811	8.9	10.4	11.9	14.8	—
IBM4746	8.9	10.4	11.9	9.8	—

	F (max)	G	H (min)	I	J (max)
ISO8484	12.5	13.9	15.3	9.5	85
HT-2751-CIZ	7.4	8.8	10.2	12.6	—

Recordable formats specification

DIN/ISO and ISO8484

Bit density	210 bpi ± 5%
Recording direction	Left to Right
Preamble	20 bits
SOM (Start sentinel)	D
Recordable characters	0-9, A, B, C, D, E
EOM (End sentinel)	F
LRC Parity	even
Postamble	20 bits
Maximum number of recordable characters (1 block)	105 characters
Maximum number of recordable characters (2 block)	45 characters
Number of separator	60 bits
Center of vertical position	13.9 mm
Horizontal start position	9.5 mm from the left edge

IBM3604

Bit density	210 bpi ± 5%
Recording direction	Left to Right
Preamble	20 bits
SOM (Start sentinel)	B
Recordable characters	0-9, A, B, D, E
EOM (End sentinel)	F or C
LRC Parity	even
Postamble	20 bits
Maximum number of recordable characters (1 block)	105 characters
Maximum number of recordable characters (2 block)	45 characters
Number of separator	120 bits
Center of vertical position	10.4 mm
Horizontal start position	10.4 mm from the left edge

ANSI

Bit density	210 bpi ± 5%
Recording direction	Left to Right
Preamble	20 bits
SOM (Start sentinel)	B
Recordable characters	0-9, A, B, C, D, E
EOM (End sentinel)	F
LRC Parity	even

Postamble	20 bits
Maximum number of recordable characters (1 block)	105 characters
Maximum number of recordable characters (2 block)	45 characters
Number of separator	60 bits
Center of vertical position	13.9 mm
Horizontal start position	9.5 mm from the left edge

ISO7811

Bit density	75 bpi ± 5%
Recording direction	Left to Right
Preamble	20 bits
SOM (Start sentinel)	B
Recordable characters	0-9, A, D, E
EOM (End sentinel)	F
LRC Parity	even
Postamble	20 bits
Maximum number of recordable characters (1 block)	37 characters
Maximum number of recordable characters (2 block)	23 characters
Number of separator	120 bits
Center of vertical position	10.4 mm
Horizontal start position	14.8 mm from the left edge

IBM4746

Bit density	210 bpi ± 5%
Recording direction	Left to Right
Preamble	20 bits
SOM (Start sentinel)	BA
Recordable characters	0-9, D
EOM (End sentinel)	F or C
LRC Parity	even
Postamble	20 bits
Maximum number of recordable characters (1 block)	105 characters
Maximum number of recordable characters (2 block)	45 characters
Number of separator	120 bits
Center of vertical position	10.4 mm
Horizontal start position	9.8 mm from the left edge

HT-2751-ClZ

Bit density	105 bpi ± 5%
Recording direction	Right to Left
Preamble	55 bits
SOM (Start sentinel)	F
Recordable characters	0-9
EOM (End sentinel)	F
LRC Parity	odd

Postamble	40 bits
Maximum number of recordable characters (1 block)	60 characters
Maximum number of recordable characters (2 block)	27 characters
Number of separator	10 bits
Center of vertical position	8.8 mm
Horizontal start position	12.6 mm from the left edge

Character conversion table

DIN/ISO, ISO8484 and IBM3604

			Function		Recording codes				
Crt	ASCII	Line code	DIN/ISO, ISO8484	IBM3604	V R C	B I T 4	B I T 3	B I T 2	B I T 1
0	0	30H	crt	crt	1	0	0	0	0
1	1	31H	crt	crt	0	0	0	0	1
2	2	32H	crt	crt	0	0	0	1	0
3	3	33H	crt	crt	1	0	0	1	1
4	4	34H	crt	crt	0	0	1	0	0
5	5	35H	crt	crt	1	0	1	0	1
6	6	36H	crt	crt	1	0	1	1	0
7	7	37H	crt	crt	0	0	1	1	1
8	8	38H	crt	crt	0	1	0	0	0
9	9	39H	crt	crt	1	1	0	0	1
A	:	3AH	crt	crt	1	1	0	1	0
B	;	3BH	crt	SOM crt	0	1	0	1	1
C	<	3CH	crt	EOM —	1	1	1	0	0
D	=	3DH	SOM crt	crt	0	1	1	0	1
E	>	3EH	crt	crt	0	1	1	1	0
F	?	3FH	EOM	EOM	1	1	1	1	1

* crt means character.

ANSI and ISO7811

Crt	ASCII	Line code	Function		Recording codes				
			ANSI	ISO7811	VRC	BIT 4	BIT 3	BIT 2	BIT 1
0	0	30H	crt	crt	1	0	0	0	0
1	1	31H	crt	crt	0	0	0	0	1
2	2	32H	crt	crt	0	0	0	1	0
3	3	33H	crt	crt	1	0	0	1	1
4	4	34H	crt	crt	0	0	1	0	0
5	5	35H	crt	crt	1	0	1	0	1
6	6	36H	crt	crt	1	0	1	1	0
7	7	37H	crt	crt	0	0	1	1	1
8	8	38H	crt	crt	0	1	0	0	0
9	9	39H	crt	crt	1	1	0	0	1
A	:	3AH	crt	crt	1	1	0	1	0
B	;	3BH	SOM crt	SOM —	0	1	0	1	1
C	<	3CH	crt	—	1	1	1	0	0
D	=	3DH	crt	crt	0	1	1	0	1
E	>	3EH	crt	crt	0	1	1	1	0
F	?	3FH	EOM	EOM	1	1	1	1	1

* crt means character.

IBM4746 and HT-2751-CIZ

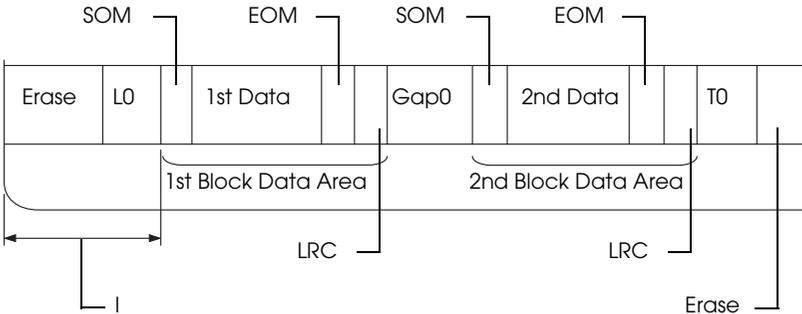| Crt	ASCII	Line code	Function		Recording codes				
			IBM4746	HT-2751-CIZ	VRC	BIT 4	BIT 3	BIT 2	BIT 1
0	0	30H	crt	crt	1	0	0	0	0
1	1	31H	crt	crt	0	0	0	0	1
2	2	32H	crt	crt	0	0	0	1	0
3	3	33H	crt	crt	1	0	0	1	1
4	4	34H	crt	crt	0	0	1	0	0
5	5	35H	crt	crt	1	0	1	0	1
6	6	36H	crt	crt	1	0	1	1	0
7	7	37H	crt	crt	0	0	1	1	1
8	8	38H	crt	crt	0	1	0	0	0
9	9	39H	crt	crt	1	1	0	0	1
A	:	3AH	SOM —	—	1	1	0	1	0
B	;	3BH	SOM —	—	0	1	0	1	1
C	<	3CH	EOM —	—	1	1	1	0	0
D	=	3DH	crt	—	0	1	1	0	1
E	>	3EH	—	—	0	1	1	1	0
F	?	3FH	EOM	SOM EOM	1	1	1	1	1

* crt means character.

Recording layout of magnetic stripe

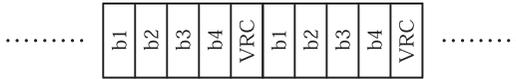*DIN/ISO, IBM3604, ANSI, ISO7811, IBM4746, and ISO8484*

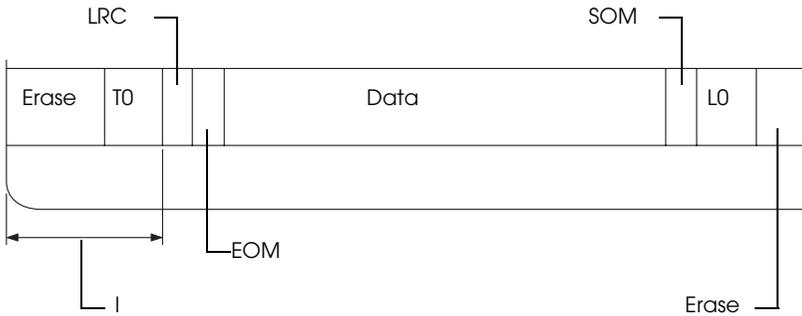### 1 block format
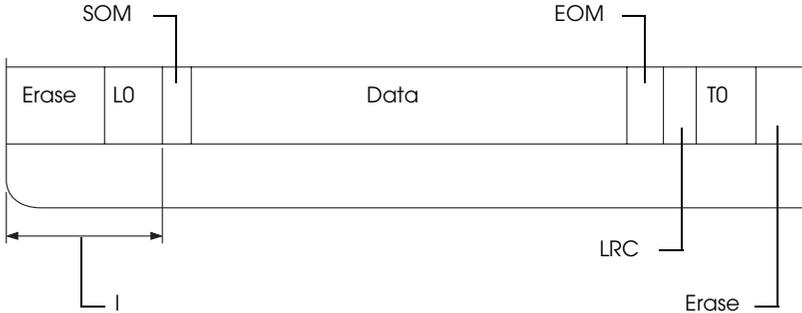
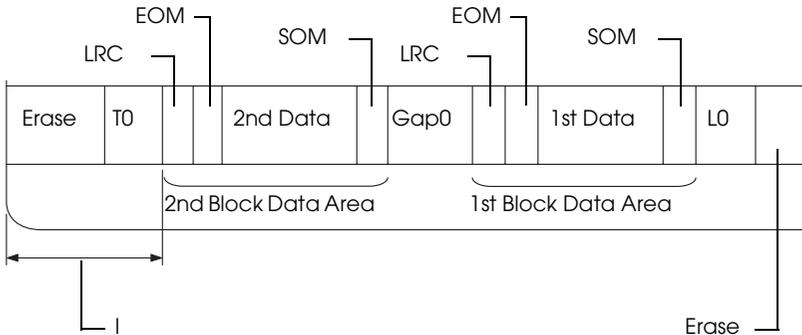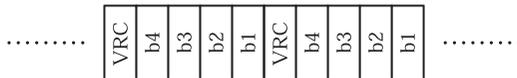### 2 block format

Direction of bit pattern

········· | b1 | b2 | b3 | b4 | VRC | b1 | b2 | b3 | b4 | VRC | ·········

HT-2751-CIZ

1 block format

2 block format

Erase	T0			2nd Data		Gap0			1st Data		L0

LRC — EOM — SOM — LRC — EOM — SOM —

2nd Block Data Area   1st Block Data Area

I

Erase —

Direction of bit pattern

.... | VRC | b4 | b3 | b2 | b1 | VRC | b4 | b3 | b2 | b1 | ....

Command Lists

For information about the commands, refer to the *Programming Guide*, which is included on the User CD-ROM.

Standards and Approvals

U. S. model:

Safety	UL60950
	CSA C22.2 No. 60950
EMC	FCC part 15 subpart B class B
	CSA C108.8 class B

European model:

Low Voltage Directive 73/23/EEC	EN 60950
EMC Directive 89/336/EEC	EN 55022 Class B
	EN 55024
	EN 61000-3-2
	EN 61000-3-3

Australian model:

EMC	AS/NZS CISPR 22 class B

Cleaning the Printer

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

Follow these steps to clean the printer:

1. Remove any paper loaded in the printer, and turn off the printer.

2. If the optional roll paper holder and rear paper guide are installed, remove them.

3. Use a soft brush to carefully brush away all dust and dirt from the outer case and paper guide.

4. If the outer case and the paper guide are still dirty or dusty, clean them with a soft, clean cloth dampened with mild detergent dissolved in water. Keep the printer cover closed to prevent water from getting inside the printer and be careful not to get water in the front slot.

    > *Caution:*
    > ❏ *Never use alcohol or thinners to clean the printer; these chemicals can damage the printer components as well as the case.*
    >
    > ❏ *Be careful not to get water on the printer mechanism or electronic components.*
    >
    > ❏ *Do not use a hard or abrasive brush.*

Do not spray the inside of the printer with lubricants; unsuitable oils can damage the printer mechanism. Contact your Epson dealer if you think lubrication is needed.

Transporting the Printer

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

Follow these steps to repack the printer in its original packing materials:

⚠️ *Warning:*
You need to move the print head by hand to remove the ribbon cartridge. If you have just used the printer, the print head may be hot; let it cool for a few minutes before touching it.

1. Remove any paper loaded in the printer. Make sure the printer is turned off.

2. Unplug the power cord from the electrical outlet; then disconnect the interface cable from the printer.

3. If any options are installed, remove them and pack them in their original boxes.

4. Make sure the print head is not hot. Then remove the ribbon cartridge as described in "Replacing the ribbon cartridge" on page 132. Then move the print head to the left side.

5. Make sure that the printer cover is closed.

6. Repack the printer, ribbon cartridge, and power cord (if necessary) in their original packing materials and place them in the printer's original box.

Glossary

auto line feed
When this option is turned on in the default-setting mode, each carriage return (CR) code is automatically followed by a line feed (LF) code.

bidirectional printing
Printing in which the print head prints in both directions (bidirectionally) from left to right and then right to left. This increases the print speed but may reduce precise vertical alignment. See also *unidirectional printing*.

character table
A collection of letters, numbers, and symbols that provides you with the set of characters used in a particular language.

characters per inch (cpi)
The number of characters that can fit in one inch of a text line, determined by the size of the characters. See also *pitch*.

compress printing
This function reduces the size of the data. You can compress your printing data to the ratio of 75%.

control codes
Special codes used to control printer functions, such as a carriage return or line feed, instead of printing characters.

cpi
See *characters per inch (cpi)*.

default
Value settings that take effect when a device (such as a printer) is turned on, reset, or initialized.

dithering
A half toning method in which dots are printed in a predetermined pattern to simulate a shade or tone. Dithering works best for images with solid colors, such as charts and graphs. See also *half toning*.

dot matrix
A method of printing in which each letter or symbol is formed by a pattern (matrix) of individual dots.

draft
The print mode used by your printer when you select Draft as the font. The Draft font uses fewer dots per character for faster printing. See also *letter quality (LQ)*.

driver
See *printer driver*.

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

font
A style of type designated by a name such as Roman or Sans Serif.

form feed (FF)
A control panel button and control code that advances the paper to the next top-of-form position.

half toning
A method of using dot patterns to represent an image. Halftoning makes it possible to produce varying shades of gray using only black dots, or a nearly infinite array of colors using only a few colors of dots. See also *dithering*.

hex dump
A troubleshooting method that helps identify the cause of communication problems between the printer and the computer. When the printer is in hex dump mode, it prints each code that it receives in hexadecimal notation as well as in ASCII codes that stand for characters. Also called data dump.

interface
The connection between the computer and the printer through which print data is transmitted to the printer.

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. See also *portrait*.

letter quality (LQ)
The print mode used by your printer to produce letter-quality fonts for better readability and appearance. Print speed is slower. See also *draft*.

line feed (LF)
A control code that advances the paper one line space.

magnetic stripe

A stripe of tape that is coated with magnetic material on which data is stored. PLQ-20M is equipped with a device to read and write data on magnetic stripes.

pitch

The horizontal size of the font, which is measured by the number of characters per inch (cpi). The standard is 10 cpi. See also *characters per inch (cpi)*.

portrait

Printing that is oriented upright on the page (as opposed to landscape, in which printing is sideways on the page). This is the standard orientation for printing letters or documents. See also *landscape*.

printer driver

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

printing start position

The horizontal position on the paper that the printer recognizes as the first printable column. You can adjust the printing start position with the control panel.

resolution

A measure of the amount of detail that can be represented. Resolution of printed images is measured by using the number of dots per inch (dpi).

self-test

A method for checking the operation of the printer. When you run the self-test, an internally stored self-pattern is printed.

top-of-form position

The horizontal position on the paper that the printer recognizes as the first printable line. You can adjust the top-of-form position with the control panel.

unidirectional printing

Printing in which the print head prints in one direction only. Unidirectional printing is useful for printing graphics because it provides precise vertical alignment. You can select unidirectional printing using the printer's default-setting mode. See also *bidirectional printing*.

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