EPSON®

Expression® 1600

# Color Graphics Scanner

# User's Guide

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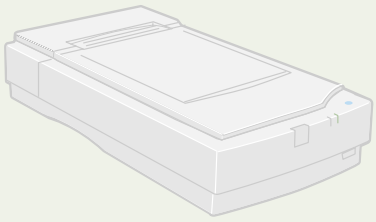
# Chapter 1 Welcome



The EPSON® Expression® 1600 is a 36-bit professional graphics scanner designed to meet the needs of artists, graphics professionals, and business graphics users. It's ideally suited for small LAN (Local Area Network) users who want to share a scanner within their workgroup. Using EPSON's ColorTrue® II Imaging System, it reproduces images with amazingly accurate detail and color. Your scanner can achieve up to 1600 × 3200 dpi hardware resolution with EPSON's proprietary Micro Step Drive™ technology, and is one of the fastest scanners in its class.

## About Your Scanner

Your EPSON Expression 1600 scanner comes with these features:

- Superior image quality with true optical resolution of 1600 dpi
- 36-bit color depth for capturing images with over 68 billion colors and 4,096 shades of gray
- Start button for easy, automated scanning
- Unique Dual Focus mechanism lets you choose the focus position
- Can be shared by several users in a small workgroup
- USB, SCSI 2, and IEEE 1394-compatible FireWire® (USB and SCSI 2 interfaces are standard)
- Optional transparency unit, automatic document feeder, and IEEE 1394 FireWire scanner interface card

# About Your Software

The EPSON Expression 1600 scanner includes these leading-edge applications for professional-quality scans:

*EPSON TWAIN Pro*
Exclusive professional-quality scanner driver with powerful features for controlling every aspect of your scan. Includes Auto Area Segmentation (AAS) to separate text from background colors, and Text Enhancement Technology (TET) for more accurate OCR scanning.

*EPSON Scan Server (PC only)*
Enables you to share the Expression 1600 with other users in a small workgroup.

*EPSON TWAIN Pro Network*
This network version of EPSON TWAIN Pro lets client computers use the Expression 1600 when it's attached to another computer. (EPSON Scan Server must be installed on the computer sharing the scanner.)

*Adobe® Photoshop® 5.0 LE*
Edit your photos with this version of the ultimate imaging application. Add special effects, overlay titles and captions, restore old photos, and add many other creative enhancements to your photographs. (Not included with the Special Edition model.)

*Xerox® TextBridge® Classic*
Use the premiere OCR (Optical Character Recognition) software to turn your paper documents into electronic text without retyping. (Not included with the Special Edition model.)

*NewSoft™ Presto!™ PageManager for EPSON*
After you've scanned your paper documents, use this leading document management software to organize, file, edit, copy, fax, and e-mail them from one convenient screen. (Not included with the Special Edition model.)

*MonacoEZcolor™ 1.5*
Simplify the process of color management by creating customized color profiles for your scanner, monitor, and printer with this easy-to-use ICC profiling tool. (Not included with the Special Edition model.)

## Getting More Information

There are several ways to learn more about your EPSON Expression 1600. In addition to the printed materials, help utilities and electronic manuals are available on your computer and CD-ROMs. Here's where to look for help:

- Checklists
  Read the checklist for your scanner model to make sure you have everything. If anything is missing, call EPSON at (562) 276-4382 (United States) or (905) 709-3839 (Canada).
- EPSON Expression 1600 Software Reference Guide
  Provides detailed information about EPSON TWAIN Pro, including troubleshooting tips. You must have a web browser (Netscape® Navigator® or Microsoft® Internet Explorer,® versions 3.0 or later) on your computer to read this guide. See page 13 for instructions on viewing your *Reference Guide*.
- On-Screen Help
  Most of the applications that come with your scanner include on-screen help. For EPSON TWAIN Pro, just click the button or select Help from the menu.

- Electronic Documents
  Several of the applications that came with your scanner include electronic manuals in the Adobe Acrobat® PDF format. You'll find electronic user's guides in the **Manuals** folder on the EPSON Expression 1600 Scanning Tools CD-ROM, as well as in the product folders. The Adobe Photoshop 5.0 LE CD-ROM also includes an electronic user's guide, as does the MonacoEZcolor 1.5 CD-ROM. See page 15 for instructions on locating and viewing your Acrobat manuals.

If none of these sources answers your questions, please see "Where To Get Help" on page 128.

## *Warnings, Cautions, Notes, and Tips*

Please follow these guidelines as you read your documentation:

Warnings must be followed carefully to avoid bodily injury.

Cautions must be observed to avoid damage to your equipment.

Notes contain important information about your scanner.

Tips contain additional hints for great scanning.

# Reading Your Reference Guide

Your electronic *EPSON Expression 1600 Reference Guide* is on your EPSON Expression 1600 Scanning Tools CD-ROM. You can view it from the CD-ROM or copy it to your hard drive and view it from there. You must have a web browser (Netscape Navigator or Internet Explorer, versions 3.0 or later).

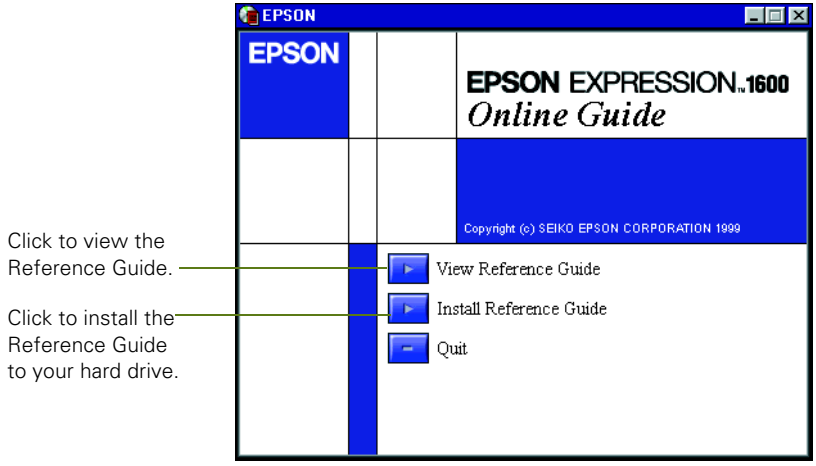
If you install the manual to your hard drive, you can read it anytime. For Windows, just click Start, Programs, EPSON, and select Exp1600 Guide. For Macintosh, double-click the View Reference Guide icon in the Expression 1600 folder on your hard drive.

Follow these steps to view the manual:

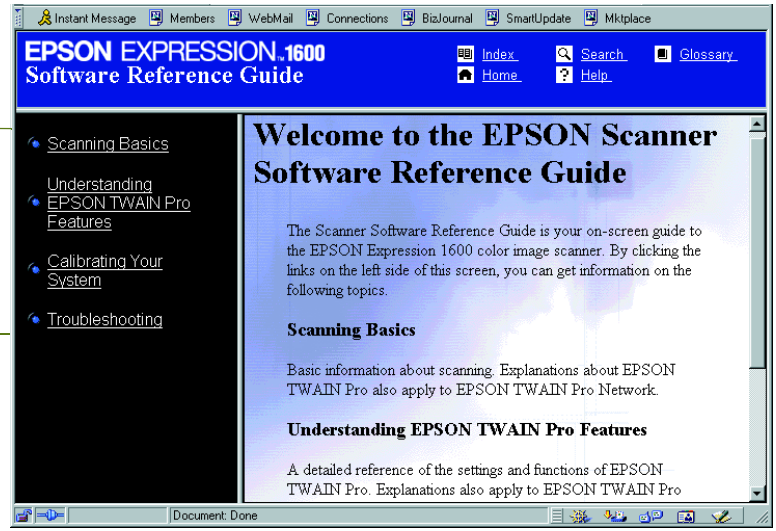
1. Insert your EPSON Expression 1600 Scanning Tools CD-ROM.

   - If you're running Windows, you see the Select Language window. Click **OK**. When you see the Software Setup window, click **Browse this CD**, and double-click the **Manuals** folder. Then double-click the **Exp1600** icon.
   - If you have a Macintosh, double-click the **Manuals** folder, and then double-click the **EPSON Expression 1600** icon.

   The Reference Guide window opens:

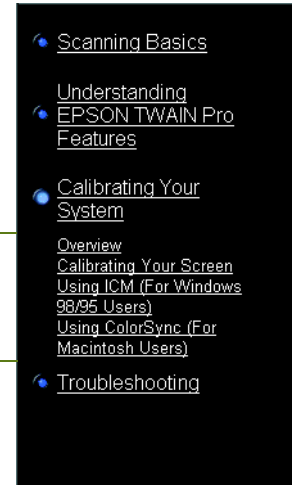


2. Click **View Reference Guide**. Your browser opens and you see this window:




Click a topic to expand its contents.

3. Click topics on the left to expand the contents. Then click the subtopic you want to view.

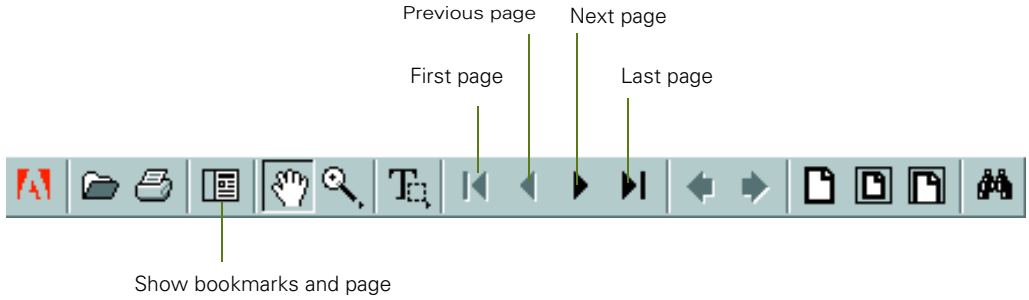



Expanded contents list

# Viewing Your Other Electronic Manuals

To view your electronic manual for Presto! PageManager for EPSON, Xerox TextBridge Classic, or any other PDF manuals, you'll use Adobe Acrobat Reader. If Acrobat Reader is not already installed on your computer, you can install it with the other scanner software. See the software installation instructions for your system in Chapter 2.

When you open an electronic manual, you'll see this toolbar:




Note

This is the toolbar for Acrobat Reader 4.0. The toolbar for Acrobat Reader 3.0 looks slightly different.

With Acrobat Reader, you have several ways to navigate through text:

- Use the bookmark section on the left side of the screen to move quickly to the topic of your choice. Click the Show Bookmarks icon on the toolbar to see the bookmark section, if the manual has bookmarks. Some manuals only have a table of contents, but you can also use this to navigate the manual if the topics are hot.
- Use the arrow buttons in the toolbar or the vertical scroll bar on the right side of the document to move through the manual. (The box to the left of the scroll bar displays the current page number.)
- Click on hot topics, which are usually underlined or displayed in a different color. To find out if a topic is hot, move your cursor over it. If the cursor turns into a pointing hand, the topic is hot—you can jump to it by clicking once.

For more information, see your Acrobat Reader online guide.

Locate your PDF manuals as follows:

- **EPSON Expression 1600 User's Guide**—You can find a PDF version of this user's guide in the Manuals folder on your Expression 1600 Scanning Tools CD-ROM.
- **Acrobat Reader**—For Windows, select Reader Guide from the Acrobat Reader Help menu.

  For Macintosh, select Reader Guide from the Acrobat Reader Help menu. Then browse to Help\Enu\Reader.pdf.
- **Presto! PageManager**—For Windows, click Start, Programs, Presto! PageManager for EPSON, PageManager User's Manual.

  For Macintosh, double-click the User's Guide.pdf icon in the Presto! PageManager for EPSON folder on your hard drive.
- **TextBridge Classic**—For Windows, click Start, Programs, TextBridge Classic 2.0, and select User Guide.

  For Macintosh, insert your Expression 1600 Scanning Tools CD-ROM, then double-click the Xerox TextBridge Classic folder. Double-click the TextBridge 3.0-Documents folder, then the English folder, then the User's Guide folder, and finally the PDF file for the chapter you want to read.
- **Adobe Photoshop 5.0 LE**—Insert your Adobe Photoshop 5.0 LE CD-ROM.

  For Windows, double-click the My Computer icon on your desktop, then double-click the Photosle CD-ROM icon. Finally, double-click the User Guide icon.

  For Macintosh, double-click the Adobe Photoshop 5.0 LE CD-ROM icon on your desktop, then double-click the User Guide.pdf icon.
- **MonacoEZcolor**—For Windows, click Start, Programs, MonacoEZcolor, and then select MonacoEZcolor User Guide.

  For Macintosh, double-click the MonacoEZcolor 1.5 folder on your hard drive, and then double-click the MonacoEZcolor User Guide.pdf icon.

# Registering

Please take a minute to fill out the registration card for your EPSON Expression 1600 and mail it back to us. This enables you to receive special information on options, new products, and software upgrades. You'll get immediate attention if you have a problem with your scanner.

# Chapter 2

# Setting Up Your Scanner



Setting up your scanner is easy. For most installations, just follow the steps in this book in the order listed below.

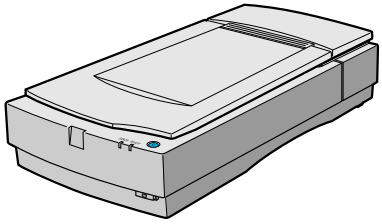
1. Unpack and choose a place for your scanner.
2. Unlock the scanner.
3. Connect the scanner to your computer.
4. Power on your scanner, then power on your computer.
5. Install the scanner software.
6. View your electronic manuals.

If you have a Macintosh, you may prefer to install the scanner software before you connect the scanner to your computer. See “Installing the Macintosh Software” on page 47. If you decide to connect the scanner before you install the software, you’ll see a message that your scanner driver needs to be installed. Just close the message and proceed with the installation instructions.

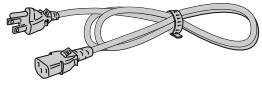
If you’re installing a transparency unit, an automatic document feeder, or an IEEE 1394 FireWire scanner interface card, see Chapter 5, “Using Optional Equipment.”

# Unpacking Your Scanner

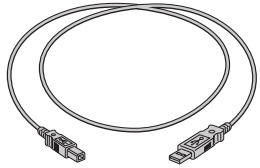
Remove the scanner from the box, then remove the packing material from your scanner. Save the packaging in case you need it later. Your EPSON Expression 1600 comes with these items:



scanner



power cable

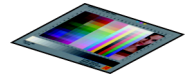


USB cable

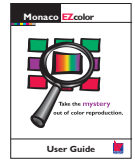
EPSON Expression 1600 Scanning Tools CD-ROM

Adobe Photoshop 5.0 LE CD-ROM (not available with the Special Edition model of the scanner)

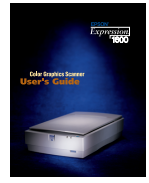
MonacoEZcolor 1.5 CD-ROM (located in plastic sleeve attached to the *MonacoEZcolor User Guide*; not available with the Special Edition model of the scanner)



IT8 target (attached to the *MonacoEZcolor User Guide*; not available with the Special Edition model of the scanner)




*MonacoEZcolor User Guide* (not available with the Special Edition model of the scanner)

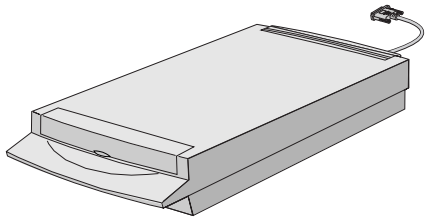



*EPSON Expression 1600 User's Guide*

Note

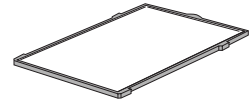
The Special Edition model of the scanner doesn't include MonacoEZcolor or Adobe Photoshop 5.0 LE.

If you have the Professional or Professional FireWire models of the EPSON Expression 1600, your scanner also comes with these items:

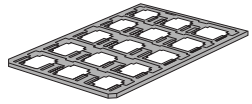


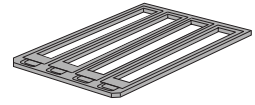
transparency unit

installation screws

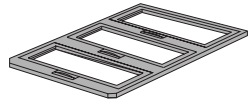


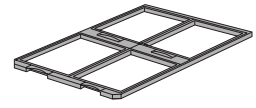
reflective document mat

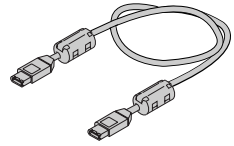




film holders





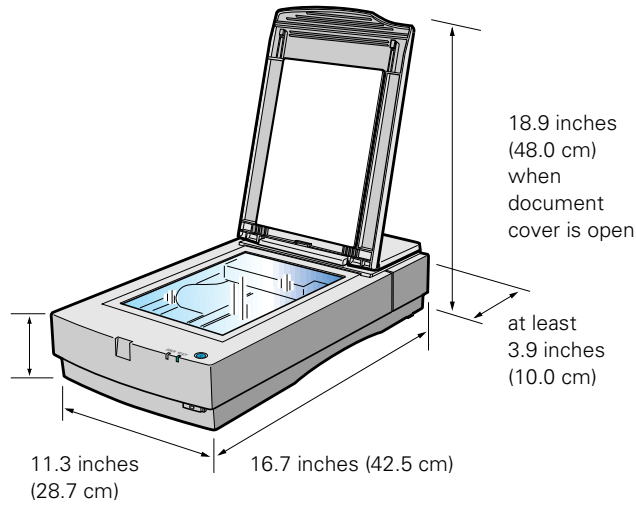


IEEE 1394 FireWire interface cable (available with the Professional FireWire model only)

# Choosing a Good Place for Your Scanner

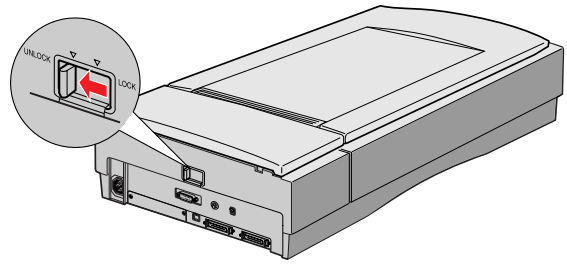
Here are some points to consider:

- Place the scanner on a flat, stable surface. If the scanner is tilted, it can't operate properly.
- Make sure to place the scanner where you can easily unplug the power cord, and where your cable can reach your computer.
- Keep the scanner away from direct sunlight and strong light sources.
- Be sure there's enough room behind the scanner for the cables, and above the scanner so you can fully raise the document cover.
- Avoid places subject to shocks and vibrations, or high or rapidly changing temperatures and humidity.



# Unlocking the Scanner

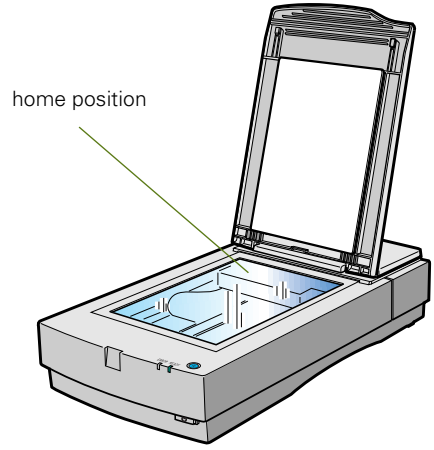
Before connecting the scanner to a power source, you must release the transportation lock, located on the back of the scanner.




Slide the transportation lock to the unlocked position, as shown.

If you can't slide the transportation lock easily, turn the scanner on; then, after the ERROR and READY lights start flashing, turn the scanner off and try again.

Always lock the transportation lock before moving the scanner. Also, be sure the scanner lamp is in the home position (toward the back of the scanner). See "Transporting the Scanner" on page 109 for more information.

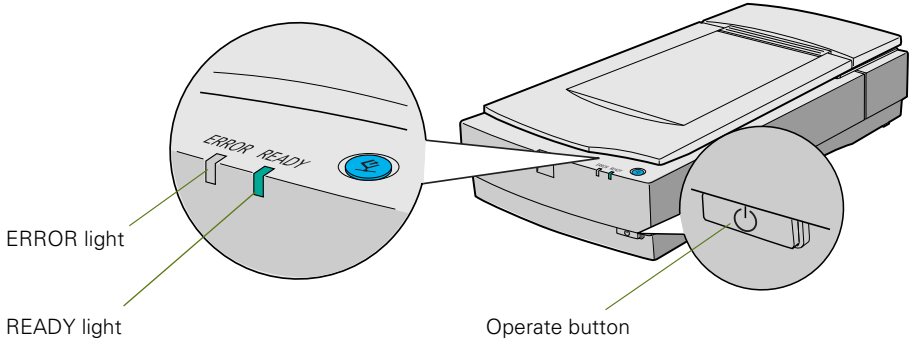


# Testing Your Scanner's Operation

To make sure your scanner is working properly, it's a good idea to turn it on before you connect it to your computer.

1. Make sure the scanner is plugged in. Then open the scanner's document cover so you can see the operation of the lamp carriage.
2. Press the ⏻ Operate button to turn the scanner on.

   The READY light on the scanner's front panel flashes, and the scanner's carriage moves forward, then back. The READY light stays on when the scanner is ready to scan.



# Connecting the Scanner to Your Computer

You can connect the scanner to your computer in any of these ways:

- **USB**
  If you have a Power Macintosh or your computer is running Windows 98, you can connect the Expression 1600 with the USB cable that came with the scanner. Windows 98 must be preinstalled on your computer; it cannot be upgraded from Windows 95. There is no USB support for Windows 95 and Windows NT 4.0.
- **SCSI**
  If you have a Power Macintosh or your Windows computer has an ASPI-compliant SCSI 2 board (Adaptec® boards are recommended), you can connect the scanner with a SCSI 2 cable not more than 19.7 feet long. If you're connecting multiple SCSI devices, the total length of the SCSI bus (cables) should not exceed 9.8 feet. If your computer is running Windows 95 or Windows NT 4.0, you must use a SCSI connection.
- **IEEE 1394 (FireWire)**
  If you have the Professional FireWire model of the Expression 1600, or you've purchased the optional IEEE 1394 FireWire scanner interface card, you can connect the scanner to your Power Macintosh with the IEEE 1394 FireWire cable that came with your scanner or card. Your Power Macintosh must have a built-in IEEE 1394 FireWire port or an IEEE 1394 FireWire PCI card, and must be running Macintosh OS 8.6 or later with FireWire Update 2.1 or later.

Adaptec Power Domain® SCSI boards for the Macintosh are not compatible with scanners.

See "IEEE 1394 FireWire Scanner Interface Card" on page 106 for instructions on installing the IEEE 1394 FireWire scanner interface card in your scanner.

If you install a USB card in your Macintosh and then upgrade your system to OS 8.6, your USB Manager won't be installed and your scanner may not work. To have USB support, you must perform a full installation of OS 8.6 from a CD-ROM before you install the card.

## Connecting to a USB Interface

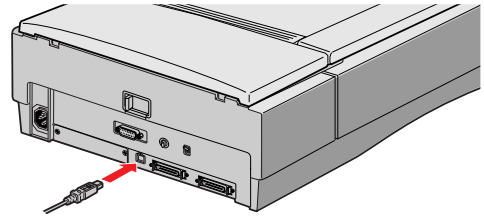
With the USB interface, you can connect or remove your scanner without having to shut down or restart your computer.

Note

Don't disconnect or connect the USB cable when the Expression 1600 is scanning.

Windows 98 must be preinstalled on your computer, not upgraded from Windows 95. There is no USB support for Windows 95 or Windows NT 4.0.

1. Locate the USB cable that came with your scanner.
2. Connect the square end of the USB cable to the scanner's USB port.
3. Connect the flat end of the USB cable to your computer's USB port or USB hub port.



If your scanner and computer are both powered on, you see the Add New Hardware Wizard (Windows) or a message that your scanner driver needs to be installed (Macintosh). Continue with the instructions in "Installing the Windows Software" on page 30 or "Installing the Macintosh Software" on page 47.

Note

If you're using a USB hub, connect the scanner to a first tier hub, which is the hub closest to the computer. If the scanner doesn't work with the hub, connect it directly to a USB port on your computer.

## Connecting to a SCSI Interface

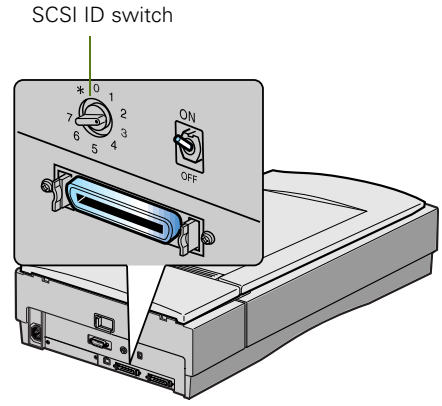
Before you connect the scanner, you must have an ASPI-compliant SCSI 2 interface board installed in your computer (Adaptec SCSI 2 interface boards are recommended). Some computers come with a SCSI 2 board preinstalled; check your computer documentation.

Note

Adaptec Power Domain SCSI boards for the Macintosh are not compatible with scanners.

If you purchased the board as an option, follow the manufacturer's instructions to install both the board and its driver.

You may also need to change the scanner's SCSI ID setting before you connect it to your computer. If you have another SCSI device that uses SCSI ID 2, turn the scanner off and turn the SCSI ID switch on the back of the scanner to a new number.



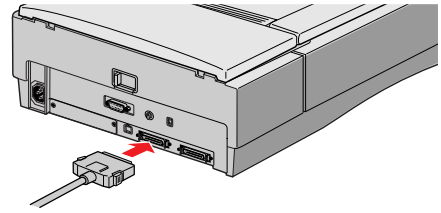

Note

Choose a number that doesn't conflict with the ID number of other SCSI devices. Don't use SCSI ID 0, 1, or 7. If your Macintosh has a built-in CD-ROM, don't use SCSI ID 3. Also, only use the asterisk (*) setting when you need to transport the scanner.

Follow these steps to connect the scanner to a SCSI interface:

1. Make sure the scanner and computer are turned off. (The scanner is off when the ⏻ Operate button is out and the ERROR and READY lights are off.)

2. Squeeze the lock releases on the lock connector end of your SCSI cable, and then plug the cable into either SCSI connector on the back of the scanner. The cable is secure when both connector locks snap in.



3. Connect the pin end of the SCSI cable to the SCSI port on your computer, or to another SCSI device in the chain. Tighten the screws to secure the cable.

Note

If you're connecting multiple SCSI devices, the total length of the SCSI bus (cables) should not exceed 9.8 feet (three meters); otherwise the system may not work properly. If you are connecting the scanner directly to your computer, use a cable no more than 19.7 feet (six meters) long.

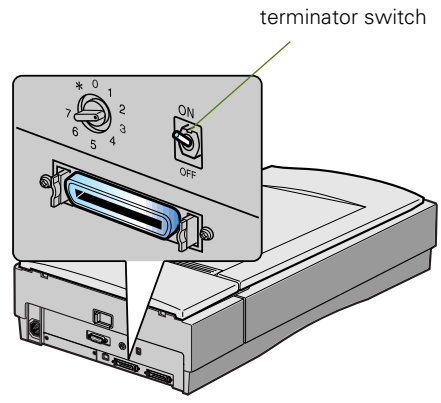
Don't use an external terminator.

4. Locate the SCSI terminator switch at the rear of the scanner.

   If the scanner is your only SCSI device, or if it's the last device in a SCSI chain, leave the terminator switch turned ON.

   If you've connected your scanner in the middle of a SCSI chain, turn the terminator switch OFF.

5. Plug in the power cables for your computer, scanner, and other external SCSI devices.




Continue with the instructions in "Installing the Windows Software" on page 30 or "Installing the Macintosh Software" on page 47.

## Connecting to an IEEE 1394 FireWire Interface

If you have the Professional FireWire model of the Expression 1600, or if you've purchased the optional IEEE 1394 FireWire scanner interface card, you can connect the scanner to your Macintosh using an IEEE 1394 FireWire interface. Your Macintosh must have a built-in IEEE 1394 FireWire port or an IEEE 1394 FireWire PCI card.

Note

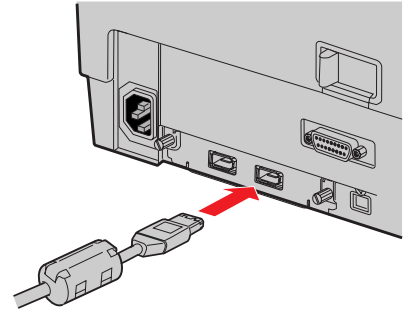
See "IEEE 1394 FireWire Scanner Interface Card" on page 106 for information about system requirements and instructions on installing the card. See page 93 for information about ordering the card.

The IEEE 1394 FireWire scanner interface card has two cable connectors. You can use either one to connect the scanner directly to your computer. At the same time, you can use the second connector to connect other IEEE 1394 FireWire devices in a daisy chain or tree configuration. You can also connect the scanner to another IEEE 1394 FireWire device so that it's the last IEEE 1394 FireWire device in a chain connected to your computer.

Neither your scanner nor your computer has to be off when you connect the cable. However, be careful not to connect or disconnect the cable when the scanner is in use.

Follow these steps to connect the scanner:

1. Locate the cable that came with the card. Connect one end of the cable to the IEEE 1394 FireWire port on the card.
2. Connect the other end of the cable to the IEEE 1394 FireWire port on your computer or on another IEEE 1394 FireWire device.



Continue with "Installing the Macintosh Software" on page 47.

# Installing the Windows Software

Before you begin installing software, make sure you recalibrate your monitor to factory specifications. Then follow the instructions for your operating system:

- If you're running Windows 98, continue with the next section, "Installing the Windows 98 Software."
- If you're running Windows 95, go to "Installing the Windows 95 Software" on page 37.
- If you're running Windows NT 4.0, go to "Installing the Windows NT 4.0 Software" on page 42.

For instructions on installing software for a network scanner, go to Chapter 4, "Network Scanning."

When you've finished installing the software on your EPSON Expression 1600 Scanning Tools CD-ROM, continue with "Installing Additional Windows Software" on page 45 if you want to install Adobe Photoshop 5.0 LE, TextBridge Classic, or MonacoEZcolor.

Adobe Photoshop 5.0 LE, TextBridge Classic, MonacoEZcolor, and Presto! PageManager are not included with the Special Edition model of the scanner.

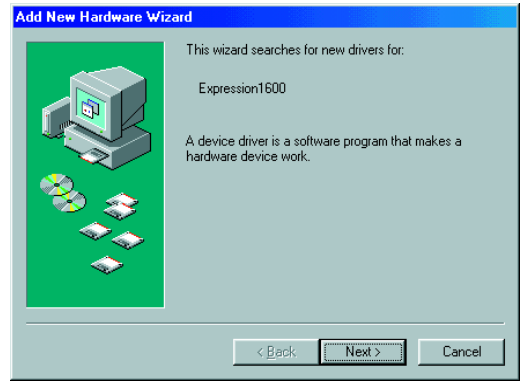
## *Installing the Windows 98 Software*

Before you begin, make sure the Expression 1600 is connected to your computer. Also, make sure you've recalibrated your monitor to factory specifications.

This procedure automatically installs your EPSON TWAIN Pro driver and any software you need for a USB connection. If you're using a SCSI connection and are configuring your SCSI interface card for the first time, you'll be asked to install your SCSI driver at the beginning of installation. Follow the instructions on the screen to install your SCSI driver, or see the documentation that came with your SCSI card.

You may be asked to insert your Windows CD-ROM during this procedure. Make sure you have your Windows CD-ROM available, or know where to find the Windows source files on your hard drive. If you need help locating your source files, contact your computer manufacturer.

1. Turn on your scanner first, then turn on your computer.
2. When you see the window on the right, click **Next**. (The wizard may also say that it has found an unknown device.)



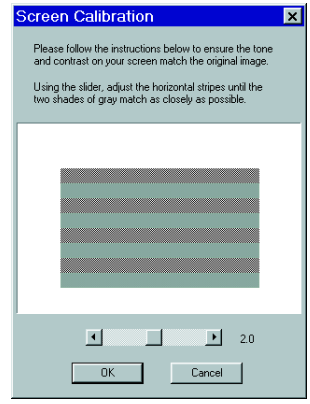

3. Select **Search for the best driver for your device**, and then click **Next**.
4. Insert the EPSON Expression 1600 Scanning Tools CD-ROM in your drive.

5. Select Specify a location, if necessary, and browse to Epson\English\Win 98 on your CD-ROM drive. (The example to the right uses "G" as the CD-ROM drive letter. Your CD-ROM drive letter may be different.) Click OK to close the Browse window, and then click Next.

6. Follow the instructions on the screen.

   If you see a message asking for your Windows 98 CD-ROM, insert it and click OK (or select Specify a location, click Browse, and locate the Windows 98 source files on your hard drive. Then click OK.) When prompted for the EPSON Scanners Driver Disk 1, reinsert your EPSON Expression 1600 Scanning Tools CD-ROM.

7. When you see the EPSON Screen Calibration Utility, move the slider right or left until the stripes match as closely as possible. Then click OK.




8. Click Finish when you see a message that installation is complete.

Continue with the instructions in the next section, "Installing Other Software on Your Scanning Tools CD-ROM."

Note

The EPSON Screen Calibration Utility calibrates the preview image you see in your EPSON TWAIN Pro driver to match your monitor settings.

You won't need to change the screen calibration as long as you continue to use the same display. If you need to recalibrate your screen at a later time, double-click the Scanners and Cameras icon in your Windows Control Panel to open the Scanners and Cameras Properties window. On the Devices tab, select EPSON Expression 1600 and click the Properties button to display the EPSON Expression 1600 Properties window. Click the Utility tab, and then click the Screen Calibration Utility button.

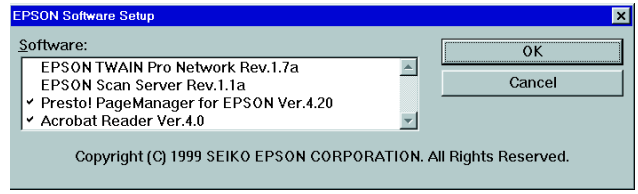
## *Installing Other Software on Your Scanning Tools CD-ROM*

Follow these steps to install Presto! PageManager and Adobe Acrobat:

1. If the Select Language window doesn't appear, double-click the **My Computer** icon on your Windows desktop, then double-click the **Epson** CD-ROM icon. (If the window doesn't appear when you double-click the CD-ROM icon, double-click the **Cdsetup** icon.)

2. Make sure **English** is selected, then click **OK** to display the following window.

3. Click the **Add Software** button to display the software selection window. A check mark appears beside applications selected for installation. If you want to deselect either Presto! PageManager or Acrobat Reader, click the application to clear the check mark. Then click **OK**.




Note

Don't select either of the two network applications, EPSON TWAIN Pro Network or EPSON Scan Server. The EPSON TWAIN Pro driver, which is already installed on your computer, lets you scan to an Expression 1600 connected to your computer. If you want to install software for a network scanner, go to Chapter 4, "Network Scanning."

If you have the Special Edition model of the scanner, Presto! PageManager does not appear in the software selection window. This software is not included with your scanner.

4. Follow the instructions on the screen to install the software.

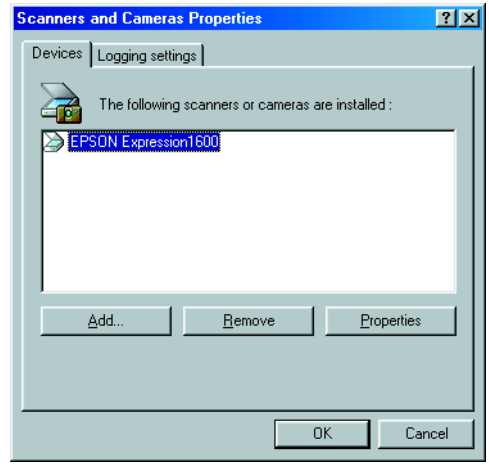
If you're done installing software, remove the EPSON Expression 1600 Scanning Tools CD-ROM and restart your computer. Then follow the instructions in the next section to make sure your scanner is operating properly.

If you want to install TextBridge Classic, Adobe Photoshop 5.0 LE, or MonacoEZcolor, continue with the instructions under "Installing Additional Windows Software" on page 45.

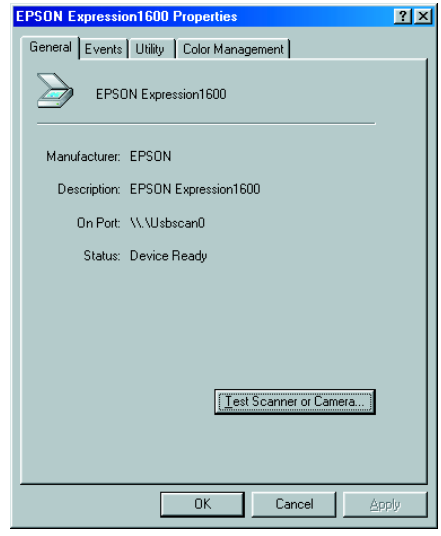
## *Testing the Scanner's Operation (Windows 98)*

Follow these steps to test scanner operation:

1. Double-click the Scanners and Cameras icon in the Windows Control Panel to open the Scanners and Cameras Properties window.



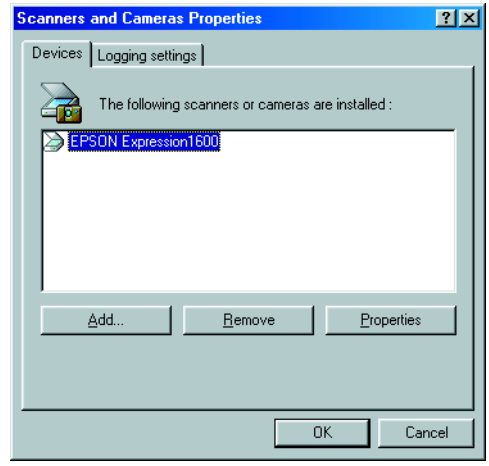

2. Make sure EPSON Expression1600 is selected, and then click the Properties button.
3. Click the Test Scanner or Camera button. If the scanner is operating properly, Device Ready appears next to Status.



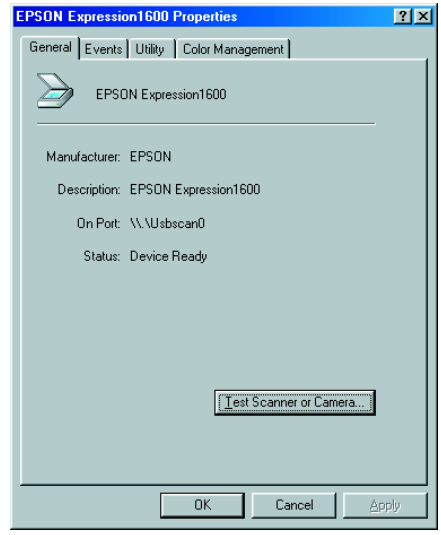
## *Selecting the Expression 1600 as Your Default Scanner (Windows 98)*

If you have more than one scanner connected to your computer, you can set up the Expression 1600 as the default scanner.

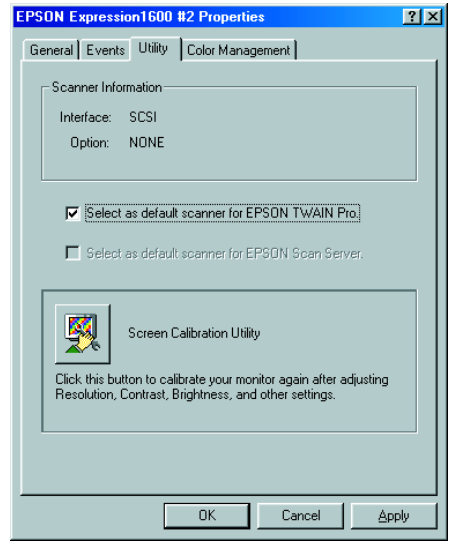
1. Double-click the **Scanners and Cameras** icon in your Windows Control Panel to open the Scanners and Cameras Properties window.




2. Make sure **EPSON Expression 1600** is selected, and click the **Properties** button. You see the EPSON Expression 1600 Properties window.



3. Click the Utility tab. Make sure Select as default scanner for EPSON TWAIN Pro is checked, and then click OK.




## Installing the Windows 95 Software

Before you begin, make sure the Expression 1600 is connected to your computer. Also, make sure you've recalibrated your monitor to factory specifications.

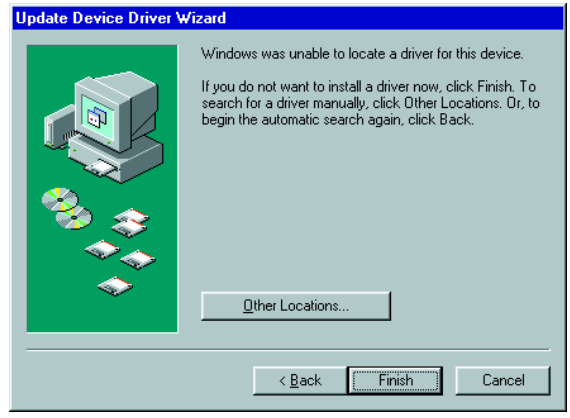
If you're configuring your SCSI interface card for the first time, you'll be asked to install your SCSI driver at the beginning of installation. Make sure you have your Windows CD-ROM available, or know where to find the Windows source files on your hard drive. Then follow the instructions on the screen, or see the documentation that came with your SCSI card for more information.

Note

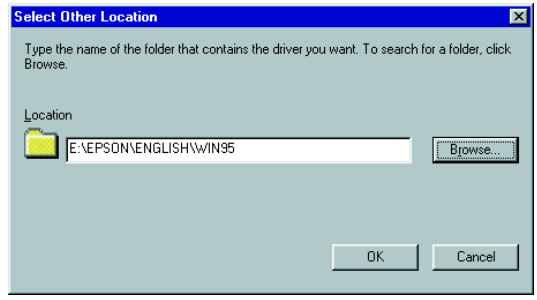
If you need help locating your source files, contact your computer manufacturer.

1. Turn on your scanner first; then turn on your computer. When you see the window on the right, click **Next**.

2. Insert your Expression 1600 Scanning Tools CD-ROM in your drive. Then click **Other Locations**.




3. Browse to the following location on your CD-ROM drive: **EPSON\English\Win95**. (The example on the right uses "E" as the CD-ROM drive letter. Your CD-ROM drive may have a different letter.) Click **OK**.



4. When you see this window, click Finish.

Continue with the instructions in the next section to install EPSON TWAIN Pro and other software on your Expression 1600 Scanning Tools CD-ROM.

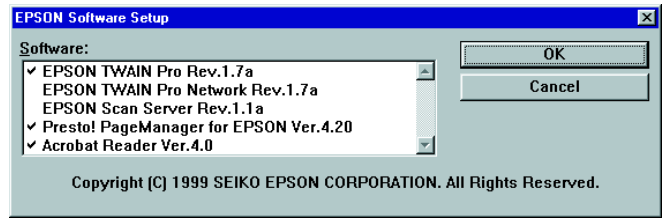
## Installing Other Software on Your Scanning Tools CD-ROM

Follow these steps to install EPSON TWAIN Pro, Presto! PageManager, and Acrobat Reader:

1. Double-click the My Computer icon on your Windows desktop, then double-click the Epson CD-ROM icon. You see the window on the right. (If the Select Language window doesn't appear, double-click the Cdsetup icon.)

2. Make sure English is selected, and click OK to display the Software Setup window.

3. Click **Add Software**. You see the software selection window.




A check mark appears beside applications selected for installation. You must install EPSON TWAIN Pro to use your scanner. If you want to deselect either Presto! PageManager or Acrobat Reader, click the application to clear the check mark. Then click **OK**.

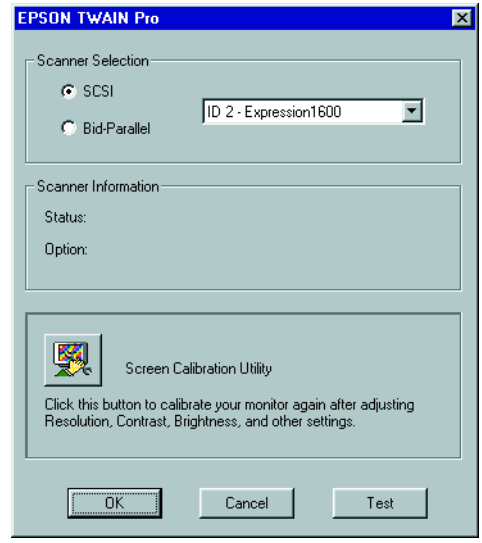
Note

Don't select either of the two network applications, EPSON TWAIN Pro Network or EPSON Scan Server. If you want to install software for a network scanner, go to Chapter 4, "Network Scanning."

If you have the Special Edition model of the scanner, Presto! PageManager does not appear in the software selection window. This software is not included with your scanner.

4. Follow the instructions on the screen to install EPSON TWAIN Pro. When installation is complete, you see the window on the right. Make sure **SCSI** is selected and **Expression1600** appears in the Scanner Selection box.

5. Click **Test** to check the connection. If the scanner software is installed correctly, you see **Status: Device Ready** under **Scanner Information**. Click **OK** to close the window.

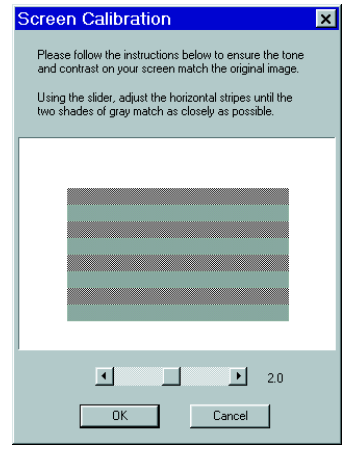


6. When you see the EPSON Screen Calibration Utility, move the slider right or left until the stripes match as closely as possible. Then click **OK**.

7. Follow the instructions on the screen to install Presto! PageManager and Acrobat Reader.

   If you're done installing software, remove the EPSON Expression 1600 Scanning Tools CD-ROM and restart your computer.

   If you want to install TextBridge Classic, Adobe Photoshop 5.0 LE, or MonacoEZcolor, continue with the instructions under "Installing Additional Windows Software" on page 45.




Note

The EPSON Screen Calibration Utility calibrates the preview image you see in your EPSON TWAIN Pro driver to match your monitor settings.

You won't need to change the screen calibration as long as you continue to use the same display. If you need to recalibrate your screen at a later time, open the EPSON TWAIN Pro window by double-clicking the EPSON TWAIN Pro icon in the Windows Control Panel. Then start the EPSON Screen Calibration Utility by clicking the Screen Calibration button at the bottom of the window.

Verify that the scanner is listed in the Windows Device Manager. (Click **Start**, **Settings**, **Control Panel**, then double-click the **System** icon. Select the Device Manager tab and double-click **EPSON Scanners**. **EPSON Expression1600** should appear in the list.)

## Installing the Windows NT 4.0 Software

This procedure installs EPSON TWAIN Pro, Presto! PageManager, and Acrobat Reader. Before you begin, make sure the scanner is attached to your computer, and that you've recalibrated your screen to factory specifications.

If you're configuring your SCSI interface card for the first time, you'll be asked to install your SCSI driver at the beginning of installation. Make sure you have your Windows CD-ROM available, or know where to find the Windows source files on your hard drive. Then follow the instructions on the screen, or see the documentation that came with your SCSI card for more information.

Note

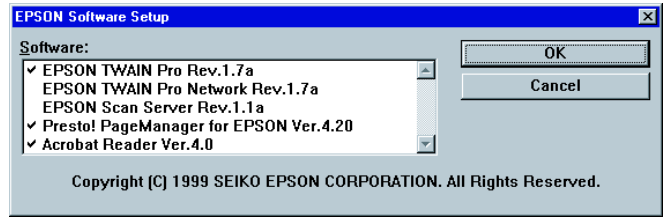
If you need help locating your source files, contact your computer manufacturer.

1. Turn on your scanner first; then turn on your computer.
2. Log onto Windows NT. Then insert the EPSON Expression 1600 Scanning Tools CD-ROM.
3. When you see the Select Language window, make sure English is selected, then click OK to display the Software Setup window.

Note

If the Select Language window doesn't appear, double-click the My Computer icon on your Windows desktop, then double-click the Epson CD-ROM icon. If necessary, double-click the Cdsetup icon.

4. Click **Add Software**. You see the software selection window.



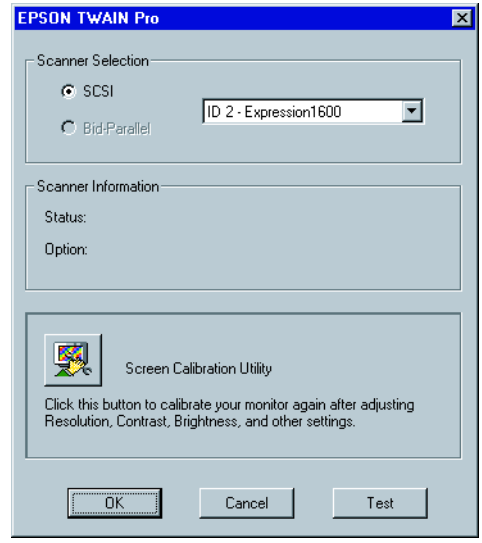

   A check mark appears beside applications selected for installation. You must install EPSON TWAIN Pro to use your scanner. If you want to deselect either Presto! PageManager or Acrobat Reader, click the application to clear the check mark. Then click **OK**.

Note

Don't select either of the two network applications, EPSON TWAIN Pro Network or EPSON Scan Server. If you want to install software for a network scanner, go to Chapter 4, "Network Scanning."

If you have the Special Edition model of the scanner, Presto! PageManager does not appear in the software selection window. This software is not included with your scanner.

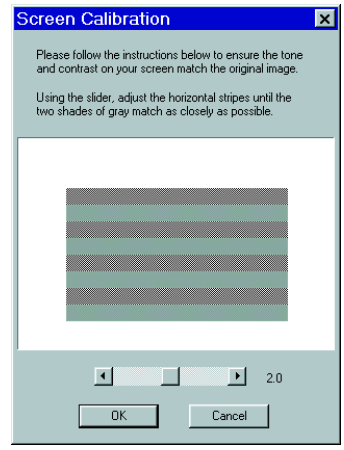
5. Follow the instructions on the screen to install EPSON TWAIN Pro. When installation is complete, you see the window on the right. Make sure **SCSI** is selected and **Expression1600** appears in the **Scanner Selection** box.




6. Click **Test** to check the connection. If the scanner software is installed correctly, you see **Status: Device Ready** under **Scanner Information**. Click **OK** to close the window.

7. When you see the EPSON Screen Calibration Utility, move the slider right or left until the stripes match as closely as possible. Then click OK.

8. Follow the instructions on the screen to install Presto! PageManager for EPSON and Acrobat Reader.




If you're done installing software, remove the EPSON Expression 1600 Scanning Tools CD-ROM and restart your computer.

If you want to install TextBridge Classic, Adobe Photoshop 5.0 LE, or MonacoEZcolor, continue with the instructions under "Installing Additional Windows Software" on page 45.

Note

The EPSON Screen Calibration Utility calibrates the preview image you see in your EPSON TWAIN Pro driver to match your monitor settings.

You won't need to change the screen calibration as long as you continue to use the same display. If you need to recalibrate your screen at a later time, open the EPSON TWAIN Pro window by double-clicking the EPSON TWAIN Pro icon in the Windows Control Panel. Then click the Screen Calibration button at the bottom of the window to start the utility.

To verify that the scanner software was installed correctly, click Start, Settings, Control Panel, and then double-click SCSI Adapters. Click the Devices tab, if necessary. Then click the + next to the listing for your SCSI card manufacturer; EPSON Expression1600 should be listed beneath it.

# Installing Additional Windows Software

Follow the instructions in this section to install TextBridge Classic, Adobe Photoshop 5.0 LE, and MonacoEZcolor.

Note

TextBridge Classic, Adobe Photoshop 5.0 LE, and MonacoEZcolor are not included with the Special Edition model of the scanner.

## *Installing TextBridge Classic*

1. If necessary, insert the EPSON Expression 1600 Scanning Tools CD-ROM in your drive.

   You see the window on the right. (If the Select Language window doesn't appear, double-click the **My Computer** icon on your Windows desktop, then double-click the **Epson** CD-ROM icon.)

2. Make sure **English** is selected, and click **OK**.
3. When you see the Software Setup window, click **Browse This CD**.
4. Double-click the **TextBridge Classic** folder on the CD-ROM, then double-click the **Setup** installer icon.

Note

If you're running Windows NT, you must have Service Pack 3 installed. Otherwise, you may see an error message indicating that your path to Setup.exe is invalid.

5. At the first screen, click English-US, then follow the instructions on the screen to install TextBridge Classic. When installation is complete, remove the EPSON Expression 1600 Scanning Tools CD-ROM.

   If you're done installing software, restart your computer.

## Installing Adobe Photoshop 5.0 LE

To find out how to upgrade to the full version of Adobe Photoshop 5.0, see the Acrobat file titled Upgrade.pdf on the Adobe Photoshop 5.0 LE CD-ROM (you must have Acrobat Reader installed to view this file).

1. Insert the Adobe Photoshop 5.0 LE CD-ROM in your drive.
2. Double-click the My Computer icon on your Windows desktop, then double-click the Photosle CD-ROM icon.
3. Double-click the Photosle folder, then double-click the

setup icon.
4. Follow the instructions on the screen. When you see the User Information dialog box, enter your name and company, and then enter the serial number (including the hyphen) of your software exactly as it appears on the CD-ROM sleeve. Then click Next.
5. Follow the instructions on the screen to complete installation and create a Photoshop 5.0 Limited Edition program folder in your Adobe program group.
6. Remove the Adobe Photoshop 5.0 LE CD-ROM.

   If you're done installing software, restart your computer.

## Installing MonacoEZcolor

1. Insert the MonacoEZcolor CD-ROM in your drive.
2. Double-click the My Computer icon on your Windows desktop, then double-click the MonacoEZcolor CD-ROM icon.
3. Double-click the Setup.exe icon and follow the instructions on the screen. When you're done installing the software, click Finish and restart your computer.

# Installing the Macintosh Software

Although you can connect the scanner either before or after installing the scanner software, you'll see a message that your scanner driver needs to be installed if you connect it before installing. Close the message and continue with the installation instructions in the next section. For instructions on installing software for a network scanner, go to Chapter 4, "Network Scanning."

You can connect the scanner using either a SCSI or USB interface. If you have the Professional FireWire model of the scanner or you've installed the optional IEEE 1394 FireWire scanner interface card, you can also connect the scanner using the IEEE 1394 FireWire interface. See "Connecting the Scanner to Your Computer" on page 25 for instructions on connecting the scanner, and "IEEE 1394 FireWire Scanner Interface Card" on page 106 for instructions on installing the IEEE scanner FireWire interface card.

If you've used an EPSON scanner on your Macintosh and have installed an older version of EPSON TWAIN software, open the Extensions Manager before you begin installation. Clear the checkboxes next to EPSON Scanner Monitor Extension or EPSON Scanner Monitor USB Extension and restart your computer. Then continue with the instructions below.

## *Starting the Macintosh Software Installation*

Before you begin, make sure you've recalibrated your monitor to factory specifications. You can use tools such as ColorSync 2.5 or above, the Adobe Gamma utility included with Adobe Photoshop 5.0 and above, and MonacoEZcolor. (For instructions on installing MonacoEZcolor, see "Installing MonacoEZcolor" on page 51.)

If you don't calibrate your monitor, you may get inconsistent scanning results.

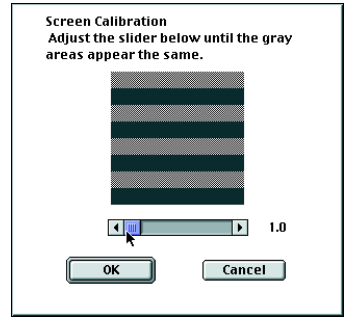
1. Turn on your Macintosh and turn off any virus protection programs you're using.
2. Insert the EPSON Expression 1600 Scanning Tools CD-ROM in your drive.

3. Double-click the EPSON TWAIN Pro folder, then double-click the English folder.
4. Double-click the EPSON TWAIN Pro Installer icon.
5. Click Install, and then follow the instructions on the screen to install EPSON TWAIN Pro and EPSON Scanner Monitor.
6. When installation finishes, click Restart.

The EPSON Screen Calibration Utility starts. (If you've previously installed another EPSON scanner on your computer, the EPSON Screen Calibration Utility may not start if it's already installed on your computer.)

7. Move the slider left or right until the stripes match as closely as possible. Then click OK.

   Your computer restarts.



The EPSON Screen Calibration Utility calibrates the preview image you see in your EPSON TWAIN Pro driver to match your monitor settings. If you need to recalibrate your screen at a later time, double-click the EPSON Screen Calibration icon in the EPSON Scanner folder on your hard drive.

## Installing Other Software on Your Scanning Tools CD-ROM

Follow these steps to finish installing the software on your Expression 1600 Scanning Tools CD-ROM:

If you have the Special Edition model, Presto! PageManager and TextBridge Classic are not included with your scanner.

1. Double-click the **Presto! PageManager** folder, then double-click the **English** folder. (If necessary, double-click the **EPSON** CD-ROM icon to open the CD-ROM window.)
2. Double-click the **Presto! PageManager Disk 1** folder. Double-click the **PageManager Installer #1** icon and follow the instructions on the screen to install Presto! PageManager.
3. If you want to install Acrobat Reader 4.0, double-click the **Acrobat Reader** folder, and then double-click the **English** folder.
4. Double-click the **Reader Installer** icon and follow the instructions on the screen to install Acrobat Reader.
5. When you're done installing Acrobat Reader, double-click the **Xerox TextBridge Classic** folder.
6. Double-click the **Install TextBridge 3.0** icon. Click **English-US**, and then follow the instructions on the screen to install TextBridge Classic.
7. If you've finished installing software, remove the Expression 1600 Scanning Tools CD-ROM and restart your computer. If you want to install other software, continue with the instructions below.

## Installing Adobe Photoshop 5.0 LE

To find out how to upgrade to the full version of Adobe Photoshop 5.0, see the Acrobat file titled **Upgrade.pdf** on the Adobe Photoshop 5.0 LE CD-ROM (you must have Acrobat Reader installed to view this file).

If you have the Special Edition model, Adobe Photoshop 5.0 LE does not come with your scanner.

1. Insert the Adobe Photoshop 5.0 LE CD-ROM in your drive.
2. Double-click the **Adobe Photoshop 5.0 LE** CD-ROM icon, then double-click the **Adobe Photoshop 5.0 LE** folder.
3. Double-click the **Install Photoshop® LE** icon. You see the Adobe Photoshop Installer banner. Click **Continue**.
4. At the next window, choose the country you're in and click **OK**. You see the License Agreement.
5. Read the agreement and click **Accept**.
6. Follow the instructions on the screen until you see the registration screen. Enter your name and company, and then enter the serial number of your software (including the hyphen) exactly as it appears on the CD-ROM case. Click **Next**.
7. Follow the instructions on the screen to install the software and create an **Adobe Photoshop 5.0 LE** folder on your hard drive.
8. If you've finished installing software, restart your computer. If you want to install other software, continue with the instructions in the following sections.

## Installing MonacoEZcolor

If you have the Special Edition model, MonacoEZcolor is not included with your scanner.

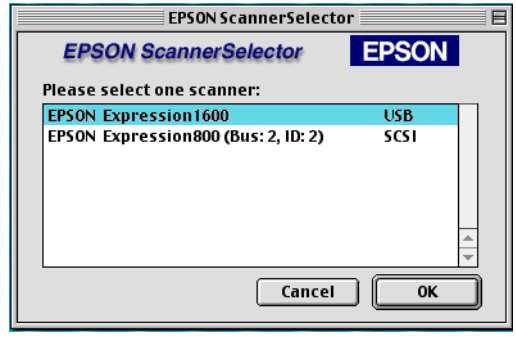
1. Insert the MonacoEZcolor CD-ROM in your drive.
2. Double-click the MonacoEZcolor 1.5.0 CD-ROM icon on your desktop.
3. Double-click the Monaco EZcolor 1.5.0 folder, and then double-click the MonacoEZcolor 1.5 Installer icon.
4. When you see the installer window, click Continue and follow the instructions on the screen.
5. Click Quit when installation is complete. Then restart your computer.

## Selecting the Expression 1600 as Your Default Scanner

If you have more than one EPSON scanner connected to your computer, you can choose which scanner you want to use.

Follow these steps to choose the Expression 1600 as your default scanner:

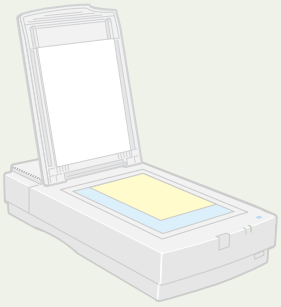
1. From the Apple menu, click Control Panels, EPSON ScannerSelector. You see the following window:




2. Select EPSON Expression1600 in the scanner list and click OK.

Your selection remains in effect until you change it.

# Chapter 3
# How to Scan



This section gives you an overview of the scanning process and some tips for getting the best scan. It also includes step-by-step scanning instructions.

## Scanning Tips

Getting the best scan possible depends on several factors, including the quality of your original and the resolution you select. The better your original is, the better your scan will be. While you can make some color corrections in your scanning software, you'll need to do major color photo retouching in a program such as Adobe Photoshop.

### *Selecting Resolution*

Resolution refers to how many dots per inch (dpi) or dots per centimeter (dpcm) your image contains. The best resolution for a scanned image depends on the type of image you're scanning and your final output device.

As a rule of thumb for most images except line art, use a scanning resolution that is approximately one third of your output resolution. For example, use a scanning resolution up to 100 dpi with a 300 dpi laser printer, and up to 200 dpi with a 600 dpi laser printer. For 1440 dpi ink jet printers, such as the EPSON Stylus® COLOR series, use a scanning resolution of up to 300 dpi. Try a scanning resolution of 240 dpi for 720 dpi printing.

Keep the following in mind when you choose a resolution:

- The higher the resolution you select, the larger the resulting image file will be. For example, an 8.5 × 11-inch original scanned at 300 dpi can produce a 24MB file. The same original scanned at 72 dpi creates only a 1.3MB file. Large files take longer to process and print, so consider the practical limitations of your computer system and hard disk drive when selecting a resolution. To keep your file size manageable, select the lowest possible resolution that gives acceptable quality. (If your final output is for on-screen viewing, you can scan at 72 dpi and reduce your file size.)
- If you need to scan at a higher resolution, you can reduce the size of the resulting image file by scanning only part of the image. For information about selecting part of an image, see "Making and modifying marquees" in your electronic *EPSON Expression 1600 Software Reference Guide*.

## Scaling (Resizing) Images

If you plan to enlarge your image, it's better to enlarge it by scanning at a higher resolution rather than adjusting resolution in your application. Each time you modify an image, you lose some image quality.

Keep in mind when you enlarge a small photo, such as 35 mm slides or wallet-size photos, you'll need to scan at a high enough resolution to retain your image quality, but not so high that your file size is too large to be efficient.

## Scanning Color Images

If the colors in your scanned image don't match those in your original document, try experimenting with the Unsharp Mask setting. Click the Destination button in the EPSON TWAIN Pro main window to display the Destination window, and then select or deselect Unsharp Mask.

To reproduce the most accurate colors, use MonacoEZcolor to create color profiles for your scanner, printer, and monitor. Then use an ICC-compliant color management application like Adobe Photoshop 5.0 to apply the profiles. (Make sure to turn off color management in your scanner software.) See the *MonacoEZcolor User Guide* for details.

## Batch Scanning

You can use batch scanning to save time. Batch scanning allows you to scan several images at once, or the same image with several different settings.

For more information, see “Making and modifying marquees” in your electronic *EPSON Expression 1600 Software Reference Guide*.

## Using the Dual Focus Mechanism

The Expression 1600’s Dual Focus mechanism eliminates the Newton ring effect when you’re using the transparency unit. The focus is automatically set to 2.5 when the transparency unit is installed and you select TPU for Neg. Film or TPU for Pos. Film as the Document Source. If you use the film guides, you don’t need to change the focus setting. If you set your film directly on the scanner’s document table, you should preview your scan and click the Focus button on the Preview window to set the focus position to 0.0. See your electronic *EPSON Expression 1600 Software Reference Guide* for more information.

## Recommended Settings

Here are some recommended settings for different types of scans.

| Image type | Recommended application | Recommended TWAIN Pro* settings | Scanning resolution for printing** |
|---|---|---|---|
| Photograph | Photoshop 5.0 LE | Image Type:<br>36-bit Color (HiFi)***,<br>24-bit Color (Std),<br>12-bit Gray (HiFi)***, or<br>8-bit Gray (Std) | 300 dpi** |
| Magazine | Photoshop 5.0 LE | Image Type:<br>24-bit Color De-screening | 300 dpi |
| Newspaper (text only) | TextBridge or PageManager | Image Type: OCR**** | 300 or<br>400 dpi***** |
| Text for OCR | TextBridge or PageManager | Image Type: OCR**** | 300 or<br>400 dpi***** |
| Text with images | TextBridge or PageManager | Image Type: Line art<br>B/W option: Auto Area Segmentation | 300 or<br>400 dpi ***** |
| Line art | Photoshop 5.0 LE | Image Type: Line Art | 300 to 3200 dpi |
| Negative transparency (35 mm film) | Photoshop 5.0 LE | Document Source:<br>TPU for Neg. Film | 300 to 3200 dpi |
| Positive transparency (35 mm slides) | Photoshop 5.0 LE | Document Source:<br>TPU for Pos. Film | 300 to 3200 dpi |

* Recommendations for EPSON TWAIN Pro also apply to EPSON TWAIN Pro Network.

** If your output is for on-screen viewing (for example, on a web page), select a resolution of 72 dpi.

*** This Image Type is available only in certain applications, such as Photoshop.

**** Automatically selects Text Enhancement Technology (TET) as your B/W option.

***** If you are enlarging your image, you must manually change the resolution (dpi).

# Step-by-Step Scanning Instructions

This section contains step-by-step instructions for scanning an image. Although the Macintosh interface is shown, Windows steps are the same.

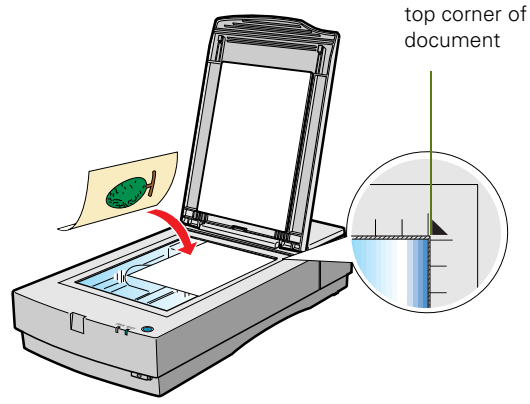
## *Placing Your Original Document*

1. Raise the scanner cover and place your document face down on the document table. If you're scanning a transparency, the optional transparency unit should be installed. (See "Installing the Transparency Unit" on page 95.)

Note

If you have the Professional or Professional FireWire model of the EPSON Expression 1600, the transparency unit came with your scanner. If you have the Artist or Special Edition models, you can order the transparency unit.

2. Position the document so the horizontal and vertical edges are carefully aligned with the scales along the sides of the document table.
3. Close the document cover slowly. Be careful not to move the document.




Note

You can remove the document cover if you need to scan a thick item—such as a photo in an album—that doesn't fit under the cover. Simply lift the back of the cover straight up. When you reattach the cover, position the hinges over the posts at the top of the scanner and push down gently until the cover clicks into place.

## Scanning with EPSON TWAIN Pro

1. Start your host application (for example, Adobe Photoshop 5.0 LE).
2. Select your scanner driver. (Unless you change your source, you only need to do this step once.)

   For example, if you're running Windows and using Adobe Photoshop 5.0 LE as your host application, click **File**, **Import**, **Select TWAIN_32 Source**. In the Select Source dialog box, select **EPSON TWAIN Pro(32-bit)**. Then click **Select**.

   If you have a Macintosh, click **File**, **Import**, **Twain Select**. In the Select a source dialog box, choose **EPSON TWAIN Pro** and click **OK**.

Note

The command you choose from the File menu differs from one host application to another. With other host applications, you might choose Acquire or Select Source instead of Import.

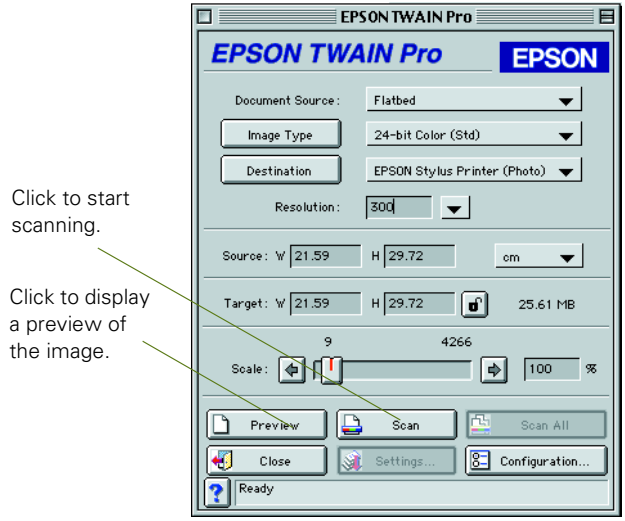
3. Open the scanner software.

   For example, choose **Import** from Photoshop 5.0 LE's File menu.

   In Windows, select **TWAIN_32**.

   On a Macintosh, select **TWAIN_Acquire**.

   The EPSON TWAIN Pro main window appears.




4. Choose the **Document Source**, **Image Type**, and **Destination**.

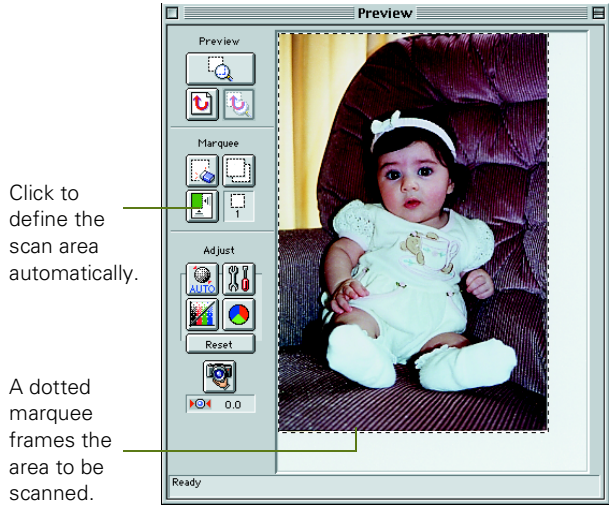
   For example, if you're scanning a photograph, select **Flatbed** as your **Document Source**, **24-bit Color (Std)** as your **Image Type**, and **EPSON Stylus Printer (Photo)** as the **Destination**, if you're sending the scanned image to an EPSON inkjet printer. If you're using the optional transparency unit, select **TPU for Neg**.

Film or TPU for Pos. Film as your Document Source. If you're using the optional automatic document feeder, select Auto Document Feeder as your Document Source.

5. Click the Preview button.

   You see a preview of your scan in the window that opens.

6. Click the Auto Locate button to automatically define the scan area around the edges of your image. Or adjust the scan area by positioning the mouse pointer over any of the eight boxes around the marquee's edge and dragging the box to resize the marquee.




   Click the Auto Exposure button to automatically set the highlight, midtones, and shadow exposure.

Note

Generally it's a good idea to use the Auto Exposure button to obtain the best settings for your scan. If you're not satisfied with the results, see your electronic *EPSON Expression 1600 Software Reference Guide* for information about adjusting settings.

If you need to remove color cast from your image, use the Gray Balance Intensity feature.

7. When you've finished making adjustments, click the Scan button.

   The READY light on the front of the scanner flashes while it's scanning. In a few moments, a scanned image is imported into your host application's window.

   (If the READY light continues to blink, it may indicate an error condition. See Chapter 7, "Solving Problems," for more information.)

8. Click **Close** to close the EPSON TWAIN Pro window and return to your application.

Don't leave photographs on the document table for long periods of time; they may stick to the glass.

## Using the ⇗ Start Button

You can load a document in the scanner, press the ⇗ Start button, and watch while Presto! PageManager starts and then scans, copies, faxes, or e-mails your document.

If you have the Special Edition model of the Expression 1600, Presto! PageManager was not included with your scanner. Go to "Setting Up the ⇗ Start Button" on page 61 to set up your system to start another application that supports ⇗ Start button scanning, such as Adobe Photoshop.

This section includes the following:

- How to set up the ⇗ Start button to launch other applications
- How to set up Presto! PageManager for one-touch scanning.

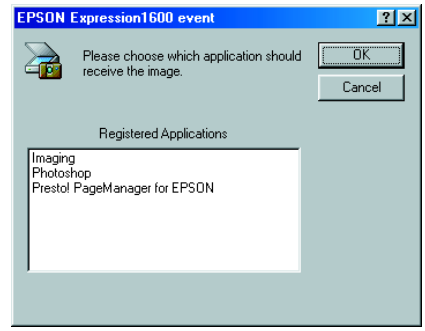
To use the ⇗ Start button with a network scanner, the client computer must start both the host application and EPSON TWAIN Pro Network. Pressing the ⇗ Start button sends the scanned image to the client computer currently connected to the scanner server, but does not automatically launch any applications.

When EPSON Scan Server is running, the Expression 1600 connected to the scanner server becomes a network scanner available only to remote users. The scanner server cannot use the ⇗ Start button features described in this chapter, which are only available to a local scanner.

## Setting Up the Start Button

If you didn't install Presto! PageManager or if you have the Special Edition model of the scanner, you need to assign an application to the Start button before you use it the first time.

If you're running Windows 98, whenever you press the Start button you'll see a window asking you to choose which application to launch. To avoid this window, make sure that only one application is assigned to the Start button. Continue with the next section, "Windows 98."

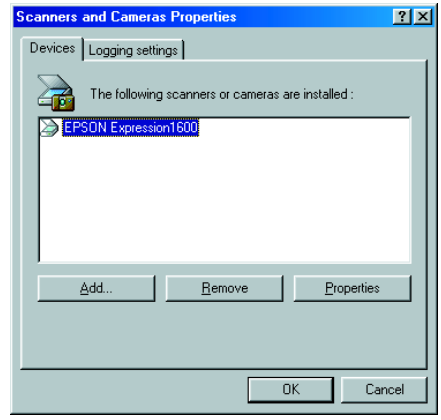



If you're running Windows 95 or Windows NT 4.0, go to "Windows 95 and Windows NT" on page 62. If you have a Macintosh, go to "Macintosh" on page 63.

### Windows 98

Follow these steps to assign an application to the Start button:

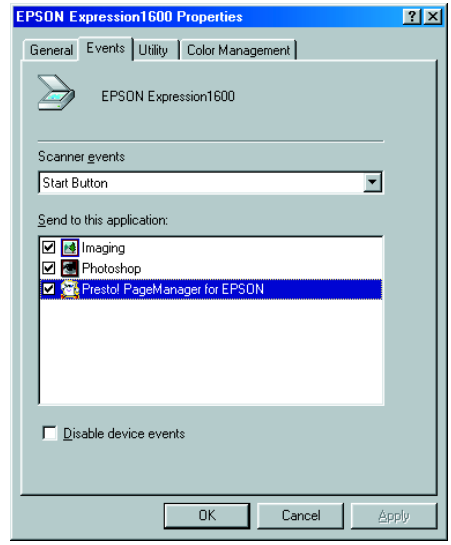
1. Double-click the **Scanners and Cameras** icon in the Windows Control Panel.
2. Select **EPSON Expression1600** and click the **Properties** button.



3. Click the **Events** tab. You see the window to the right.

4. Make sure **Start Button** appears in the **Scanner events** box, then deselect any applications you don't want to use in the **Send to this application** list. When you finish, a check should appear only beside the application that you want to assign to the ⇗ Start button.

5. Click **OK** to close the EPSON Expression 1600 Properties window, then click **OK** again to close the Scanners and Cameras Properties window.




Note

You can disable the ⇗ Start button by clicking the Disable device events checkbox on the Events tab.

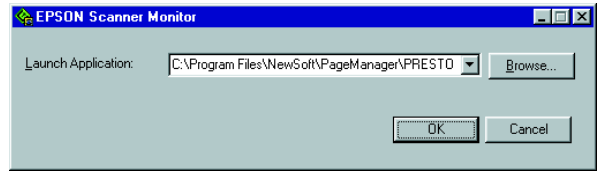
Whenever you press the scanner's ⇗ Start button, the application you assigned launches. If you assigned Presto! PageManager, it automatically starts EPSON TWAIN Pro. If you assigned another application, you must start EPSON TWAIN Pro manually.

## *Windows 95 and Windows NT*

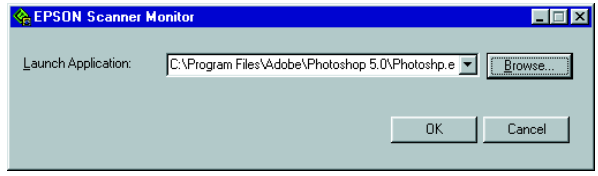
You don't need to assign an application to the ⇗ Start button if you want it to automatically launch Presto! PageManager. If you want it to launch a different application, follow these steps:

1. Click the Scanner Monitor icon located on your Windows taskbar.

2. Select **Preferences**. You see the EPSON Scanner Monitor window.



3. Do one of the following:
   - Choose an application in the Launch Application list.
   - Browse to another application on your hard drive. Select the application and click Open to close the Browse window. Your application's path appears in the Launch Application box.




4. Click OK to close the EPSON Scanner Monitor window and save your setting.

Whenever you press the scanner's Start button, the application you assigned launches. You can then start EPSON TWAIN Pro.

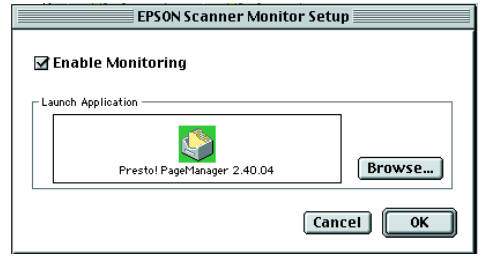
Note

Only Presto! PageManager automatically starts EPSON TWAIN Pro. If you assign another application to the Start button, you must start your scanner driver manually.

## Macintosh

You don't need to assign an application to the Start button if you want it to automatically launch Presto! PageManager. If you want it to launch a different application, follow these steps:

1. Select EPSON Scanner Monitor Setup in the Apple menu. You see the window to the right.
2. Browse to the application you want to use and open it. When your application's icon appears in the Launch Application box, click OK.




Whenever you press the scanner's Start button, the application you assigned launches. You can then start EPSON TWAIN Pro.

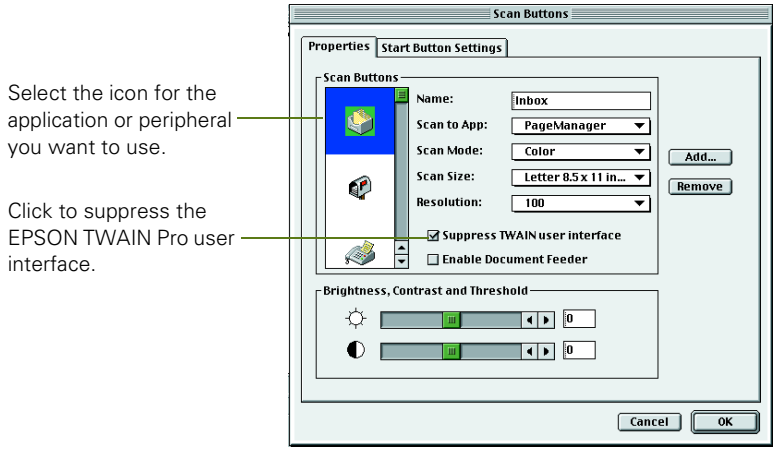
Only Presto! PageManager automatically starts EPSON TWAIN Pro. If you assign another application to the ⇳ Start button, you must start your scanner driver manually.

## Setting Up Presto! PageManager for One-Touch Scanning

You can set up Presto! PageManager to send your image directly to another application or utility, such as TextBridge Classic or a fax utility, or to a peripheral device such as a printer. You can suppress the EPSON TWAIN Pro user interface so the scanner uses the settings assigned in this procedure. If you use this shortcut, faxing or printing an image could be as easy as pressing the scanner's ⇳ Start button.

Follow these steps:

1. Start Presto! PageManager and select **Scan Buttons Setting** from the File menu. The Scan Buttons window opens.
2. You see an icon for your default printer, fax program, e-mail program, and other applications in the **Scan Buttons** box. Click the icon you want to highlight to see its settings.



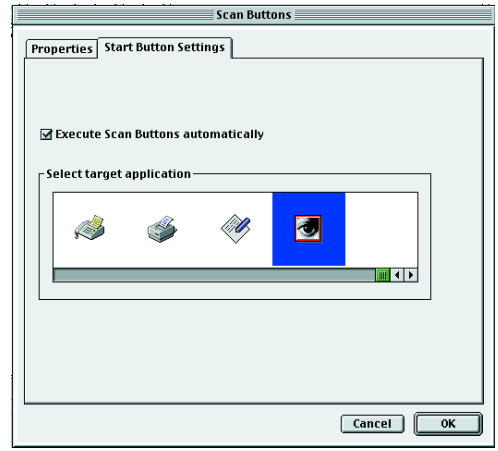

3. Click the **Suppress TWAIN user interface** checkbox to select it. The settings for your scan become active.

4. Choose the **Scan Mode**, **Scan Size**, and **Resolution**. If you plan to use the automatic document feeder, select **Enable Document Feeder**. Make any other settings you want.

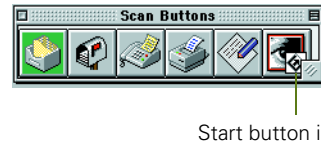
   These are the default settings that will be used whenever you press the scanner's ◇ Start button. Choose settings that you can use for most of the scans you initiate with one-touch scanning.

5. Click the **Start Button Settings** tab.

6. Scroll the **Select target application** box until you see the icon for your printer or program. (Programs or printers you added appear to the right.) Select the icon and click **OK** to assign it to the ◇ Start button.




A ◇ Start button icon appears next to the selected icon in Presto! PageManager's Scan Buttons Palette. Now you can copy, fax, e-mail, or scan by simply pressing the ◇ Start button.

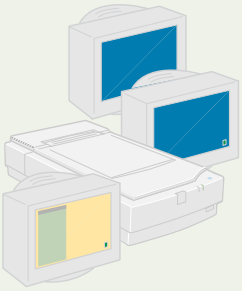


Start button icon

Note

You can only assign one function at a time to the ◇ Start button.

# Chapter 4
# Network Scanning



You can use EPSON Scan Server and EPSON TWAIN Pro Network, two applications on your EPSON Expression 1600 Scanning Tools CD-ROM, to share your scanner with other users in a small workgroup.

Your network must have a scanner server (the Windows computer connected to the scanner) and one or more client computers. Only one client computer at a time can connect to the scanner server and access the scanner. However, you can have more than one scanner and scanner server on a network, so clients can choose which scanner to use.

Here are some other requirements for sharing a scanner:

- The scanner server must be an IBM/AT compatible computer running Windows 95, Windows 98, or Windows NT 4.0 (Windows NT 4.0 is recommended).
- Client computers can be running Windows 95, Windows 98, Windows NT 4.0, or Macintosh System 7.6.1 or later.
- Both the client computers and the scanner server must have a network interface card installed, and must be running the TCP/IP protocol (see Appendix B for instructions on installing the TCP/IP protocol).
- EPSON Scan Server must be installed on the scanner server, and EPSON TWAIN Pro Network must be installed on client computers.

This chapter includes the following:

- How to install, set up and start EPSON Scan Server on the scanner server
- How to install and start EPSON TWAIN Pro Network on client computers
- How to begin a scan from the client computer, the scanner server, or the scanner's ⟡ Start button
- How to stop a scan in progress.

# Setting Up the Scanner Server

You can set up any Windows 95, Windows 98, or Windows NT 4.0 computer as a scanner server, as long as it has a network interface card installed and is running the TCP/IP protocol.

Before you begin, make sure to unlock the scanner and connect it to the scanner server (see Chapter 2, "Setting Up Your Scanner," for details). If you don't have the TCP/IP protocol installed on the scanner server, see Appendix B, "Installing the TCP/IP Protocol."

Follow the instructions for your operating system:

- If you're running Windows 98, continue with the next section, "Installing the Scanner Server Software on Windows 98."
- If you're running Windows 95 or NT 4.0, go to "Installing the Scanner Server Software on Windows 95 and Windows NT 4.0" on page 74.

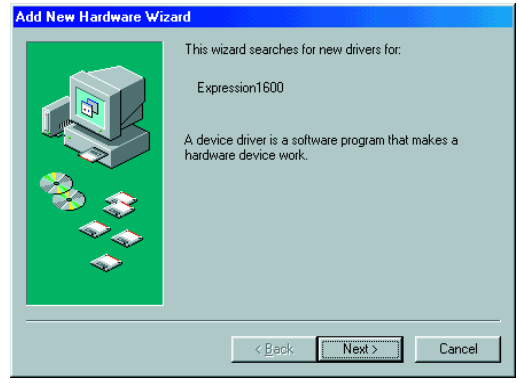
## *Installing the Scanner Server Software on Windows 98*

Depending on how your computer system was originally set up, you may be asked to insert your Windows 98 CD-ROM during driver installation. Make sure you have it available, or know where to find the Windows source files on your hard disk (for example, in the Windows 98 folder). If you need help, contact your computer manufacturer.

Note

If you've just installed a SCSI interface card, you may be asked to install a SCSI driver at the beginning of installation. Follow the instructions on the screen to install the best driver, then continue with the scanner server installation.

1. Turn on the scanner, and then turn on your computer. When you see the window on the right, click **Next**.




2. Insert the EPSON Expression 1600 Scanning Tools CD-ROM in your drive.

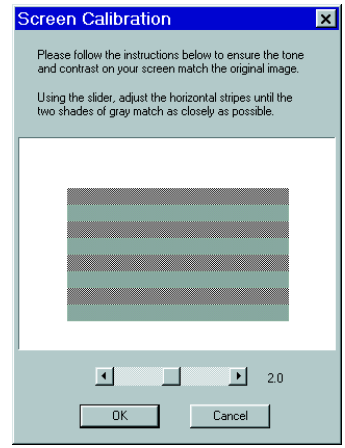
3. Select **Search for the best driver for your device**, and click **Next**.

4. Select **Specify a location**, then browse to **EPSON\English\Win98** on your CD-ROM drive. Click **OK** to close the Browse window, and then click **Next**. (The example to the right uses "G" as the CD-ROM drive letter. Your CD-ROM drive letter may be different.)

5. Follow the instructions on the screen to complete the driver installation.

   If you see a message asking for your Windows CD-ROM, insert it and click **OK**, or browse to the Windows source files on your hard drive. When prompted for the EPSON Scanners Driver Disk 1, reinsert your EPSON Expression 1600 Scanning Tools CD-ROM.

6. When you see the EPSON Screen Calibration Utility, move the slider right or left until the stripes match as closely as possible. Then click **OK**.




Note

The EPSON Screen Calibration Utility calibrates the preview image you see in your EPSON TWAIN Pro driver to match your monitor settings.

You won't need to change the screen calibration as long as you continue to use the same display. If you need to recalibrate your screen at a later time, double-click the Scanners and Cameras icon in your Windows Control Panel to open the Scanners and Cameras Properties window. In the Devices tab, make sure EPSON Expression1600 is selected, and then click the Properties button to display the EPSON Expression 1600 Properties window. Click the Utility tab, and then click the Screen Calibration Utility button.

7. When installation is complete, click **Finish**.

Continue with the instructions in the next section, "Finishing the Scanner Server Installation on Windows 98."

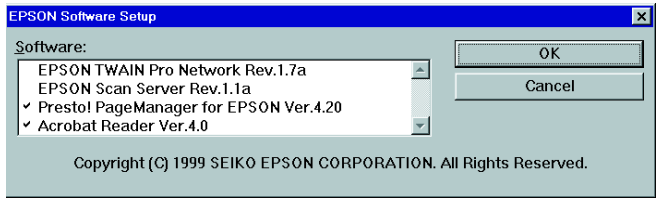
## *Finishing the Scanner Server Installation on Windows 98*

Before your computer can share its scanner, you must install EPSON Scan Server. At the same time, you can install other software that came with your scanner. Your scanner comes with a single-user license for Presto! PageManager, TextBridge Classic, Adobe Photoshop 5.0 LE, and MonacoEZcolor. If you want to install these applications on additional computers, please contact the software manufacturer to purchase additional licenses.

1. Double-click the **My Computer** icon on your Windows desktop, then double-click the **Epson** CD-ROM icon to display the Select Language window. (If the window doesn't appear when you double-click the CD-ROM icon, double-click the **Cdsetup** icon.)

2. Make sure that **English** is selected, then click **OK**. You see the EPSON Software Setup window.

3. Click **Add Software**. The software selection window appears.




4. Select **EPSON Scan Server**. (A check mark appears beside applications selected for installation.) Click to select other software you want to install, or deselect software that you don't want. Then click **OK**.

Note

You don't need to install EPSON TWAIN Pro Network to use the scanner connected to your computer— use EPSON TWAIN Pro instead. EPSON TWAIN Pro is automatically installed when you install the scanner server software. Only install EPSON TWAIN Pro Network if you want to use an Expression 1600 attached to another computer.

5. Follow the instructions on the screen to install EPSON Scan Server and any other software you selected in the software selection window.

Note

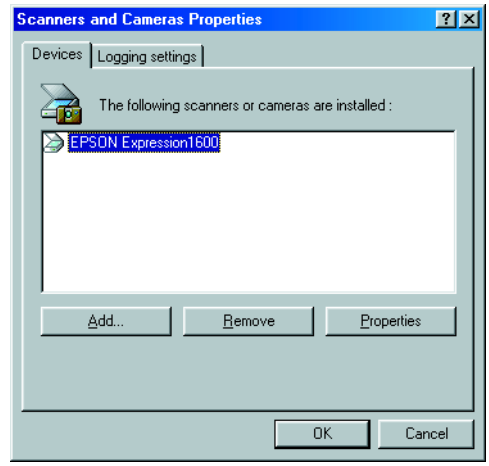
If you're installing EPSON TWAIN Pro Network in order to use a scanner attached to another computer, you'll see a window that asks for the Network Scanner Address (the scanner server's IP address). Enter the IP address for the computer you want to connect to (see page 84 for instructions).

6. Follow the instructions in "Installing Additional Windows Software" on page 45 if you want to install TextBridge Classic, Adobe Photoshop 5.0 LE, or MonacoEZcolor.
7. When you're done installing software, restart your computer. Then follow the instructions in "Testing the Scanner's Operation (Windows 98)" on page 35 to make sure the scanner is operating properly.

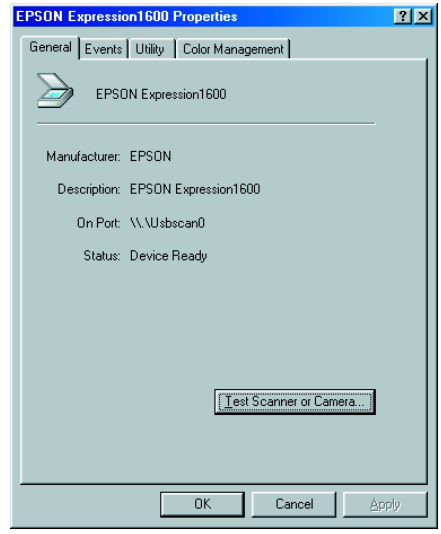
## *Setting Up the Default Scanner on Windows 98*

If you have more than one scanner connected to your scanner server, you can set up the Expression 1600 as the default scanner.

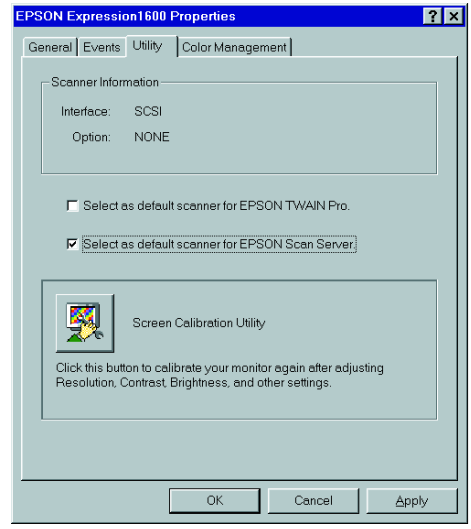
1. Double-click the Scanners and Cameras icon in your Windows Control Panel to open the Scanners and Cameras Properties window.




2. Select EPSON Expression 1600, if necessary, and click the Properties button. You see the EPSON Expression 1600 Properties window.



3. Click the **Utility** tab. Make sure **Select as default scanner for EPSON Scan Server** is checked, and then click **OK**.




## *Installing the Scanner Server Software on Windows 95 and Windows NT 4.0*

Before you begin, make sure the scanner is connected to your computer.

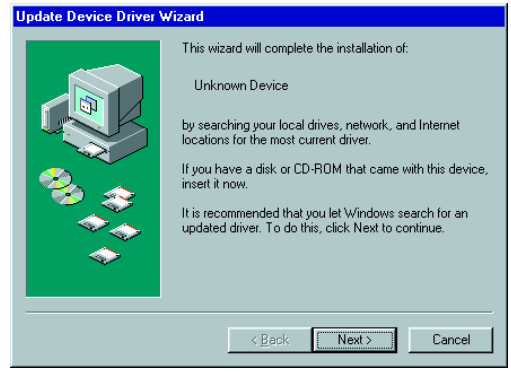
If you've just installed a SCSI interface board in your computer, you may be asked to install a SCSI driver at the beginning of the software installation. Make sure you have your Windows CD-ROM available, or know where to find the Windows source files on your hard drive. Then follow the instructions on the screen to install the SCSI driver. If you need help locating your Windows source files, contact your computer manufacturer.

If you're running Windows 95, continue with the instructions in the next section. If you're running Windows NT 4.0, go to "Starting the Scanner Server Installation on Windows NT 4.0" on page 77.

## *Starting the Scanner Server Installation on Windows 95*

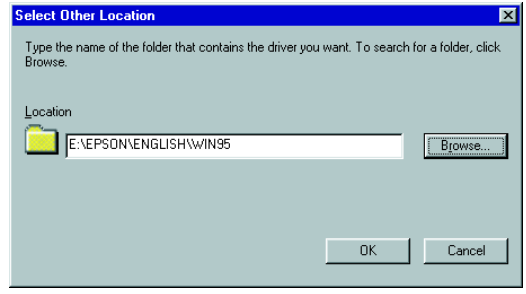
Follow these steps to install the scanner driver and begin software installation:

1. Turn on your scanner first, then turn on your computer. When you see the window on the right, click **Next**.




2. Insert the EPSON Expression 1600 Scanning Tools CD-ROM in your drive and click **Other Locations**.

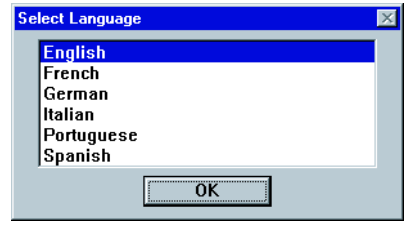
3. Browse to the following location on your CD-ROM drive: **EPSON\English\Win95**. Click **OK** to close the Browse window, then click **OK** again. (The example on the right uses "E" as the CD-ROM drive letter. Your CD-ROM drive may have a different letter.)



4. When you see this window, click **Finish**.

5. Double-click the **My Computer** icon on your Windows desktop.

6. Double-click the **Epson** CD-ROM icon. You see the Select Language window. (If you don't see this window, double-click the **Cdsetup** icon.)




7. Make sure that **English** is selected, then click **OK**. You see the EPSON Software Setup window.

8. Click **Add Software**.

   Continue with the instructions in "Finishing the Scanner Server Installation (Windows 95 and Windows NT 4.0)" on page 78.

## *Starting the Scanner Server Installation on Windows NT 4.0*

Follow these steps to begin the scanner server installation:

1. Turn on your scanner first. Then turn on the scanner server.
2. Log onto Windows NT. Then insert your EPSON Expression 1600 Scanning Tools CD-ROM in your drive.
3. When you see the Select Language window, make sure English is selected, and then click OK.

   If the Select Language window doesn't appear, double-click the My Computer icon on your desktop, then double-click the Epson CD-ROM icon. (If the Select Language window still doesn't appear, double-click the Cdsetup icon.)
4. Click the Add Software button. The software selection window appears.

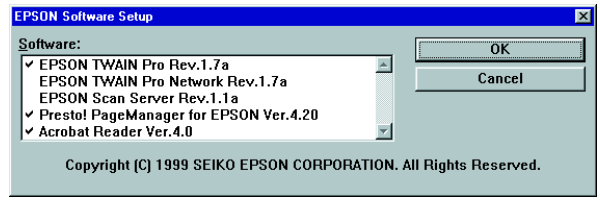
   

   Continue with the instructions in the next section to finish installing the scanner server software.

## *Finishing the Scanner Server Installation (Windows 95 and Windows NT 4.0)*

Before your computer can share its scanner, you must install EPSON Scan Server. At the same time, you can install other software that came with your scanner. Your scanner comes with a single-user license for Presto! PageManager, TextBridge Classic, Adobe Photoshop 5.0 LE, and MonacoEZcolor. If you want to install these applications on additional computers, please contact the software manufacturer to purchase additional licenses.

1. Select **EPSON Scan Server**. (A check mark appears beside selected applications.) Click to select other software you want to install, or deselect software that you don't want. Then click **OK**.

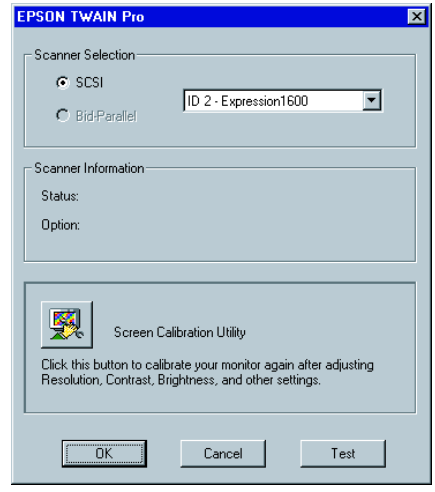



Note

Use EPSON TWAIN Pro to scan from the Expression 1600 connected to your computer. Only install EPSON TWAIN Pro Network if you want to use an Expression 1600 attached to another computer.

2. If you're not installing EPSON TWAIN Pro, go to step 5.

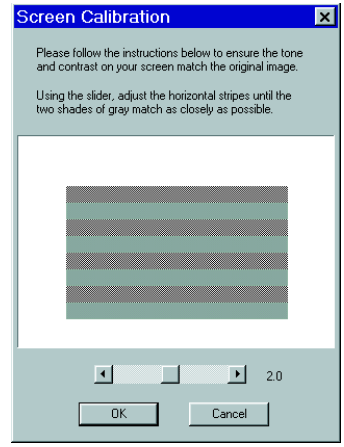
   If you're installing EPSON TWAIN Pro, follow the instructions on the screen. When you see the window on the right, make sure **SCSI** and **Expression1600** are selected under **Scanner Selection**.



If you're installing EPSON TWAIN Pro Network in order to use a scanner attached to another computer, you'll see a window that asks for the Network Scanner Address (the scanner server's IP address). Enter the IP address for the scanner server you want to connect to. See page 84 for instructions. Then continue with step 4 below.

3. Click **Test** to check scanner operation. If the scanner is communicating with your computer, you see **Status: Device Ready** under **Scanner Information**. Click **OK** to close the window.

4. When you see the EPSON Screen Calibration Utility, move the slider right or left until the stripes match as closely as possible. Then click **OK**.

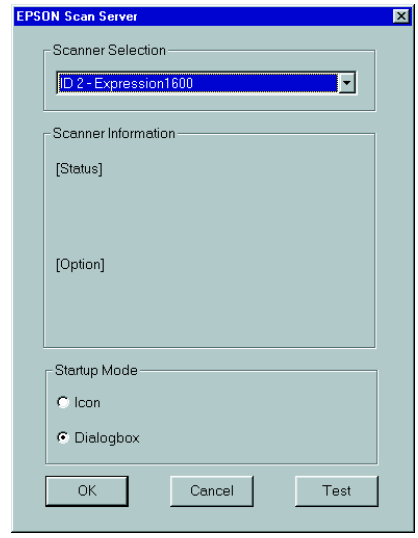



The EPSON Screen Calibration Utility calibrates the preview image you see in your EPSON TWAIN Pro driver to match your monitor settings.

You won't need to change the screen calibration as long as you continue to use the same display. If you need to recalibrate your screen at a later time, open the EPSON TWAIN Pro window by double-clicking the EPSON TWAIN Pro icon in the Windows Control Panel. Click the Screen Calibration button at the bottom of the window to start the utility.

5. Follow the instructions on the screen to install EPSON Scan Server. When you see the window on the right, make sure **Expression1600** is selected under **Scanner Selection**. Select either **Icon** or **Dialogbox** as the scanner server **Startup Mode**. (See "Changing the Scanner Server Start Up Mode" on page 81 for details.)

6. Click **Test** to test scanner operation. **OK. Scanner Available** appears under **Scanner Information** if the scanner is communicating with the scanner server. Click **OK** to close the window.




Note

If you want to share a different network scanner with client computers, you can access the EPSON Scan Server window at any time by double-clicking the EPSON Scan Server icon in the Windows Control Panel. Then select the scanner you want in the Scanner Selection list.

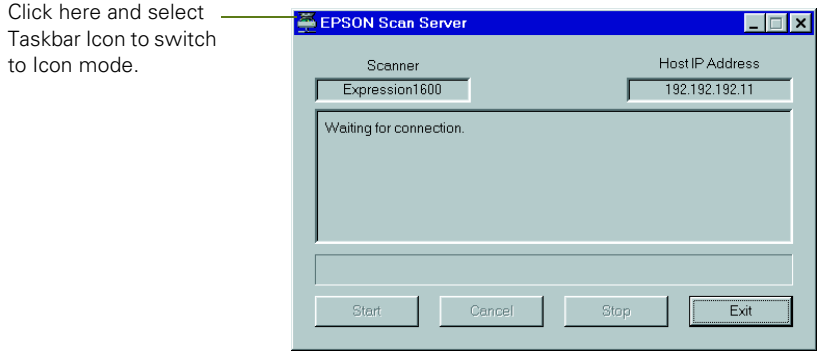
7. Follow the instructions on the screen to complete installation of any other software you've selected in the software selection window.

8. Follow the instructions in "Installing Additional Windows Software" on page 45 if you want to install TextBridge Classic, Adobe Photoshop 5.0 LE, or MonacoEZcolor. When you're done installing software, restart your computer.

## Changing the Scanner Server Start Up Mode

When you installed the software, you set up the scanner server to start in either Dialog Box mode or Icon mode.

In Dialog Box mode, the following dialog box appears whenever you start EPSON Scan Server. (The message Waiting for connection in the status area indicates that the scanner is waiting for a connection to a client computer.)




In Icon mode, the EPSON Scan Server icon appears on the Windows taskbar when you start EPSON Scan Server.

- To change from Dialog Box mode to Icon mode, click the scanner icon in the upper left corner of the dialog box and select Taskbar Icon from the list.
- To change from Icon mode to Dialog Box mode, right-click the EPSON Scan Server icon on the taskbar and click Taskbar Icon to deselect it.

Your setting takes effect when you exit and restart EPSON Scan Server. See "Starting EPSON Scan Server" on page 89 for instructions on restarting EPSON Scan Server.

Note

Make sure no client computer is connected to the scanner server when you exit EPSON Scan Server.

# Setting Up Client Computers

To set up a client computer, you'll need to know the IP address or host name of the scanner server. Also, make sure the TCP/IP protocol is installed (see Appendix B, "Installing the TCP/IP Protocol," for instructions).

The TCP/IP protocol is preinstalled on newer Macintosh systems. If you have a Macintosh, just make sure that TCP/IP is enabled in your Extensions Manager.

## *Installing EPSON TWAIN Pro Network on Windows*

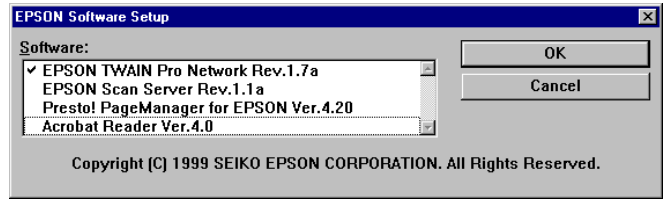
You must install EPSON TWAIN Pro Network on the client computer before the client can use the network scanner. At the same time, you can install other software that came with your scanner. Your scanner comes with a single-user license for Presto! PageManager, TextBridge Classic, Adobe Photoshop 5.0 LE, and MonacoEZcolor. If you want to install these applications on additional computers, please contact the software manufacturer to purchase additional licenses.

1. Insert the EPSON Expression 1600 Scanning Tools CD-ROM in the CD-ROM drive. If the Select Language window doesn't appear, double-click the My Computer icon on your desktop, and then double-click the Epson CD-ROM icon.

If you still don't see the Select Language window, double-click the Cdsetup icon.

2. Make sure English is selected and click OK. The EPSON Software Setup window appears.

3. Click Add Software. You see the software selection window.




4. Make sure EPSON TWAIN Pro Network is selected. If you want to install them, select Presto! PageManager for EPSON and Acrobat Reader. (A check mark appears beside selected applications.) Then click OK.

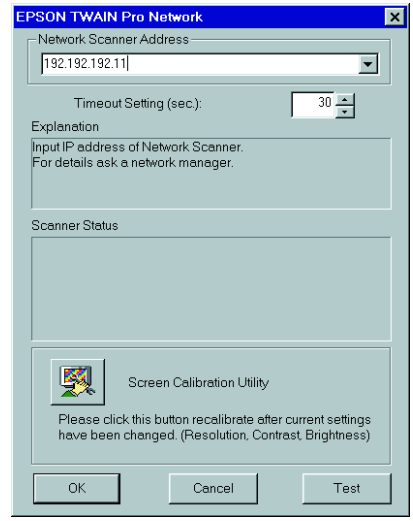
Note

Your license allows you to install Presto! PageManager on one computer in your network. Contact the manufacturer if you want to purchase additional licenses.

5. Follow the instructions on the screen to continue the installation. When you see the window to the right, enter the IP address or host name of the scanner server in the Network Scanner Address box.

   You can only use host names if you have a WINS or DNS server on your network.

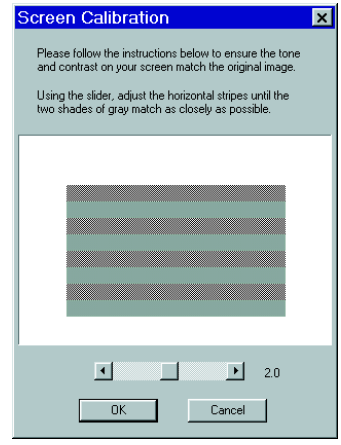
6. Click Test to test the connection. If your computer is communicating with the scanner server and the scanner is on, you see a message that the scanner is available. Click OK to save your settings.




Note

If you need to connect to a different network scanner or change the timeout setting, you can open the EPSON TWAIN Pro Network window anytime by double-clicking the EPSON TWAIN Pro Network icon in the Control Panel. You can enter up to five IP addresses or host names in the Network Scanner Address box.

7. Follow the instructions on the screen. When you see the EPSON Screen Calibration Utility, move the slider right or left until the stripes match as closely as possible. Then click OK.
8. Follow the instructions on the screen to complete installation of any other software you've selected.
9. Follow the instructions in "Installing Additional Windows Software" on page 45 if you want to install Adobe Photoshop 5.0 LE, TextBridge Classic, or MonacoEZcolor.
10. When you're done installing software, restart your computer.



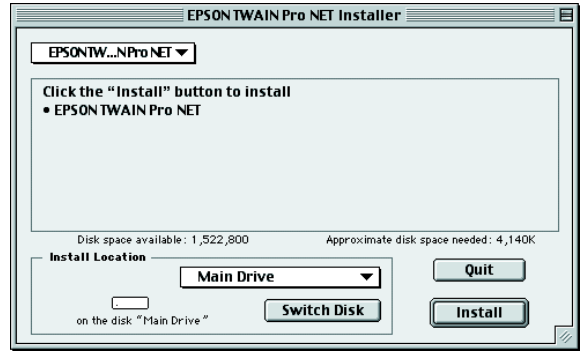
The EPSON Screen Calibration Utility calibrates the preview image you see in your EPSON TWAIN Pro driver to match your monitor settings.

You won't need to change the screen calibration as long as you continue to use the same display. If you need to recalibrate your screen at a later time, open the EPSON Pro Network window by double-clicking the EPSON TWAIN Pro Network icon in the Control Panel. Then click the Screen Calibration button at the bottom of the window to start the utility.

## Installing EPSON TWAIN Pro Network on a Macintosh

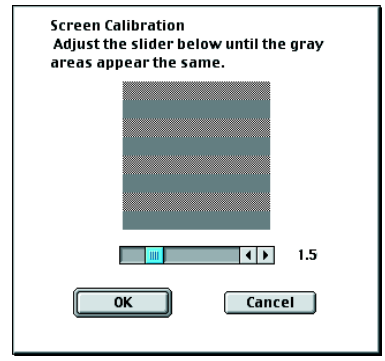
You can install EPSON TWAIN Pro Network on all of the computers in your workgroup. Your scanner comes with a single-user license for Presto! PageManager, TextBridge Classic, Adobe Photoshop 5.0 LE, and MonacoEZcolor. If you want to install these applications on additional computers, please contact the software manufacturer to purchase additional licenses.

1. Insert the EPSON Expression 1600 Scanning Tools CD-ROM in your drive.
2. Double-click the EPSON TWAIN Pro Network folder, and then double-click the English folder.
3. Double-click the EPSON TWAIN Pro NET Installer icon. You see the screen to the right.
4. Click Install and follow the instructions on the screen. When you see a message that software was successfully installed, click Quit.



You see the EPSON Screen Calibration Utility.

5. Move the slider right or left until the stripes match as closely as possible. Then click **OK**.



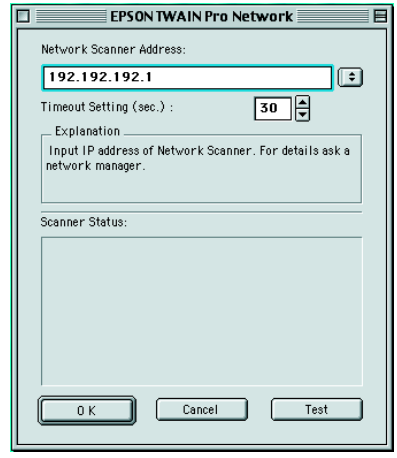

Note

The EPSON Screen Calibration Utility calibrates the preview image you see in your EPSON TWAIN Pro driver to match your monitor settings.

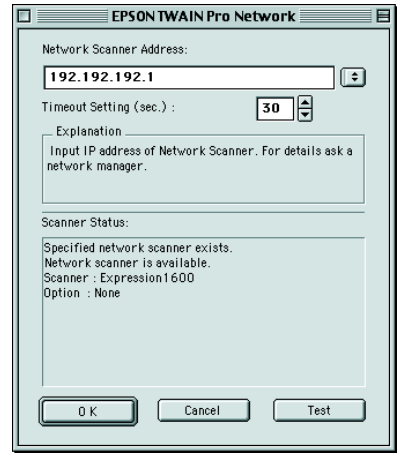
You won't need to change the screen calibration as long as you continue to use the same display. If you need to recalibrate your screen at a later time, double-click the EPSON Network Scanner folder on your hard drive, then double-click the EPSON Screen Calibration icon.

6. When you see the screen on the right, enter the IP address or host name of the scanner server in the **Network Scanner Address** box.

   (You can only use a host name if you have a DNS server on your network.)



7. Click Test to test the connection. You see a message that the scanner is available in the Scanner Status section of the window. Click OK to save your settings.
8. Follow the instructions in "Installing Other Software on Your Scanning Tools CD-ROM" on page 49 to install these applications.
9. Follow the instructions beginning on page 50 if you want to install Adobe Photoshop 5.0 LE and MonacoEZcolor.
10. When you're done installing software, restart your computer.




Note

If you need to connect to a different network scanner or change the timeout setting, you can open the EPSON TWAIN Pro Network window anytime by selecting Control Panels from the Apple menu, then selecting EPSON TWAIN Pro Net. You can enter up to five IP addresses or host names in the Network Scanner Address box.

# Using a Network Scanner

Network scanning involves the following steps:

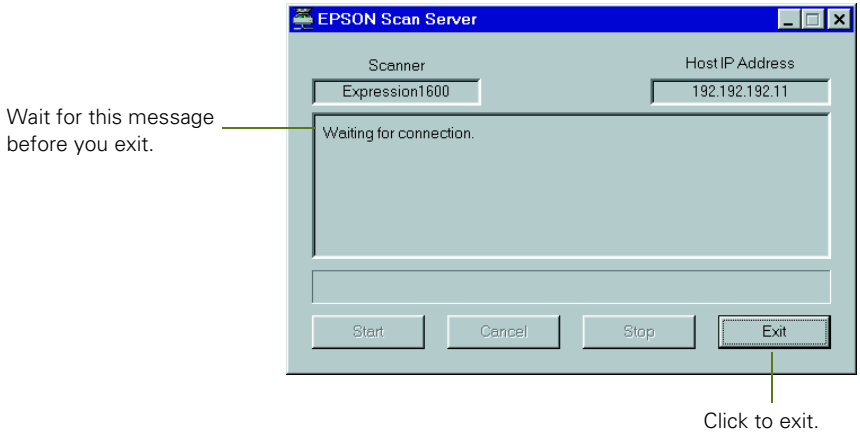
- The scanner server must be turned on and running EPSON Scan Server.
- From the client computer, start EPSON TWAIN Pro Network to establish a connection to the scanner server. Only one client computer at a time can connect to the scanner server. (See "Starting EPSON TWAIN Pro Network" on page 90 for instructions.)
- Choose the Image Type, Resolution, and other settings you want for your scan. (See Chapter 3, "How to Scan," for more information about choosing settings.)
- Place your first image on the document table (or in the optional automatic document feeder or one of the optional transparency unit's film guides).
- Start the scan. Although this can be done from EPSON TWAIN Pro Network on the client computer, it may be more convenient to press the scanner's ◇ Start button or to start the scan from the scanner server. Then you can scan several images with a single trip to the scanner.
- If you want to scan more than one image, place your second image on the document table and press the scanner's ◇ Start button again. Repeat this step for every image you want to scan. (The settings you chose for the first image apply to these images too.)
- When you return to the client computer, your scanned images appear in the host application's window. Close EPSON TWAIN Pro Network to end your connection to the scanner server and allow other client computers to use the scanner.

Some applications, such as Adobe Photoshop 5.0 LE, automatically close the client computer's connection to the scanner server when you press the ◇ Start button. You can't use the ◇ Start button to scan multiple images if you're using these applications.

## Starting EPSON Scan Server

EPSON Scan Server starts automatically whenever the scanner server is turned on. When EPSON Scan Server is running, you'll see either the EPSON Scan Server dialog box, or the EPSON Scan Server icon on the Windows taskbar. If you need to start EPSON Scan Server manually, click **Start**, **Programs**, **EPSON Scan Server**, and then select **EPSON Scan Server**.

You can quit EPSON Scan Server at any time. Just click the **Exit** button on the EPSON Scan Server dialog box.




Note

Before you quit, make sure no client computers are trying to use the scanner. Don't exit if the status area of the EPSON Scan Server dialog box indicates that you are connecting to a client. Wait until you see the message Waiting for connection.

If you installed EPSON TWAIN Pro on the scanner server so that you could make a direct connection to the scanner, remember that you must exit EPSON Scan Server to use EPSON TWAIN Pro. EPSON Scan Server disables EPSON TWAIN Pro.

## Starting EPSON TWAIN Pro Network

You connect to the scanner server by starting EPSON TWAIN Pro Network from the client computer. Follow these steps:

1. Start your host application.
2. Select EPSON TWAIN Pro Network as your source, or scanner driver. (You only need to do this step once.)

   For example, if you're running Windows and using Presto! PageManager for EPSON as your host application, choose **Select Source** from the File menu. In the Select Source window, choose **EPSON TWAIN Pro Network** and click **Select**.

   If you have a Macintosh and are using Presto! PageManager for EPSON, click **File**, **Select Source**, then **Select TWAIN Source**. In the Select a source window, select the **EPSON TWAIN Pro Network** icon and click **OK**.

The command you choose from the File menu differs from one host application to another. With other host applications, you might choose Import or Select TWAIN_32 Source, for example.

3. Start EPSON TWAIN Pro Network.

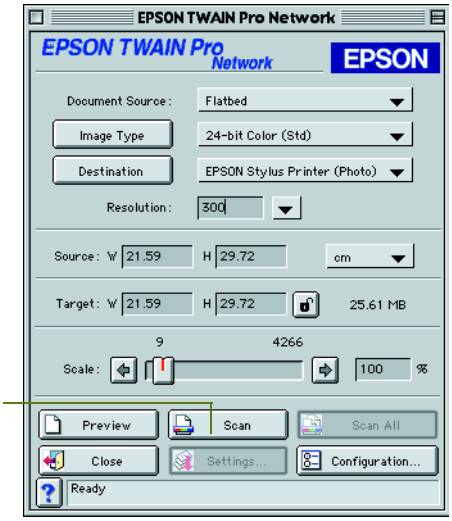
   If your host application is Presto! PageManager for EPSON, choose **Acquire** from the File menu. When EPSON TWAIN Pro Network starts, the EPSON TWAIN Pro Network main menu appears and you connect to the scanner server.

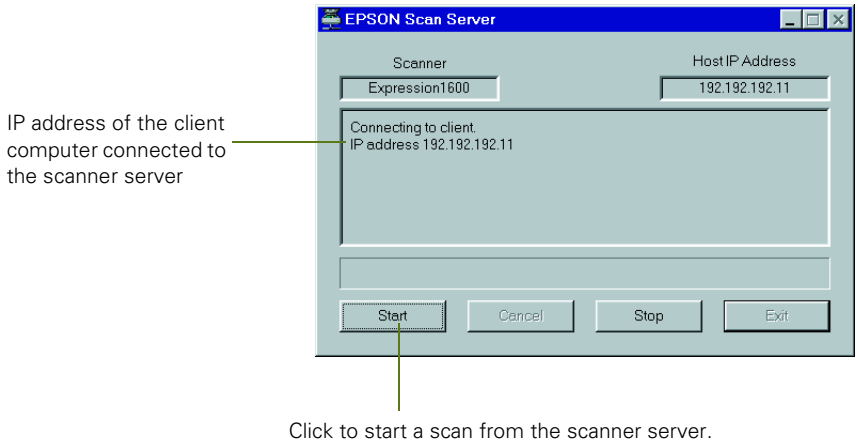
   Since the settings and controls for EPSON TWAIN Pro Network are the same as those for EPSON TWAIN Pro, see "Scanning with EPSON TWAIN Pro" on page 58 for general scanning instructions. For more detailed information about settings, see the *EPSON Expression 1600 Software Reference Guide* on your EPSON Expression 1600 Scanning Tools CD-ROM.

## Starting a Scan

You can start a scan on your network scanner in several ways:

- You can start EPSON TWAIN Pro Network on the client computer, make your scan settings, and click the **Scan** button on the EPSON TWAIN Pro Network main window. The scanned image is imported into your host application's window.
- You can press the ◇ Start button on the scanner to send the scanned image to the client computer that is currently connected to the scanner server.
- You can click the **Start** button on the EPSON Scan Server dialog box to send the scanned image to the client computer currently connected to the scanner server.




No matter how you start the scan, the client computer must be running EPSON TWAIN Pro Network to connect to the scanner server.

## Stopping a Scan in Progress

You can stop a scan in progress from either the client computer or the scanner server.

- To cancel a scan from the client computer, click the Cancel button on the Progress bar.
- To cancel from the scanner server, click the Cancel button at the bottom of the EPSON Scan Server dialog box.
- To break the connection between the client computer and the scanner server, click the Stop button on the EPSON Scan Server dialog box. This closes EPSON TWAIN Pro Network on the client computer and allows other client computers to connect to the scanner server.

# Chapter 5

# Using Optional Equipment



There are three options available for the EPSON Expression 1600: the transparency unit (B813182) the automatic document feeder (B813162), and the IEEE 1394 FireWire scanner interface card (B808342).

Note

If you have the Professional or Professional FireWire model of the EPSON Expression 1600, the transparency unit came with your scanner. If you have the Professional FireWire model, the IEEE 1394 FireWire scanner interface card was preinstalled in your scanner.

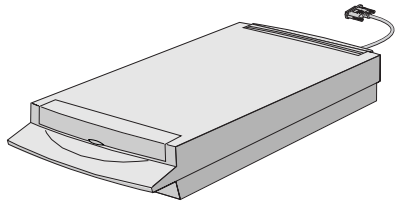
You can purchase these options from your reseller or from EPSON Accessories at (800) 873-7766 (U.S. sales only). In Canada, please call (800) 873-7766 for dealer referral. Or visit our web site at www.epsonsupplies.com (U.S. sales only).

## Transparency Unit

The transparency unit (B813182) allows you to scan transparent materials—35 mm slides, filmstrips, and film up to 8.5 × 11.7 inches (216 × 297 mm) in size. To switch between scanning transparent materials and normal reflective (paper) documents, simply insert or remove the reflective document mat that came with the unit. For instructions on using the reflective document mat, see “Scanning Reflective Documents” on page 101.

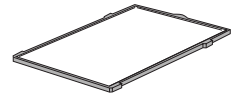
## Unpacking the Transparency Unit

Make sure that all of the following items are included in the transparency unit box. If any items are missing or damaged, contact your EPSON dealer, or contact EPSON at (562) 276-4382 (in the United States) or (905) 709-3839 (in Canada). Keep all the packing materials so you can use them for storage when you are not scanning transparencies.

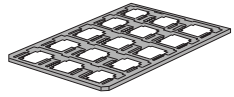


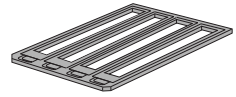
transparency unit

screws

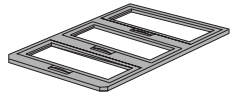


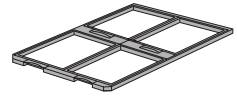
reflective document mat





film holders





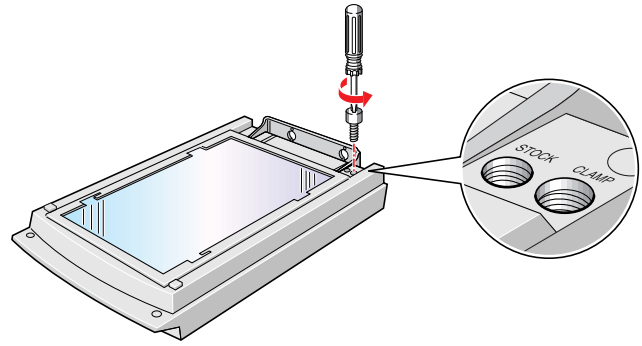
Note

Use the transparency unit's pocket to store the reflective document mat. Don't store anything else in the pocket.

## Removing the Shipping Screw

To prevent damage during shipping, a shipping screw is attached to the transparency unit to secure its lamp assembly. You must remove this screw before using the transparency unit.

1. Turn the transparency unit so the glass side faces up.
2. Use a Phillips head (cross head) screwdriver to remove the shipping screw from the hole labeled CLAMP, as shown at right.
3. Install the screw in the storage hole labeled STOCK.

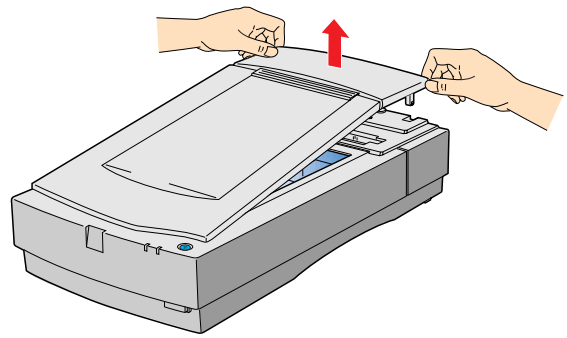



Before transporting the scanner, be sure to reinstall the shipping screw in the hole labeled CLAMP, and slide the transportation lock at the back of the scanner to the LOCK position.

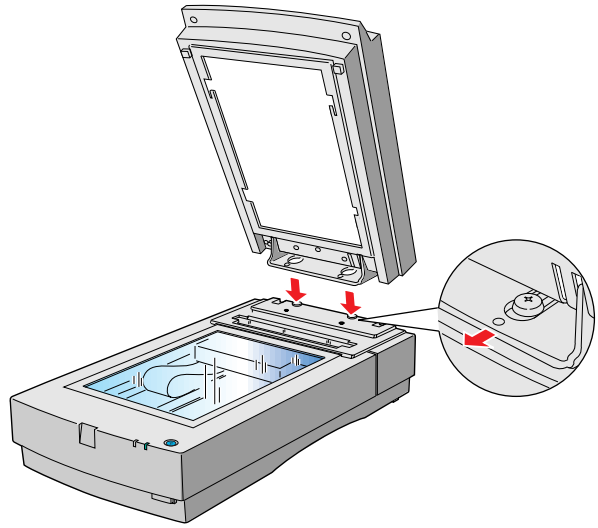
## Installing the Transparency Unit

Follow these steps to install the transparency unit on the scanner.

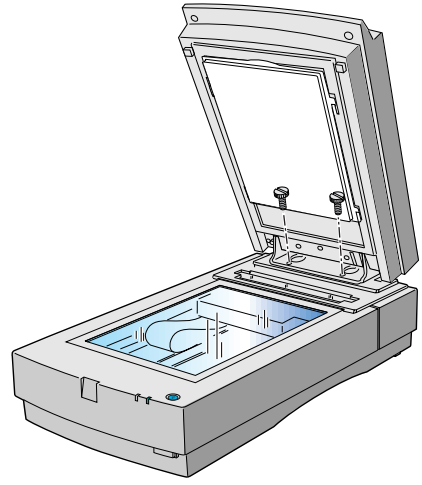
1. Make sure the scanner is turned off. Then unplug the power cable from the scanner.
2. Remove the document cover by grasping the back of the document cover as shown and easing the cover up.
3. Make sure the document table is clean and dust free.



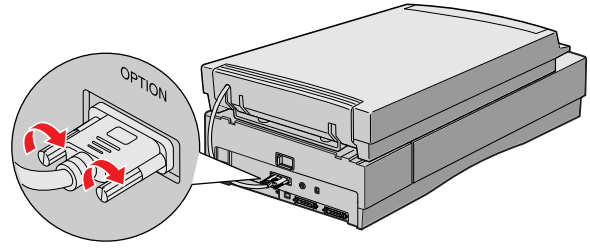
4. Position the slots on the transparency unit's mounting bracket over the heads of the two mounting screws located at the back of the scanner. Slide the transparency unit forward slightly until the two holes in front of these slots are aligned with the screw holes at the back of the scanner.



5. Insert the two installation screws that came with the transparency unit into the screw holes, then tighten the screws with a coin.



6. Gently close the transparency unit.
7. Attach the transparency unit connector to the OPTION connector at the back of the scanner. Tighten the attached screws to secure the connector.



If you haven't connected the scanner to your computer, continue with "Connecting the Scanner to Your Computer" on page 25. Then plug the scanner in and turn it on.

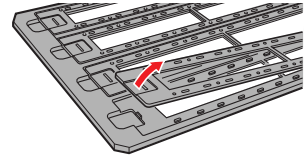
See "Step-by-Step Scanning Instructions" on page 57 for scanning instructions. For more detail on scanning with EPSON TWAIN Pro, see your electronic *EPSON Expression 1600 Software Reference Guide*.

## Using the Film Guides

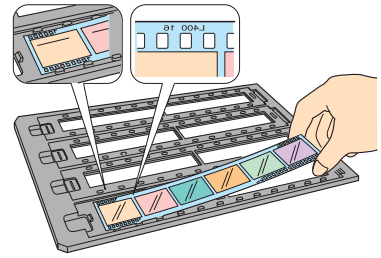
You can use the four film guides that came with the TPU to scan 35 mm slides, strips of 35 mm negative or positive film, 120-size or 220-size format film, and 4 × 5-inch film.

### Loading 35 mm film

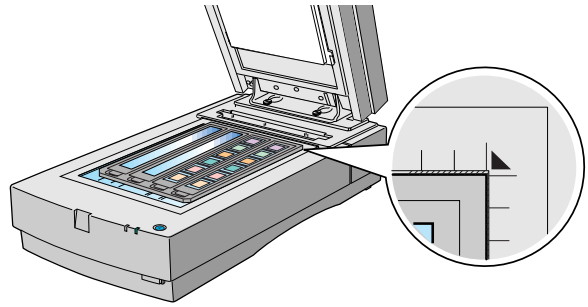
Follow these steps to load 35 mm positive or negative film:



1. Place the 35 mm filmstrip guide on a flat surface and remove the cover from one of the strip holders.
2. Insert a filmstrip in the holder, and then close the cover. The glossy (smooth) side of the film should be facing down, and the film emulsion layer should be facing up.
3. Repeat steps 1 and 2 for all the film strips you scan.



4. Place the 35 mm filmstrip guide on the document table, as shown. Make sure that the upper and right edges of the guide are aligned with the ruled edges of the document table.
5. Close the TPU and begin scanning.



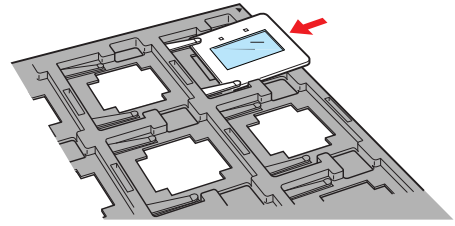
Note

Make sure to select TPU for Neg. Film or TPU for Pos. Film as your Document Source in EPSON TWAIN Pro.

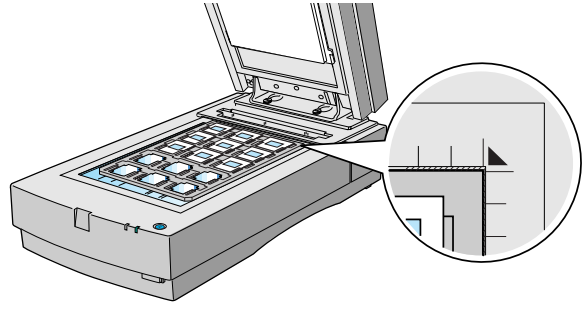
## Loading 35 mm slides

Follow these steps to load 35 mm slides:

1. Load slides in the 35 mm slide holder as shown. Make sure the glossy side of each slide faces down, and the film emulsion layer faces up.



2. Position the slide holder on the document table. The upper and right edges of the guide should be aligned with the ruled edges of the document table.
3. Close the TPU and begin your scan.



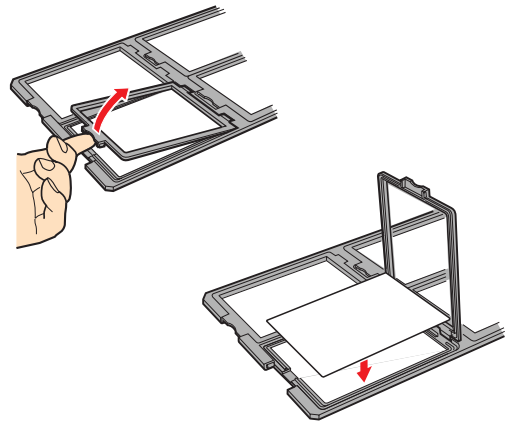
Note

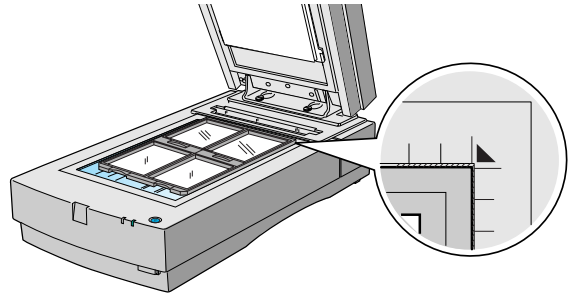
If you're using EPSON TWAIN Pro to scan, make sure to select TPU Pos as your document source.

## Loading 4 × 5-inch film

Follow these steps to load 4 × 5-inch film:

1. Place the 4 × 5-inch film guide on a flat surface and remove the cover from one of the film holders.
2. Insert the film in the film holder, making sure the glossy (smooth) side of the film faces down and the film emulsion layer faces up. Then close the cover.
3. Repeat steps 1 and 2 for all the film you scan.
4. Place the 4 × 5-inch film guide on the document table. Make sure the upper and right edges of the guide are aligned with the ruled edges of the document table.
5. Close the TPU and begin your scan.



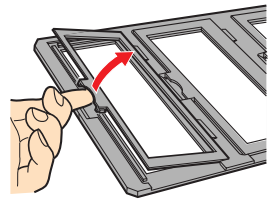


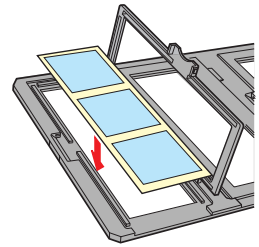
Note

If you're using EPSON TWAIN Pro to scan, make sure to select TPU Neg or TPU Pos as your document source.

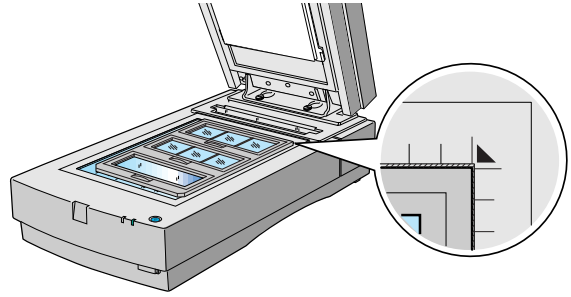
## Loading 120-size or 220-size (medium format) film

Follow these steps to load 120-size or 220-size format film:





1. Place the 120/220-size film guide on a flat surface and open the cover for one of the film holders.
2. Insert the film in the film holder, making sure the glossy (smooth) side of the film faces down, and the film emulsion layer faces up. Then close the cover.
3. Repeat steps 1 and 2 for all the film you scan.
4. Place the film guide on the document table. Align the upper and right edges of the guide with the ruled edges of the document table.
5. Close the TPU and begin your scan.



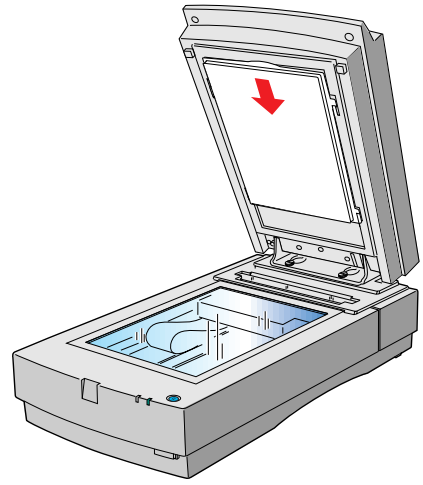
Note

If you're using EPSON TWAIN Pro to scan, make sure to select TPU Neg or TPU Pos as your document source.

## Scanning Reflective Documents

To scan reflective documents with the transparency unit installed, insert the reflective document mat included with the transparency unit.

1. Open the transparency unit. If there's a film guide on the document table, remove it.
2. Insert the tabs on the reflective document mat into the slots on the transparency unit and slide the mat down until the tabs are secure.
3. Place your document face down on the document table and close the transparency unit.
4. Scan according to instructions in "Step-by-Step Scanning Instructions" on page 57.



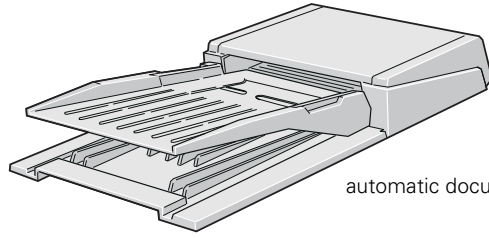
# Automatic Document Feeder

The automatic document feeder (B813162) allows you to automatically load multi-page documents into your scanner. This document feeder is particularly useful for OCR (optical character recognition) scanning, or for creating an image database. You can load up to 30 pages of 8.5 × 11-inch paper in the automatic document feeder.

## *Unpacking the Automatic Document Feeder*

When you unpack your automatic document feeder, make sure you have the parts shown below. If any items are missing or damaged, contact your EPSON dealer, or call EPSON at (562) 276-4382 (in the United States) or (905) 709-3839 (in Canada).

screws



automatic document feeder

## Installing the Automatic Document Feeder

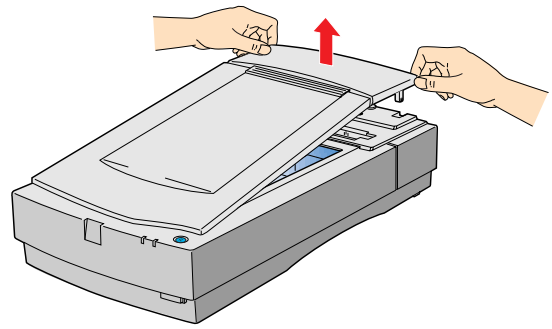
Don't remove the protective foam block from the mounting hardware until you've finished installing the automatic document feeder.

Note

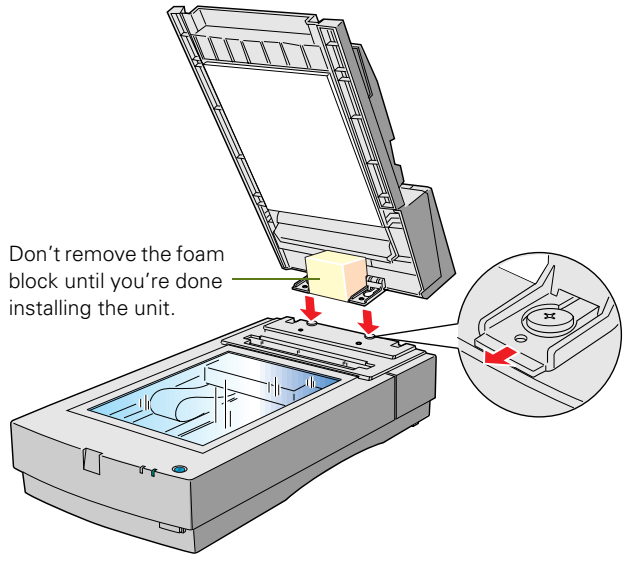
Because the automatic document feeder is heavy, you may want to have someone help you with this procedure.

Follow the steps below to install the automatic document feeder on your scanner:

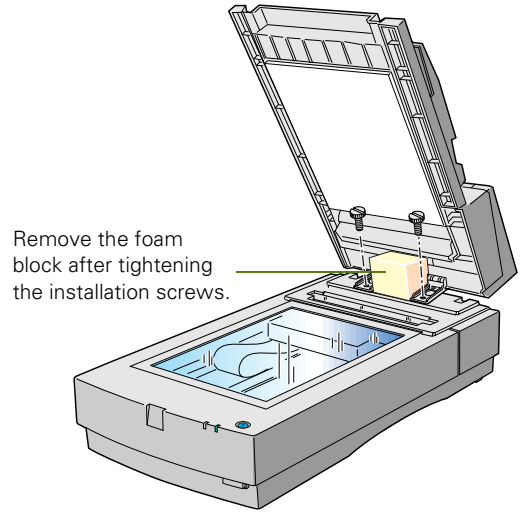
1. Make sure your scanner is turned off and unplug the cables.
2. Remove your scanner's document cover by grasping the back of the cover as shown and easing the cover up.
3. Make sure the document table is clean and dust free.



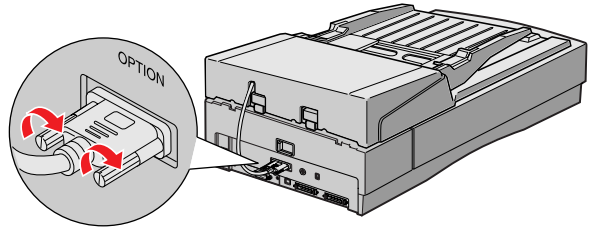
4. Position the automatic document feeder's mounting slots over the two mounting screws located at the back of the scanner. Slide the automatic document feeder forward slightly until the two holes in front of these slots are aligned with the screw holes at the back of the scanner.



5. Insert the two installation screws that came with the automatic document feeder into the screw holes, then tighten the screws with a coin.
6. Remove the protective foam block from the automatic document feeder's mounting hardware, and then gently close the automatic document feeder.




7. Attach the automatic document feeder's connector to the scanner's OPTION interface.
8. Reattach all the scanner cables.

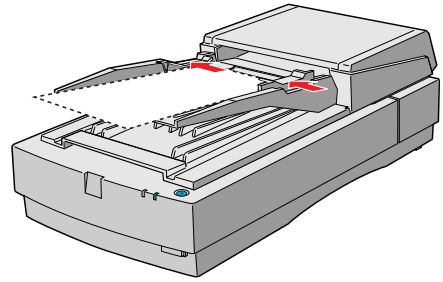



If you haven't connected the scanner to your computer, continue with "Connecting the Scanner to Your Computer" on page 25.

## Loading Paper in the Automatic Document Feeder

Your automatic document feeder can load up to 30 sheets of the following paper sizes: Letter, Legal, Checks (3.3 × 5 inches), A4 (8.27 × 11.7 inches), and B5 (7.17 × 10.1 inches). Follow these steps to load paper:

1. Slide the automatic document feeder's left edge guide all the way to the left.
2. Insert your document face up in the automatic document feeder. Feed it until it meets resistance. Then move the right edge guide so it touches the right edge of your paper.



Note

You can still load documents manually, if you want. Just lift the automatic document feeder and place the first sheet of your document face down on the document table.

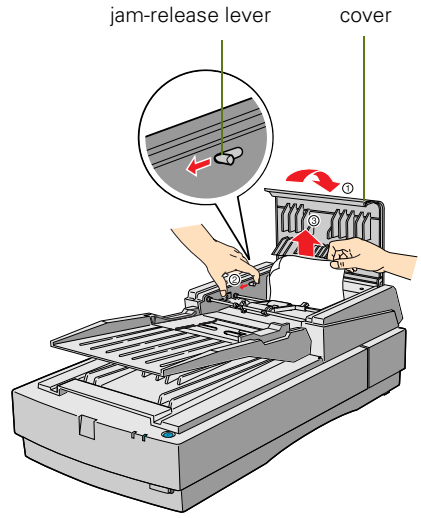
Make sure to select Auto Document Feeder as your Document Source in EPSON TWAIN Pro.

If you want to scan only part of the document area, load the first page of the document in the automatic document feeder. When you start EPSON TWAIN Pro and click the Preview button, the first page is ejected. You can adjust the marquee in the Preview area, and then load up to 30 pages of the document in the automatic document feeder. The Expression 1600 scans the area defined by the marquee on each page.

## *Fixing Paper Jams*

If a paper jam occurs, follow these steps to clear it:

1. Open the automatic document feeder's cover, as shown.
2. Pull forward on the jam-release lever, and slowly pull the jammed paper out of the feeder mechanism. Be careful not to tear the paper.
3. After removing the jammed paper, close the document feeder cover. Make sure the ERROR light is off and the READY light isn't flashing.




# IEEE 1394 FireWire Scanner Interface Card

To use the IEEE 1394 FireWire scanner interface card, your system must have either a built-in IEEE 1394 FireWire port or an IEEE 1394 FireWire PCI card, and must be running Macintosh OS 8.6 or later with FireWire Update 2.1 or later.

Note

When you install the scanner software, FireWire Update 2.1 will automatically be installed or updated, if it's not already on your Macintosh or if you have an older version.

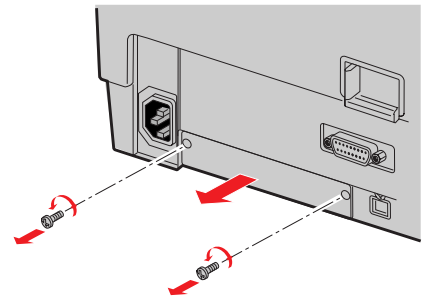
This section explains how to install the IEEE 1394 FireWire scanner interface card in your scanner, and how to connect the scanner to your computer.

- If you have the Professional FireWire model of the EPSON Expression 1600, the card was preinstalled in your scanner. Go to "Connecting to an IEEE 1394 FireWire Interface" on page 29.
- If you purchased the IEEE 1394 FireWire scanner interface card as an option, continue with the next section.

## Installing the Card in Your Scanner

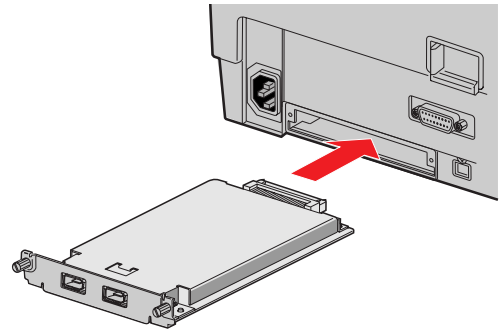
Before you begin, turn off the scanner and disconnect the power cord and any cables.

1. Remove the two screws securing the shield plate to the scanner's optional interface slot, and then remove the plate. Put the screws in a safe place in case you want to reinstall the shield plate later.



Static electricity can damage electronic components like the IEEE 1394 FireWire scanner interface card. To discharge static electricity, touch the scanner's metal frame before handling the card.

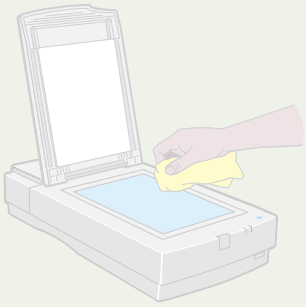
2. Turn the card over so that the component side is facing down, and insert it in the optional interface slot. Push gently until the card is firmly seated in the expansion slot inside the optional interface slot.
3. Tighten the retaining screws and reconnect the scanner's cables.



Now you're ready to connect the scanner to your computer. Continue with "Connecting to an IEEE 1394 FireWire Interface" on page 29.

# Chapter 6

# Scanner Maintenance

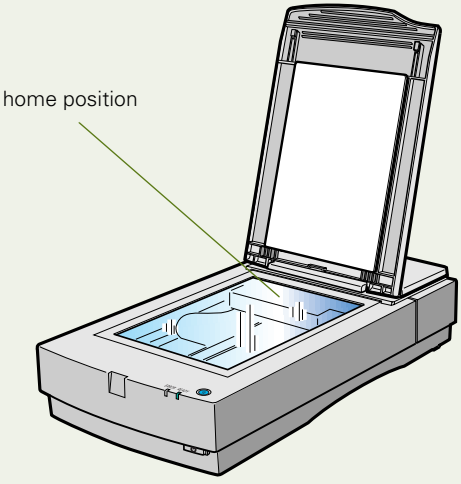


This section gives you basic maintenance instructions and tells you how to transport your scanner safely.

## Transporting the Scanner

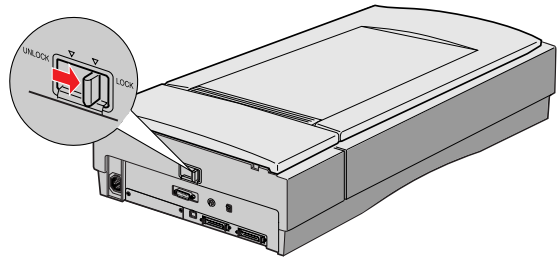
When you transport the scanner a long distance or store it for an extended time, follow the steps below to secure the carriage.

1. Make sure the transportation lock on the back of the scanner is in the UNLOCK position.
2. Locate the SCSI ID rotary switch on the back of the scanner. Align the dot on the rotary switch with the asterisk (*).
3. If you're using a transparency unit or automatic document feeder, remove it and replace the scanner cover.
4. Turn on the scanner and wait until the carriage moves to the home position (toward the back of the scanner). Then turn off the scanner.



5. Slide the transportation lock at the back of the scanner to the LOCK position.

   If the carriage does not automatically return to the home position, slowly raise the front of the scanner and hold it up until the carriage comes to rest in the home position. Then slide the transportation lock to the LOCK position.



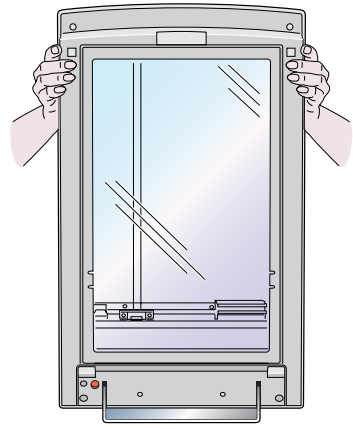

Note

If you are using a transparency unit and it is switched on, the scanner carriage will not move to the home position. Remove the transparency unit first, then perform the steps above. See the next section for instructions.

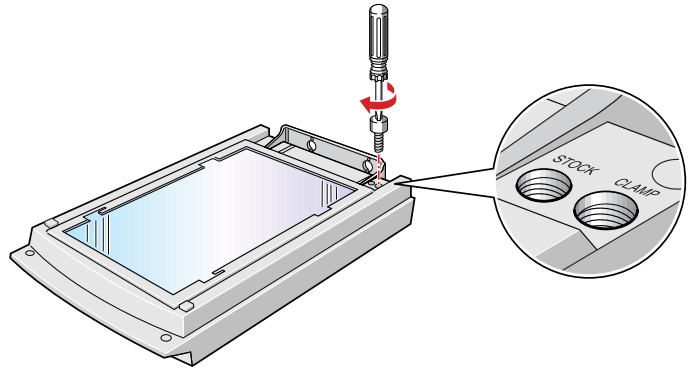
## Transporting the Transparency Unit

After you've removed the transparency unit from the scanner, prepare it for shipping as follows:

1. Slowly raise the front of the transparency unit as shown to allow the lamp assembly to slide to the back of the unit. Wait until the lamp assembly comes to rest.



2. Reinstall the transparency unit's shipping screw in the hole marked CLAMP.




## Cleaning the Scanner

To keep your scanner operating at its best, you should clean it periodically. Before cleaning, unplug the power cord.

Use a soft cloth to clean the outer case with mild detergent dissolved in water.

If the document table glass gets dirty, clean it with a soft, dry cloth. If the glass is stained with grease or other hard-to-remove material, use a small amount of glass cleaner on a soft cloth to remove it. Wipe off any remaining liquid with a dry cloth.

Be sure there's no dust on your document table. Dust can cause white spots to appear in your scanned image.

Always unplug the scanner before cleaning.

Never use a harsh or abrasive brush or cleaning product to clean the document table. A damaged glass surface can decrease the scanning quality.

Never use alcohol, thinner, or corrosive solvent to clean the scanner. These chemicals can damage the scanner components as well as the case.

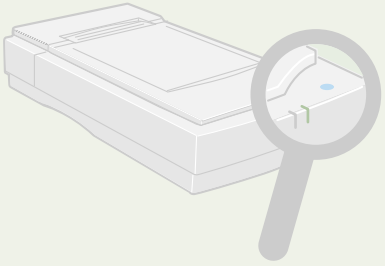
Be careful not to spill liquid into the scanner mechanism or electronic components. This could permanently damage them.

Don't spray lubricants inside the scanner.

Never open the scanner case. If you think repairs or adjustments are necessary, consult your dealer or contact EPSON.

Unplug the scanner and refer servicing to qualified service personnel if the power cord or plug is damaged, if liquid has entered the scanner, if the scanner has been dropped or the case damaged, or if the scanner does not operate normally or exhibits a distinct change in performance.

# Chapter 7
# Solving Problems



This chapter explains how to interpret the signals from your scanner indicator lights, and gives you the basics for diagnosing and solving scanner problems. It also provides instructions on how to uninstall your software and tells you how to contact EPSON and other software manufacturers.

For additional troubleshooting tips, see your electronic *EPSON Expression 1600 Software Reference Guide*.

## Lights and Buttons

The scanner has two indicator lights and two buttons:

*Scanner indicator lights*

| Light | Light status | Color | Scanner status |
|---|---|---|---|
| READY | ○ | Green | Ready to scan images |
| | ☼ (flashing) | Green | Scanning is in progress |
| ERROR | ○ | Red | An error occurred; see the following table for more information |
| | ☼ (rapidly flashing) | | |
| | ● | | |

○ = on, ● = off, ☼ = flashing

*Error conditions*

| ERROR light | READY light | Error type |
|---|---|---|
| ○ | ○ | Command error: The scanner has received incorrect commands from your scanning software. Try rescanning the document. |
| ☼ | ● | Interface error: Check that your scanner is securely connected to your computer, and then turn the scanner off and back on again. |
| ☼ | ☼ | Fatal error: Check that the transportation lock is released, and then turn the scanner off and on again. If this doesn't solve the problem, call your EPSON dealer. |
| ● | ● | Option error: There's a problem with an installed option. Check to make sure the transparency unit or automatic document feeder is flat against the document table. Check that your option is securely connected to the OPTION connector at the back of the scanner. Finally, check that the automatic document feeder isn't out of paper and doesn't have a paper jam. If these suggestions don't solve the problem, call your EPSON dealer. |

○ = on, ● = off, ☼ = flashing

*Scanner buttons*

| Button | Function |
|---|---|
| Operate | Turns the scanner on and off. |
| Start | Automatically launches a Start button-compatible application. You must set up your scanner software and a compatible application to use this button.<br>If you installed Presto! PageManager, it's automatically assigned to the Start button. You can set up Presto! PageManager to scan your image automatically and send it directly to another application or a peripheral device, such as a printer. |

# Problems and Solutions

If you're having problems, this section answers some of the most common questions. For additional software troubleshooting tips, see your electronic *EPSON Expression 1600 Software Reference Guide*.

## Setup Problems

**Your system doesn't recognize the scanner . . .**

- Check your cable connections. If your cable is securely connected to both the scanner and computer, try another cable. If you have a USB connection, use an EPSON USB cable. If you have a SCSI connection, try using an ASPI-compliant Adaptec SCSI 2 cable, and be sure to restart your computer after you change the cable.
- The USB connection only supports a Macintosh or Windows 98 system. Windows 98 must be preinstalled on your system, not upgraded from Windows 95. There is no USB support for Windows 95 or Windows NT.
- Make sure your scanner is on. If you opened your host application before you turned on the scanner, close your application and reopen it. If that doesn't work, restart your system.
- If your scanner is connected to a USB hub, try connecting it directly to the computer's USB port.
- Check the Plug and Play option for your computer; it should be active (Windows 95 or 98 only).
- If you have a SCSI connection, turn off both your scanner and computer. Then turn on your scanner before you turn on the computer.
- If you have a SCSI connection, make sure your SCSI board is installed correctly.
- If the SCSI board is found, but not the scanner, check the SCSI terminator and ID. Make sure the SCSI ID doesn't conflict with another SCSI device.
- If you've replaced your SCSI board or changed the SCSI ID, you may need to uninstall and reinstall your scanner software. See the instructions beginning on page 125.

- Check for IRQ conflicts with built-in options.
- Windows users: check the System Device Manager in the Windows Control Panel. If there is an Unknown Device icon, select it and click Remove.
- Macintosh only: if you have an IEEE 1394 FireWire interface connection, make sure the following Extensions are selected in the Extensions Manager: EPSON FW Scanner Enabler, EPSON FW Scanner Expert, and EPSON FW ScannerLib.
- Macintosh only: if you have an IEEE 1394 FireWire interface connection, make sure the IEEE 1394 FireWire scanner interface card is installed correctly in the scanner. (See "Installing the Card in Your Scanner" on page 107.)
- If all else fails, uninstall and reinstall your software. See the instructions for uninstalling software beginning on page 125.

**EPSON TWAIN Pro (or EPSON TWAIN Pro Network) doesn't appear in the list where you select your scanner . . .**

See the solutions under "Your system doesn't recognize the scanner...".

**If you are unable to connect to the scanner when you click the Test button . . .**

- Check to make sure your cable is securely connected to both the scanner and computer.
- Try a different cable. If you have a USB connection, be sure to use the USB cable that came with your scanner. If you have a SCSI connection, try using an ASPI-compliant Adaptec SCSI 2 cable, and be sure to restart your computer after you change the cable.
- Turn off both the scanner and your computer. Then turn on your scanner before you turn on the computer.
- If you're connected to a USB hub, try connecting the cable to the computer's USB port.
- If you have a SCSI connection, make sure your system is correctly terminated and there are no conflicting SCSI IDs.
- If you're using a network scanner, check with your network administrator to see whether your computer is on a different router than the scanner server. If it is, make sure the router for the scanner server is configured to allow traffic from your network.

- Uninstall and reinstall your software. See the instructions for uninstalling software beginning on page 125.

## Scanner Problems

### The READY light doesn't come on, or flashes . . .

- Check the scanner power cord. Make sure the power cord is securely plugged into the scanner and the power outlet, and that the scanner is turned on.
- Check that the power outlet is working and provides sufficient power for the scanner.
- If you're using a transparency unit or automatic document feeder and both the READY and ERROR lights are off, make sure your installed option is closed (lying flat against the document table). Also, make sure the automatic document feeder doesn't have a paper jam and isn't out of paper.

### The scanner doesn't scan your image . . .

- Make sure the scanner is ready to scan. Wait until the READY light stops flashing and remains on.
- Check your image source setting. Make sure you selected EPSON TWAIN Pro (or EPSON TWAIN Pro Network).
- Run the scanner test to make sure the scanner is communicating with your computer. For Windows 98, see "Testing Your Scanner's Operation" on page 24. For Windows 95 or NT and Macintosh, open the EPSON TWAIN Pro window (or EPSON TWAIN Pro Network window) and click the Test button.
- Make sure you have enough memory to scan your image. If you're scanning a large image or scanning at a high resolution, try closing other programs before you scan. If you have a Macintosh, try increasing the memory of the host application. If your computer still doesn't have enough memory to process the image, try scanning at a lower resolution, or select part of the image to scan.
- If you're using a network scanner, the scanner may have timed out. Check the time out setting on the EPSON TWAIN Pro Network window and increase the value, if necessary.

**If you installed a ZIP drive . . .**

Your ZIP drive may be interfering with your scanner. Disconnect your ZIP drive, then try using the scanner.

**If you're using a transparency unit or automatic document feeder . . .**

- Make sure the unit is correctly installed and connected to the scanner's OPTION interface.
- Make sure you selected the correct Document Source setting for your image.
- Make sure your transparency unit or automatic document feeder is closed (lying flat against the document table).
- If paper is jammed in your automatic document feeder, see "Fixing Paper Jams" on page 106.

## Software Problems

**You can't start EPSON TWAIN Pro . . .**

- Make sure the scanner's READY light is on.
- Check to make sure your cable is securely connected to both the scanner and computer.
- Try a different cable. If you have a USB connection, be sure to use an EPSON USB cable. If you have a SCSI connection, try using an ASPI-compliant Adaptec SCSI 2 cable, and be sure to restart your computer after you change the cable.
- If you have a SCSI connection, you can't turn the scanner off and on again while you're using your computer. Turn both the scanner and computer off, then turn on the scanner before you turn on the computer.
- If you have a SCSI connection, make sure the SCSI interface board is installed correctly in your computer.
- For SCSI connections, check that your system recognizes your scanner and SCSI board (Windows only). Check the System Device Manager in the Windows Control Panel. For Windows NT, check the SCSI Adapters dialog in the Windows Control Panel.
- For SCSI connections, check for conflicts in your SCSI ID setting, I/O address, the interrupt setting for your SCSI board, and other settings. For information about the SCSI ID setting, see "Connecting to a SCSI Interface" on page 27. For information about choosing other settings, see your computer manual.

- If you have more than one scanner connected to your computer, make sure the Expression 1600 is selected as your default scanner. For Macintosh, check the EPSON ScannerSelector. For Windows 98, check the Utility tab on the Expression 1600 Properties window. For Windows 95 or NT, check the EPSON TWAIN Pro window.
- Make sure you selected EPSON TWAIN Pro as your TWAIN source.
- If you have an older EPSON scanner and have a previous version of EPSON TWAIN installed, uninstall the older version (Windows) or close any extensions like EPSON Scanner Monitor, EPSON Scanner Monitor USB, or EPSON Monitor 3 (Macintosh).
- If none of these solutions help, uninstall your software, then reinstall it. See the instructions for uninstalling software beginning on page 125.

**You can't start EPSON TWAIN Pro Network from a client computer . . .**

- Make sure the scanner and the scanner server are both powered on.
- Make sure the cables connecting the scanner, the scanner server, and the client computer meet system requirements and are properly connected.
- Make sure the correct IP address for the scanner server is entered in the EPSON TWAIN Pro Network setup window for the client computer.
- Make sure the network interface card is installed correctly in both the scanner server and the client computer.
- Make sure both the scanner server and client computer are running the TCP/IP protocol.
- If more than one scanner is connected to the scanner server, make sure the Expression 1600 is selected as the default scanner.

**The scanner software doesn't work properly . . .**

- Make sure the system requirements (for example, the operating system version) are correct for your software. See "System Requirements" on page 143.

- Check your computer's memory. If you're running other software at the same time, using RAM resident programs, or have many device drivers, the computer may not have enough memory. (See your software and computer manuals.) If you're scanning a large image or scanning at a high resolution, your computer may not have enough memory to process the image.
- Check your software installation. Make sure that your software is correctly installed and set up. If all else fails, uninstall your software, then reinstall it.

**You can't select any of the following as your Document Source: Auto Document Feeder, TPU for Neg. Film, TPU for Pos. Film . . .**

- Make sure your option is installed correctly, and that it's securely connected to the OPTION connector. If you need to reinstall the option or connect it to the OPTION connector, restart your computer.

## Scanning Problems

**The file size is too big . . .**

Adjust your scan settings. Try setting at a lower resolution (dpi), or scan only part of the image.

### Your scanned image is faint or has gaps . . .

- Check the brightness. Decrease the software or driver's brightness setting.
- Try adjusting the Gamma and Exposure settings in the Image Controls window.
- Check the condition of your original. If the document is damaged, dirty, or wrinkled, these imperfections will show up in your scan.
- Make sure the document is placed flat against the document table.

### Your scanned image is blurred or distorted . . .

- Check the position and condition of your document. Make sure the document is placed flat against the scanner's document table glass. If only part of the image is blurred, part of your document may be wrinkled or warped.
- Make sure the document table glass is clean.
- Make sure the scanner is on a flat, stable surface.

### The edges of the document aren't scanned . . .

- Check the position of your document. Adjust it so that the image is within the glass area of the document table.
- If colors are patchy or distorted at the edges of the image, the document may be too thick, or there may be outside light interfering with the scan.

### Your image scans at an angle . . .

Check the position of your document. It may be placed at an angle on the document table. Align it so the horizontal and vertical edges are carefully aligned with the scales on the top and side of the document table.

### Straight lines in the image come out jagged . . .

Make sure the document is aligned with the scales on the top and side of the document table.

### A line of dots appears in the image . . .

Clean the narrow window near the scanner's mounting bracket with a soft, dry cloth.

### A line of dots is missing from the image . . .

- When a line of dots is missing from the scanned image on your screen, the scanner sensor has malfunctioned. Contact your EPSON dealer.
- When a line of dots is missing from your printouts, your print head has malfunctioned. See your printer manual.

### The colors in your scanned image look different than the colors in the original document . . .

- Run the EPSON Screen Calibration Utility.
- Experiment with the Unsharp Mask setting. Click the Destination button in the EPSON TWAIN Pro main window to display the Destination window, then select or deselect Unsharp Mask.
- Make sure the Image Type and Destination settings are correct.
- Try different combinations of gamma and color settings in your scanner software.
- If you're using a transparency unit or automatic document feeder, make sure they're closed when scanning.
- Use MonacoEZcolor to create color profiles for your scanner, printer and monitor. Then use an ICC-compliant color management application like Adobe Photoshop 5.0 to apply the profiles. See the *MonacoEZcolor User Guide* for instructions.
- If you're using profiles created in MonacoEZcolor, make sure color management is turned off in your scanner software. Click the Configuration button in the EPSON TWAIN Pro main window to display the Configuration window; make sure the ICM or ColorSync checkbox is deselected.

### Moiré (cross-hatch) patterns appear in the image when you perform halftone scanning . . .

- Make the image size slightly smaller.
- Use a transparent sheet between the document and the document table to defocus the image.
- Reposition the document on the document table. Try positioning the document at a slight angle.
- Make sure Unsharp Mask is deselected in the Destination window.

- Select 24-bit Color De-screening as your Image Type, or select On for De-screening in the Image Type window.

### The printed image is larger or smaller than the original . . .

You can't judge the size of the printed image by what you see on your screen. The image size settings in your scanner software determine the size of the printed image.

### You can't print scanned images, or the printed image looks garbled . . .

- Make sure your printer is securely connected to your computer and that you're using the correct cable.
- Make sure the correct printer is selected in your printer software.

### OCR scanning produces poor character recognition . . .

- Select OCR as both the Image Type and Destination.
- Select Text Enhancement Technology for the Black and White Option in the Image Type window.
- Adjust the Threshold setting in the Image Controls window.

### The image doesn't scan, or you can only scan a few dots . . .

- Make sure the document is face down on the document table.
- If you're using an automatic document feeder, make sure the original document is inserted face up.
- If you've selected OCR as your Image Type, select None for the Black and White Option in the Image Type window. Then adjust the Threshold setting in the Image Controls window. Or try changing the Image Type from OCR to Line Art, then adjust the Threshold setting.

### You're using a transparency unit, and the colors of your negative film preview look strange . . .

- Make sure you've selected TPU for Neg. Film as your Document Source.
- The scanner perceives the film guide's frame as white, which alters the exposure of the scanning area and makes the preview appear darker. To see the correct colors, do a zoom preview on an area toward the center of an image.

# Uninstalling the Expression 1600 Software

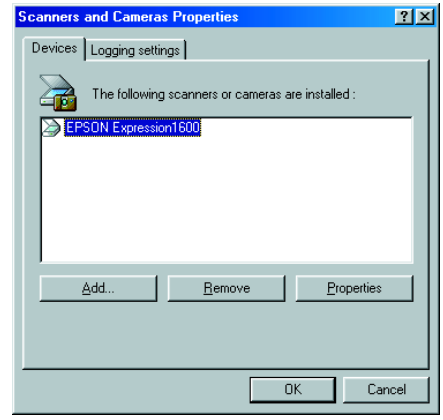
If you've tried every other solution and your system still doesn't recognize your scanner, try uninstalling and reinstalling the scanner driver software.

## Uninstalling EPSON TWAIN Pro

Follow the procedure for uninstalling EPSON TWAIN Pro on your system.

### Windows 98

1. Double-click the Scanners and Cameras icon in the Windows Control Panel.
2. On the Devices tab, select EPSON Expression1600.
3. Click the Remove button. Then click OK to close the window.
4. Restart your computer.



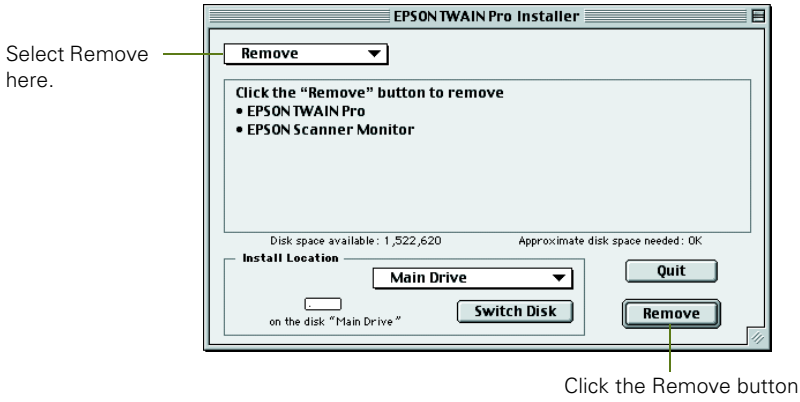

### Windows 95 and Windows NT

1. On the Start menu, click Programs, EPSON Scanner, EPSON TWAIN Pro Uninstall.
2. When you're finished, restart your computer.

### Macintosh

1. Insert the EPSON Expression 1600 Scanning Tools CD-ROM in your drive.
2. Double-click the EPSON TWAIN Pro folder.
3. Double-click the English folder.

4. Double-click the EPSON TWAIN Pro Installer icon.
5. At the Installer window, select Remove at the top of the window, then click the Remove button.




6. When you're finished, restart your computer.

## Uninstalling EPSON TWAIN Pro Network

Follow the procedure for uninstalling EPSON TWAIN Pro Network on your system.

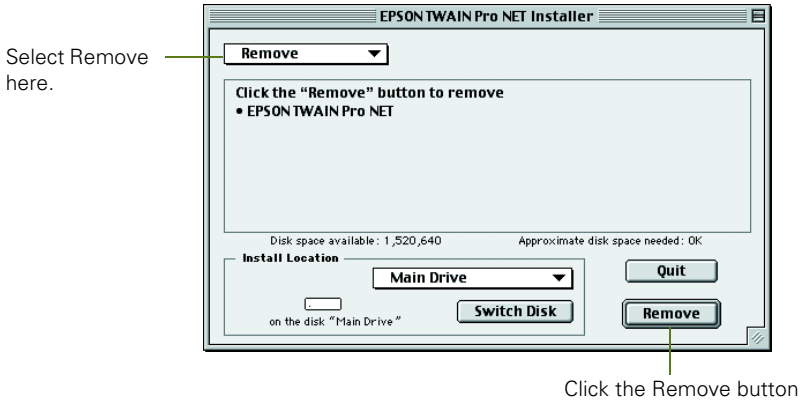
### Windows 95, Windows 98, and Windows NT

1. On the Start menu, click Programs, EPSON Network Scanner, EPSON TWAIN Pro Network Uninstall.
2. When you're finished, restart your computer.

### Macintosh

1. Insert the EPSON Expression 1600 Scanning Tools CD-ROM in your drive.
2. Double-click the EPSON TWAIN Pro Network folder.
3. Double-click the English folder.
4. Double-click the EPSON TWAIN Pro NET Installer icon.

5. At the Installer window, select Remove at the top of the window, then click the Remove button.




6. When you're finished, restart your computer.

## Uninstalling EPSON Scan Server

1. To uninstall EPSON Scan Server on your Windows system, click Start, Programs, EPSON Scan Server, and select EPSON Scan Server Uninstall.
2. When you're finished, restart your computer.

# Where To Get Help

## *EPSON Technical Support*

EPSON provides technical assistance through electronic support services and automated telephone services 24 hours a day. The following tables list the contact information:

*Electronic support services*

| Service | Access |
|---|---|
| World Wide Web | From the Internet, you can reach EPSON's Home Page at **http://www.epson.com**. |
| EPSON Internet FTP Site | If you have Internet FTP capability, use your Web browser (or other software for FTP downloading) to log onto **ftp.epson.com** with the user name **anonymous** and your e-mail address as the password. |

*Automated telephone services*

| Service | Access |
|---|---|
| EPSON SoundAdvice℠ | For pre-recorded answers to commonly asked questions about EPSON products 24 hours a day, seven days a week, call **(800) 922-8911**. |
| EPSON FaxAdvice™ | Access EPSON's technical information library by calling **(800) 922-8911**. You must provide a return fax number to use this service. |
| EPSON Referral Service | For the location of your nearest Authorized EPSON Reseller or Customer Care Center, call **(800) 922-8911**. |

To speak to a technical support representative, dial (562) 276-4382 (U.S.) or (905) 709-3839 (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 (EPSON Expression 1600)
- Product serial number (located on the back of scanner)
- Computer configuration
- Description of the problem

You can purchase genuine EPSON supplies and accessories from EPSON Accessories at (800) 873-7766 (U.S. sales only), 6 AM to 6 PM, Pacific Time, Monday through Friday. In Canada, please call (800) 873-7766 for dealer referral. Or visit our web site at www.epsonsupplies.com (U.S. sales only).

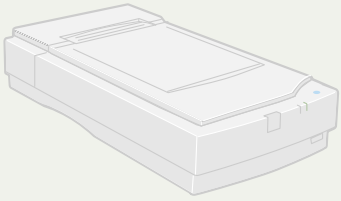
If you need help using another manufacturer's software with an EPSON product, see the documentation for that software for technical support information.

## Software Technical Support

| Software | Telephone | Fax | Online and E-mail |
|---|---|---|---|
| EPSON TWAIN Pro | (562) 276-4382<br>(800) 922-8911 | (800) 922-8911 fax-on-demand system | www.epson.com |
| TextBridge Classic | (562) 276-4382<br>(800) 922-8911 | (800) 922-8911 fax-on-demand system | www.epson.com |
| Adobe Photoshop 5.0 LE | Macintosh:<br>(900) 555-3300<br>Windows:<br>(900) 555-2200<br>$2.00 per minute | | www.adobe.com/supportservice/custsupport/techsupport.html<br>techdocs@adobe.com |
| NewSoft Presto! PageManager | (510) 445-8616 | (510) 445-8601 | www.newsoftinc.com |
| MonacoEZcolor | (978) 749-9944 | (978) 749-9977 | www.monacosys.com |

# Appendix A

# Specifications



This appendix includes general, electrical, environmental, and interface specifications. It also includes specifications for the transparency unit, automatic document feeder, and IEEE 1394 FireWire scanner interface card.

## Scanner

### General

**Scanner type**

Flatbed, color

**Photoelectric device**

Color CCD line sensor

**Effective pixels**

13600 × 18720 pixels at 1600 dpi, 100% scaling

**Optical density**

3.3 Dmax

**Color depth**

36-bit internal/36-bit external

**Grayscale depth**

12-bit internal/12-bit external

**Maximum document size**

US letter or A4 size (8.5 × 11.7 inches [216 × 297 mm])

Up to legal size if using the automatic document feeder

Reading area can be specified from software

**Optical resolution**

1600 dpi

**Maximum hardware resolution***

1600 dpi (main scan)
3200 dpi with Micro Step Drive (sub scan)

*The maximum hardware resolution of 1600 × 3200 dpi is achieved using EPSON's Micro Step Drive technology

**Maximum interpolated resolution**

12800 × 12800 dpi

**Speed (1600 dpi, draft mode)**

| | |
|---|---|
| Color: | 9.2 msec/line (approx.) |
| Grayscale: | 3.1 msec/line (approx.) |
| Line Art: | 3.1 msec/line (approx.) |

**Color separation**

RGB color filters on CCD

### Reading sequence

Monochrome: One-pass scanning

Color byte sequence: One-pass scanning (R, G, B)

Color line sequence: One-pass scanning (R, G, B)

### Zoom

50 to 200% in 1% increments

### Command level

ESC/I-B8

### Pixel depth

12 bits per pixel (12 bits per pixel input, 1 to 12 bits per pixel output)

### Brightness

7 levels

### Line art settings

Fixed threshold

TET (Text Enhancement Technology, enable/disable selectable)

### Digital halftoning

AAS (Auto Area Segmentation, enable/disable selectable)

3 halftoning modes (A, B, and C)

4 dither patterns (A, B, C, and D) for bi-level and quad-level data (2 downloadable dither patterns)

2 user-defined dither patterns (A, B)

### Gamma correction

2 types for CRT display

3 types for printer

2 types user-defined

### Color correction

1 type for CRT display

3 types for printer (available in color byte sequence mode and color line sequence mode)

1 type user-defined

### Interfaces

SCSI 2 (50 pin half pitch connectors)

USB (Type B receptacle connector)

Optional IEEE 1394 (FireWire)

### Light source

Xenon gas cold cathode fluorescent lamp

### Reliability

100,000 cycles of carriage movement (main unit MCBF)

### Dimensions

| | |
|---|---|
| Width: | 13 inches (332 mm) |
| Depth: | 22.1 inches (562 mm) |
| Height: | 5.3 inches (133 mm) |

### Weight

Approximately 18.7 lb (8.5 kg)

## Electrical

### Input voltage range

| | |
|---|---|
| 100 to 120 VAC: | 90 to 132 VAC |
| 220 to 240 VAC: | 198 to 264 VAC |

### Rated frequency

50 to 60 Hz

### Rated current

| | |
|---|---|
| 100 to 120 VAC: | 0.8 A |
| 220 to 240 VAC: | 0.4 A |

### Power consumption

| | |
|---|---|
| Operating: | Approximately 30 W<br>Approximately 50 W with TPU or ADF unit |
| Standby: | Approximately 10 W |

## Environmental

### Temperature

| | |
|---|---|
| Operating: | 41 to 95 °F (5 to 35 °C)<br>50 to 89 °F when using ADF (10 to 32 °C) |
| Standby: | –13 to 140 °F (–25 to 60 °C) |

### Humidity (without condensation)

| | |
|---|---|
| Operating: | 10 to 80% |
| Standby: | 10 to 85% |

### Operating conditions

Ordinary office or home conditions.

Avoid dust, direct sunlight, and proximity to strong light sources.

## Safety Approvals

### 120 V model

Safety: UL 1950 with D3
CSA C22.2 No. 950

EMC FCC part 15 subpart B class B
CSA C108.8 class B

### 230 V model

| | |
|---|---|
| Safety: | EN 60950 |
| EMC: | EN 550022 (CISPR Pub 22) class B<br>AS/NZS 3548 class B |

## SCSI Interface

### Interface type

ANSI X3T9.2/375R Revision 10L (SCSI 2)

### Logic level

TTL-compatible

### ID setting

Selectable from 0 to 7

### Terminator

Internal terminator (enable/disable selectable)

### Connector type

Two half pitch 50-pin connectors

## USB Interface

### Interface type

Universal Serial Bus Specification Revision 1.0

### Electrical standard

Full speed mode (12Mb) of Universal Serial Bus Specification Revision 1.0

### Connector type

One receptacle (Type B)

## Option Interface Connector

### Interface type

For use with the optional automatic document feeder (B813162) and transparency unit (B813182)

### Output voltage

21.6 to 26.4 VDC

4.75 to 5.25 VDC

### Output current

0.6 A (24 V)

0.3 A (5 V)

## Initialization Methods

### SCSI interface

| | |
|---|---|
| Hardware: | Initialized when the scanner is turned on or the scanner receives a SCSI Reset signal from the SCSI interface |
| Software: | Initialized when the software sends the Esc @ (initialize the scanner command), or the scanner receives a SCSI Bus Device message |

### USB interface

| | |
|---|---|
| Hardware: | Initialized when the scanner is turned on or the USB cable is unplugged from the USB port on the scanner |
| Software: | Initialized when the software sends the Esc @ command or the scanner receives a Bus Reset from the USB interface |

# Transparency Unit (B813182)

## General

### Reliability

MCBF 100,000 cycles

### Readable area

8.5 × 11.7 inches (216 × 297 mm)

### Dimensions

| | |
|---|---|
| Width: | 12.8 inches (324 mm) |
| Depth: | 21.3 inches (540 mm) |
| Height: | 3.6 inches (92 mm) |

### Weight

Approximately 11 lb (5 kg)

## Electrical

### Input voltage

21.6 to 26.4 VDC

4.7 to 5.25 VDC

### Rated current

0.6 A

0.1 A

## Environmental

### Temperature

| | |
|---|---|
| Operating: | 41 to 95 °F (5 to 35 °C) |
| Standby: | –14 to 140 °F (–20 to 60 °C) |

### Humidity (without condensation)

| | |
|---|---|
| Operating: | 10 to 80% |
| Standby: | 10 to 85% |

## Automatic Document Feeder (B813162)

### General

**Paper input/output**

Load face-up; eject face-down

**Paper quantity**

30 pages (55 g/m$^2$ paper, maximum total thickness under 0.24 inches [6 mm])

**Reliability**

100,000 sheets (load/eject MCBF)

**Dimensions**

Width: 12.2 inches (310 mm)

Depth: 20.9 inches (528 mm)

Height: 3.6 inches (92 mm)

**Weight**

Approximately 9.9 lb (4.5 kg)

### Electrical

**Input voltage**

22.8 to 25.2 VDC
4.75 to 5.25 VDC

**Input current**

24 V: 0.6 A

5 V: 0.3 A

### Environmental

**Temperature**

| | |
|---|---|
| Operating: | 50 to 89 °F (10 to 32 °C) |
| Standby: | –4 to 140 °F (–20 to 60 °C) |

**Humidity (without condensation)**

| | |
|---|---|
| Operating: | 20 to 80% |
| Standby: | 95% or less |

## IEEE 1394 FireWire Scanner Interface Card (B808342)

### General

**Interface type**

IEEE 1394-1995 compatible

**Data transfer method**

Half-duplex Data/Strobe differential serial

**Synchronization method**

Clock synchronization with DS-Link

**Encoding/decoding**

DS-Link

**Logic level**

3.3 V

**Compatible connectors**

IEEE 1394-1995 compatible

**Power class**

Power class code 100

No power supply from external sources

Fitted with a repeat function with bus power

### Environmental

**Temperature**

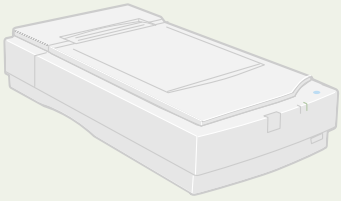
| | |
|---|---|
| Operating: | 41 to 95 °F (5 to 35 °C) |
| Standby: | –13 to 140 °F (–25 to 60 °C) |

**Humidity (without condensation)**

| | |
|---|---|
| Operating: | 10 to 80% |
| Standby: | 10 to 85% |

Appendix B

# Installing the TCP/IP Protocol



To use your EPSON Expression 1600 as a network scanner, your client computers and scanner server must have a network interface card, a network interface card driver, and the TCP/IP protocol installed. In addition, both the client computers and the scanner server must have an IP address assigned.

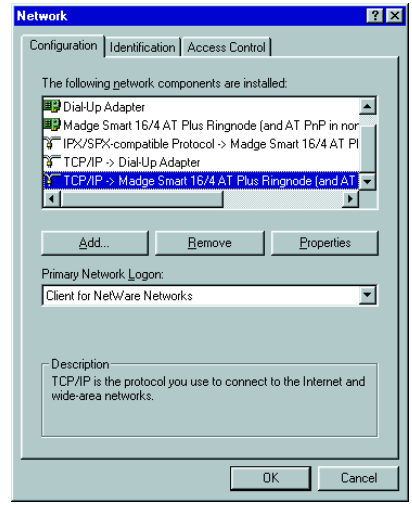
If you have a newer Macintosh, the TCP/IP protocol was preinstalled on your computer. Just make sure that TCP/IP is enabled in your Extensions Manager. Your computer has already been assigned an IP address if you are running a DHCP server, so no further setup is necessary. Obtain an IP address from your network adminstrator if you want to enter an address manually.

Note

If you're running DHCP and WINS, or if you have a DNS server, you may find it easer to use a host name rather than an IP address to identify the scanner server. To specify a host name, you must enable DNS. See your Windows or Macintosh documentation for instructions.

# Installing the TCP/IP Protocol on Windows 95 and Windows 98

1. Double-click the **Network** icon in the Control Panel. If necessary, click the **Configuration** tab to display the window on the right.

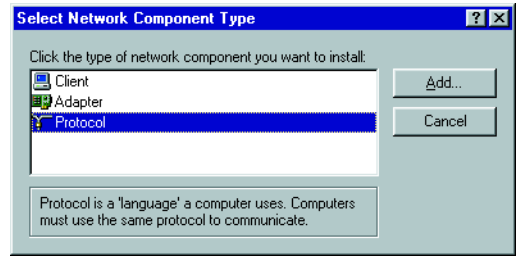



2. Check that **TCP/IP** appears in the list of installed network components.

   If it appears in the list, go to "Assigning an IP Address" on page 139.

   If you don't see **TCP/IP** in the list, continue with the next step.

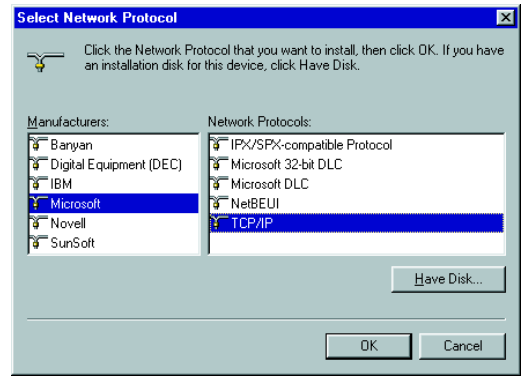
3. Click the **Add** button. You see the screen to the right.




4. Select **Protocol** from the list and click the **Add** button. The screen to the right appears.

5. Select **Microsoft** from the Manufacturers list, and **TCP/IP** from the Network Protocols list. Then click **OK**.

6. Continue with the instructions below to assign an IP address.



## Assigning an IP Address

If your network is connected to the Internet, ask your Internet provider or IS department for a formal IP address.

If your network is not connected to the Internet, you can use an IP address in the following ranges: 10.0.0.0 to 10.255.255.255, 172.16.0.0 to 172.31.255.255, or 192.168.0.0 to 192.168.255.255. Use a different IP address for every computer on your network.

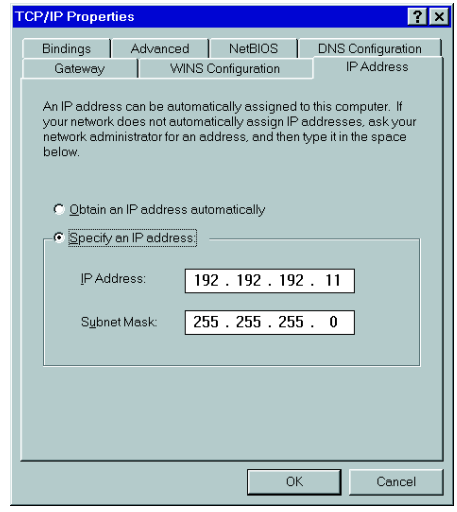
Note

If you use IP addresses in the ranges listed above, you may need to change them before you connect the network to the Internet. Check with your network administrator.

If your network uses a DHCP server, you don't need to obtain an IP address before beginning this procedure—the server finds one for you.

When you have your IP address, follow the steps below to assign it to your computer.

1. Select **TCP/IP** on the list of installed network components on the Configuration tab, and then click the **Properties** button. If necessary, click the **IP Address** tab.
2. Click **Specify an IP address**, and then enter the IP address and subnet mask.




Note

If you're using a DHCP server on your network, you can assign an IP address automatically by selecting Obtain an IP address automatically and clicking OK.

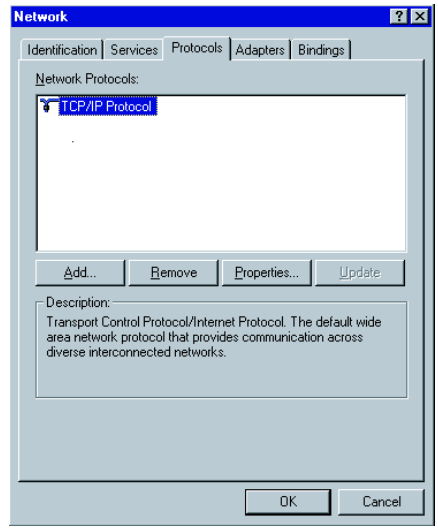
3. Click **OK** to close the TCP/IP Properties window, then click **OK** again to close the Network window and have your IP address assignment take effect. Make sure you share the IP address for the scanner server with client computers.

# Installing the TCP/IP Protocol on Windows NT 4.0

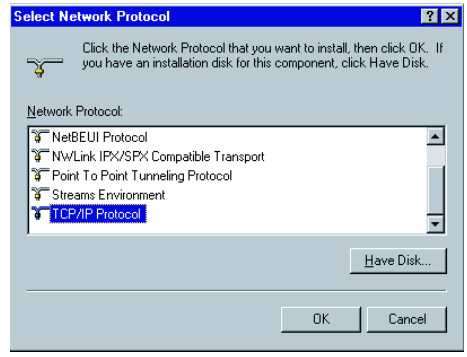
1. Double-click the **Network** icon in the Control Panel. If necessary, click the **Protocols** tab.
2. Check that **TCP/IP Protocol** appears in the list of network protocols.

   If it appears in the list, go to "Assigning an IP Address" on page 141.

   If you don't see **TCP/IP Protocol** in the list, continue with the next step.




3. Click the **Add** button. You see the screen to the right.
4. Select **TCP/IP Protocol** and click **OK**.
5. Continue with the instructions below to assign an IP address.



## Assigning an IP Address

If your network is connected to the Internet, ask your Internet provider or IS department for a formal IP address.

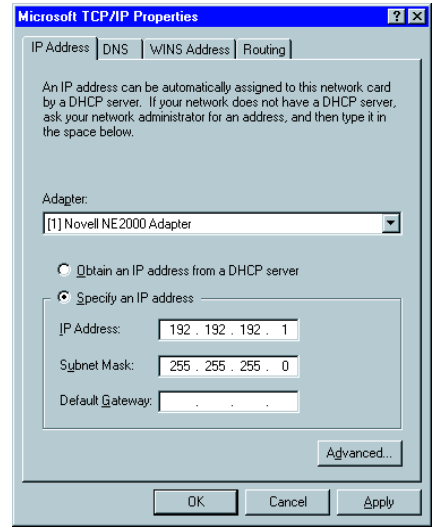
If your network is not connected to the Internet, you can use an IP address in the following ranges: 10.0.0.0 to 10.255.255.255, 172.16.0.0 to 172.31.255.255, or 192.168.0.0 to 192.168.255.255. Make sure you use a different IP address for every computer on your network.

If you use IP addresses in the ranges listed above, you may need to change them before you connect the network to the Internet. Check with your network administrator.

If your network uses a DHCP server, you don't need to obtain an IP address before beginning this procedure—the server finds one for you.

Follow the steps below to assign the IP address to your computer:

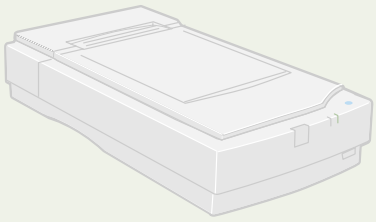
1. Select **TCP/IP Protocol** in the Network Protocols list on the Protocols tab, and then click the **Properties** button.
2. Click the **IP Address** tab to display the screen to the right.
3. Click **Specify an IP address**, and then enter your IP address and subnet mask. Click **OK**. (If you're using a DHCP server on your network, you can assign an IP address automatically by selecting **Obtain an IP address from a DHCP server** and clicking **OK**.)
4. Click **OK** again to close the Network window and have your IP address assignment take effect.




Make sure you share the IP address for the scanner server with all client computers on the network.

# Appendix C

# Notices



This chapter includes system requirements, safety instructions, your Epson America Limited Warranty, and other important information about your EPSON Expression 1600.

## System Requirements

The minimum system requirements for Windows and Macintosh are listed below. For optimum performance, a faster processor and more memory are recommended. If you're scanning high resolution images, you need more than the minimum available hard disk space.

Note

Color and tone reproduction are subject to the display capability of your computer system, including the video card, monitor, and software. See the documentation for these products for details.

### *Windows*

- An IBM-compatible PC with a Pentium® processor
- Microsoft Windows 95, Windows 98, or Windows NT 4.0 (Service Pack 3)
- SCSI or USB (Windows 98 only) port
- 32MB RAM (64MB RAM recommended for all systems)
- 50MB available hard disk space
- CD-ROM drive

- VGA color monitor with 640 × 480 resolution (a color monitor with a resolution of 800 × 600 or higher recommended)
- 8-bit 256-color display adapter card (24-bit display adapter card with millions of colors recommended)

## Macintosh

- USB: Macintosh OS 8.1 or later

If you're using Mac OS 8.1 on an iMac®, you need to install iMac Firmware Update 1.0 before installing the scanner software. This is available online from the Apple® web site. If you're using Mac OS 8.5, check the Apple web site for any updates.

- SCSI: Macintosh OS 7.5 or later
- FireWire: Macintosh OS 8.6 with FireWire update 2.1
- Power Macintosh or higher processor
- Macintosh standard SCSI or USB interface; for IEEE 1394 FireWire connections, either a built-in IEEE 1394 FireWire port or an IEEE 1394 FireWire PCI card
- 32MB RAM (64MB RAM recommended)
- 50MB available hard disk space
- CD-ROM drive
- VGA color monitor with 640 × 480 screen resolution (a color monitor with a resolution of 800 × 600 or higher recommended)
- 8-bit 256-color display adapter card (24-bit display adapter card with millions of colors recommended)

EPSON TWAIN Pro supports the Apple ColorSync™ 2.0 color management system and QuickTime.™ These extensions are automatically installed during the EPSON TWAIN Pro installation.

# Year 2000 Ready

Your EPSON scanner is *Year 2000 Ready*. However, be sure the other parts of your computer system are also ready for the year 2000.

# Important Safety Instructions

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

- Unplug the scanner before cleaning. Clean with a damp cloth only. Do not spill liquid on the scanner.
- Do not place the scanner on an unstable surface or near a radiator or heat source.
- Do not block or cover the openings in the scanner's cabinet. Do not insert objects through the slots.
- Use only the type of power source indicated on the scanner's label.
- Connect all equipment to properly grounded power outlets. Avoid using outlets on the same circuit as photocopiers or air control systems that regularly switch on and off.
- Do not let the power cord become damaged or frayed.
- If you use an extension cord with the scanner, make sure the total ampere rating of the devices plugged into the extension cord does not exceed the cord's ampere rating. Also, make sure the total ampere rating of all devices plugged into the wall outlet does not exceed the wall outlet's ampere rating.
- Do not attempt to service the scanner yourself.
- Unplug the scanner and refer servicing to qualified service personnel under the following conditions: if the power cord or plug is damaged; if liquid has entered the scanner; if the scanner has been dropped or the cabinet damaged; if the scanner does not operate normally or exhibits a distinct change in performance. Do not adjust controls that are not covered by the operating instructions.

# ENERGY STAR Compliance

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

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

# Declaration of Conformity

According to 47CFR, Part 2 and 15 for Class B Personal Computers and Peripherals; and/or CPU Boards and Power Supplies used with Class B Personal Computers:

| | |
|---|---|
| We: | EPSON AMERICA, INC. |
| Located at: | MS 6-43<br>3840 Kilroy Airport Way<br>Long Beach, CA 90806-9941<br>Telephone: (562) 290-5254 |

Declare under sole responsibility that the product identified herein, complies with 47CFR Part 2 and 15 of the FCC rules as a Class B digital device. Each product marketed, is identical to the representative unit tested and found to be compliant with the standards. Records maintained continue to reflect the equipment being produced can be expected to be within the variation accepted, due to quantity production and testing on a statistical basis as required by 47CFR §2.909. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

| | |
|---|---|
| Trade Name: | EPSON |
| Type of Product: | Image Scanner |
| Model: | G780A |
| Product: | EPSON Expression 1600 |

# FCC Compliance Statement

## For United States Users

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

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

## Warning

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

## For Canadian Users

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le materiel brouilleur du Canada.

## EPSON AMERICA, INC.
## LIMITED WARRANTY

*What Is Covered:* Epson America, Inc. ("EPSON") warrants to the first end user customer of the EPSON product enclosed with this limited warranty statement, that the product if purchased and used in the United States or Canada, conforms to the manufacturer's specifications and will be free from defects in workmanship and materials for a period of one year from the date of original purchase. EPSON warrants that the EPSON product is manufactured from new components and parts, or in the case of a refurbished unit, may contain refurbished parts that meet the EPSON standard of quality.

*What EPSON Will Do To Correct Problems:* Should your EPSON product prove defective during the warranty period, please bring the product securely packaged in its original container or an equivalent, along with proof of the date of original purchase, to your EPSON Dealer or EPSON Customer Care Center. EPSON will, at its option, repair or replace on an exchange basis the defective unit, without charge for parts or labor. When warranty service involves the exchange of the product or of a part, the item replaced becomes EPSON property. The exchanged product or part may be new or previously repaired to the EPSON standard of quality. Exchange or replacement products or parts assume the remaining warranty period of the product covered by this limited warranty. For warranty service, you must provide proof of the original purchase date.

*What This Warranty Does Not Cover:* This warranty covers only normal use in the United States and Canada. This warranty does not cover damage to the EPSON product caused by parts or supplies not manufactured, distributed or certified by EPSON. This warranty does not cover third party parts, components or peripheral devices added to the EPSON product after its shipment from EPSON, e.g., dealer-added boards, chips or drives. EPSON is not responsible for warranty service should the EPSON label or logo or the rating label or serial number be removed or should the product fail to be properly maintained or fail to function properly as a result of misuse, abuse, improper installation, neglect, improper shipping, damage caused by disasters such as fire, flood, and lightning, improper electrical current, software problems, interaction with non-EPSON products, or service other than by an EPSON Authorized Servicer. Postage, insurance, or shipping costs incurred in presenting your EPSON product for warranty service are your responsibility. If a claimed defect cannot be identified or reproduced in service, you will be held responsible for costs incurred.

THE WARRANTY AND REMEDY PROVIDED ABOVE ARE EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESS OR IMPLIED WARRANTIES INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SOME LAWS DO NOT ALLOW THE EXCLUSION OF IMPLIED WARRANTIES. IF THESE LAWS APPLY, THEN ALL EXPRESS AND IMPLIED WARRANTIES ARE LIMITED TO THE WARRANTY PERIOD IDENTIFIED ABOVE. UNLESS STATED HEREIN, ANY STATEMENTS OR REPRESENTATIONS MADE BY ANY OTHER PERSON OR FIRM ARE VOID. NEITHER EPSON AMERICA, INC. NOR ITS AFFILIATES SHALL BE LIABLE FOR ANY LOSS, INCONVENIENCE, OR DAMAGE, INCLUDING DIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, RESULTING FROM THE USE OR INABILITY TO USE THE EPSON PRODUCT, WHETHER RESULTING FROM BREACH OF WARRANTY OR ANY OTHER LEGAL THEORY.

In Canada, warranties include both warranties and conditions.

Some jurisdictions do not allow limitations on how long an implied warranty lasts and some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusions may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from jurisdiction to jurisdiction.

*To locate the EPSON Authorized Reseller or EPSON Customer Care Center nearest you call:*

800-922-8911 *or write to:*

Epson America, Inc. ● P.O. Box 93008 ● Long Beach, CA 90809-9985

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