Where to Find Information

This Setup Guide

This guide shows how to set up the scanner and calibrate the screen, how to install the scanner software and options, and how to use the scanner and make basic scans.

EPSON Scan Server & EPSON TWAIN Pro Network User's Guide

Provides detailed instructions for installing and using EPSON Scan Server and EPSON TWAIN Pro Network software.

Online Reference Guide

Included on the EPSON Scanner Software CD-ROM, this guide provides basic information about scanning and details on EPSON TWAIN Pro and other EPSON scanner software. Descriptions of EPSON TWAIN Pro also apply to EPSON TWAIN Pro Network. Finally, it offers troubleshooting tips and customer support information.

Online Color Guide (may not be available in some countries)

Included on the EPSON Scanner Software CD-ROM, this guide explains color imaging basics and how to get impressive results from your scanner and other EPSON products.

Online Help for EPSON TWAIN Pro and EPSON TWAIN Pro Network

Online help provides you with detailed information on EPSON TWAIN Pro and EPSON TWAIN Pro Network; click the **?** button in the EPSON TWAIN Pro or EPSON TWAIN Pro Network dialog box.

Information on PageManager and other software

Online documentation for PageManager for EPSON and other software is available on the EPSON Scanner Software CD-ROM and the CD-ROM for each additional software.

EPSON EXPRESSION™ 1640 XL

Color Image Scanner

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of SEIKO EPSON CORPORATION. No patent liability is assumed with respect to the use of the information contained herein. Neither is any liability assumed for damages resulting from the use of the information contained herein.

Neither SEIKO EPSON CORPORATION nor its affiliates shall be liable to the purchaser of this product or third parties for damages, losses, costs, or expenses incurred by purchaser or third parties as a result of: accident, misuse, or abuse of this product or unauthorized modifications, repairs, or alterations to this product.

SEIKO EPSON CORPORATION and its affiliates shall not be liable against any damages or problems arising from the use of any options or any consumable products other than those designated as Original EPSON Products or EPSON Approved Products by SEIKO EPSON CORPORATION.

EPSON is a registered trademark of SEIKO EPSON CORPORATION.
IBM and PS/2 are registered trademarks of International Business Machines Corporation.
Macintosh is a registered trademark of Apple Computer, Inc.
Microsoft and Windows are registered trademarks of Microsoft Corporation in the United States of America and other countries.
Presto! is a trademark of NewSoft Technology Corporation.

General Notice: *Other product names used herein are for identification purposes only and may be trademarks of their respective companies.*

Copyright © 2000 by SEIKO EPSON CORPORATION, Nagano, Japan.

Setup Guide

Contents

Safety Instructions

Important Safety Instructions 1
Warnings, Cautions, and Notes. 3
ENERGY STAR Compliance 3

Chapter 1 Getting to Know Your Scanner

Features 1-2
Unpacking the Scanner 1-4
Attaching the Document Guide Strip 1-5
Scanner Parts 1-6
Lights and Buttons 1-7
Options 1-9

Chapter 2 Setting Up the Scanner

Choosing a Place for the Scanner 2-2
Releasing the Transportation Lock 2-4
Plugging in the Scanner 2-5
Initialization 2-6
Connecting the Scanner to Your Computer using the SCSI Interface 2-7
Understanding SCSI connections. 2-8
Setting the SCSI ID number 2-9
Setting the terminator switch 2-10
Connecting the scanner 2-11
Power-on sequence. 2-13
Power-off sequence 2-14
Connecting the Scanner to Your Computer using the USB Interface. 2-15
Understanding USB connections 2-16
Connecting the scanner 2-17

Chapter 3 Installing the Software

System Requirements 3-2
For PCs 3-2
For Macintosh SCSI users. 3-3
For Macintosh USB users 3-4
Installing the Scanner Software for Windows 3-5
For Windows 2000 users 3-5
For Windows 98 users 3-9
For Windows 95 and NT 4.0 users 3-14
Upgrading from Windows 95 to Windows 98 3-20
Upgrading from Windows 98,95 or NT 4.0 to Windows 2000. 3-20
Installing the Scanner Software for Macintosh 3-23
Calibrating Your Screen 3-25
Selecting Scanners 3-27
For Windows 2000 and Windows 98 users 3-27
For Macintosh users 3-29

Chapter 4 Using Your Scanner

Scanning Procedure 4-2
Placing a Document on the Scanner 4-3
Removing the Cover for Thick or Large Documents 4-6
Starting EPSON TWAIN Pro 4-7
Scanning an Image 4-9
Scan. 4-20
Scan All 4-21
Saving the Scanned Image 4-21
Scanning by Pressing the Start button. 4-23
Using the Document Guide 4-24

Chapter 5 Using the Start Button

The Start Button Feature 5-2
PageManager for EPSON 5-3
Target applications in the Scan Buttons bar 5-3
Assigning an application to the Start button 5-4
Adding Applications to the Scan Buttons Bar 5-6
Registering new applications 5-7
Setting Up EPSON Scanner Monitor 5-9
Setting Up the Start Button Feature for Windows 2000 and Windows 98 5-13

Chapter 6 Options

Using the Transparency Unit 6-2
Unpacking the Transparency Unit 6-2
Removing the shipping screw 6-3
Transparency Unit Start button 6-4
Installing the Transparency Unit 6-4
Film holders and reflective document mat 6-7
Positioning transparencies for scanning 6-8
Scanning normal documents 6-16
Adjusting the angle of the transparency guide 6-18
Using the Automatic Document Feeder 6-19
Unpacking the Automatic Document Feeder 6-19
Installing the Automatic Document Feeder 6-20
Loading documents in the Automatic Document Feeder 6-23
Loading documents manually 6-25
Scanning from the Automatic Document Feeder 6-26
Changing the orientation of scanned images 6-28
Fixing paper jams in the Automatic Document Feeder . . . 6-31
Document specifications 6-33
Using the IEEE 1394 Scanner I/F Card 6-35
Installing the IEEE 1394 Scanner I/F Card in your scanner 6-35
Understanding IEEE 1394 connections 6-38
Connecting to your computer 6-38
Installing the Scanner Software 6-40

Glossary

Index

Safety Instructions

Important Safety Instructions

Read all 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.
- ❏ 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 allow 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.
- ❏ Except as specifically explained in this *User's Guide*, 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 case 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.)

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

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

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

Warnings, Cautions, and Notes

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

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

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

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.

Chapter 1

Getting to Know Your Scanner

Features 1-2

Unpacking the Scanner 1-4
Attaching the Document Guide Strip 1-5

Scanner Parts 1-6

Lights and Buttons 1-7

Options 1-9

Features

The EPSON EXPRESSION 1640XL scanner offers the following features:

- ❏ Optical resolution of 1600 dots per inch (dpi) for main scanning, and 3200 dpi with micro step for sub scanning (42-bit input, 42-bit output).
- ❏ A3/USB (Ledger) size scanning area.
- ❏ Start Button control for shortcut local and scanning operation over a network.

  In a stand-alone configuration, the Start button can automatically start a scanning sequence by invoking Page Manager and EPSON TWAIN Pro, scanning documents, launching a graphical application and importing the scanned image to the application.

  In a network configuration, pressing the Start button on the scanner starts the same operation as clicking the **Scan** button in the EPSON TWAIN Pro Network dialog box.
- ❏ Full color or grayscale scanning. Capture your images with up to 440 billion colors, or up to 16,384 shades of gray.
- ❏ EPSON TWAIN Pro lets you take full advantage of your scanner's advanced features.
- ❏ EPSON TWAIN Pro Network and EPSON Scan Server software work together to directly control all of the features of your EPSON scanner on a network.
- ❏ EPSON TWAIN Pro and TWAIN Pro Network's Unsharp Mask option automatically sharpens the image to provide crisp detail.

- ❏ EPSON TWAIN Pro and TWAIN Pro Network's De-screening option automatically removes unwanted moiré patterns from scanned images for higher quality output.

- ❏ Auto Area Segmentation (AAS) allows you to separate text from photographs on a page so that grayscale images are clearer and text recognition is more accurate.

- ❏ Text Enhancement Technology (TET) enhances text recognition accuracy for optical character recognition (OCR) scanning.

- ❏ The Automatic Document Feeder, which enables continuous sheet scanning, is available as an option.

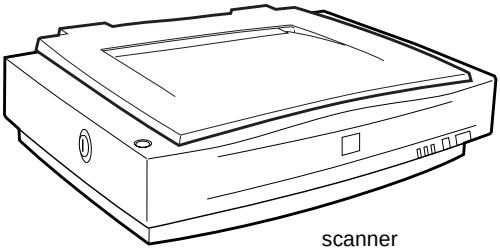
- ❏ The Transparency Unit, which allows you to scan negatives and slide film, is available as an option.

- ❏ The IEEE 1394 Scanner I/F Card, which enables high-speed data transfer and vastly enhances your scanner's connectivity, is available as an option.

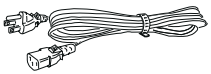
- ❏ The EPSON Network Image Express scan server, which allows you to share your scanner on a network without the need for a scanner server PC, is available as an option.

Unpacking the Scanner

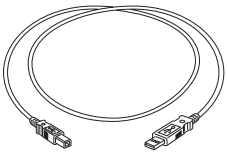
Your EPSON EXPRESSION 1640XL comes shipped with CD-ROMs which include the driver software that runs your scanner, and some additional items, depending on the place of purchase.



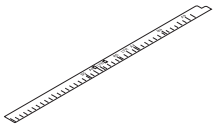
scanner



power cord



USB interface cable



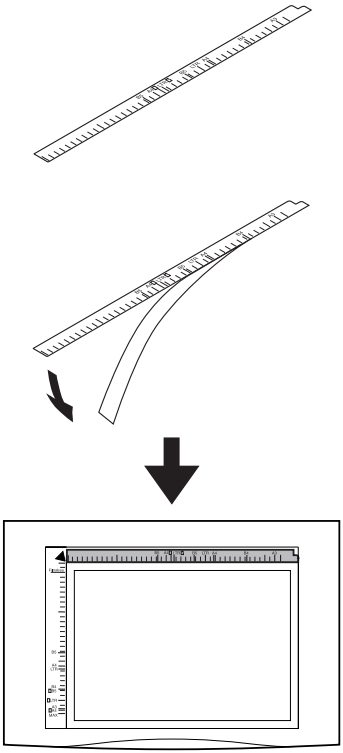
Document Guide Strip

Document Guide and adjust pins

Attaching the Document Guide Strip

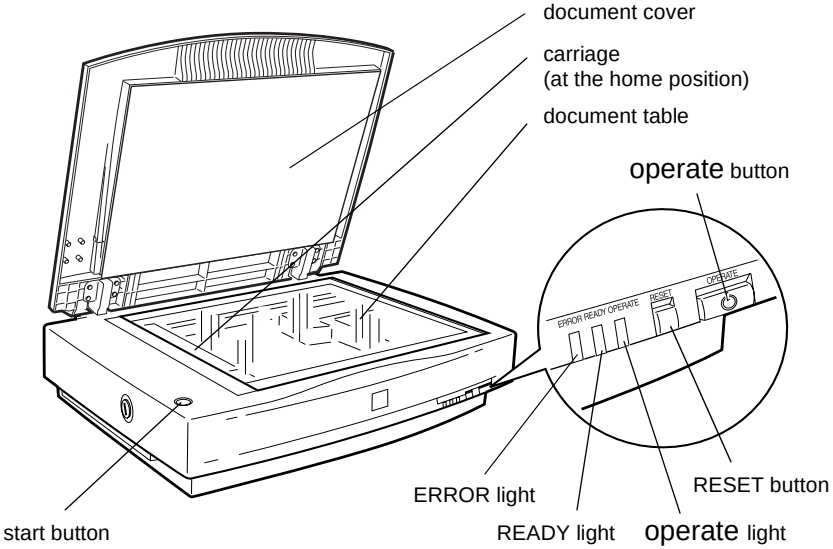
The document guide strip is designed to help you properly align your documents when placing them on the document table.

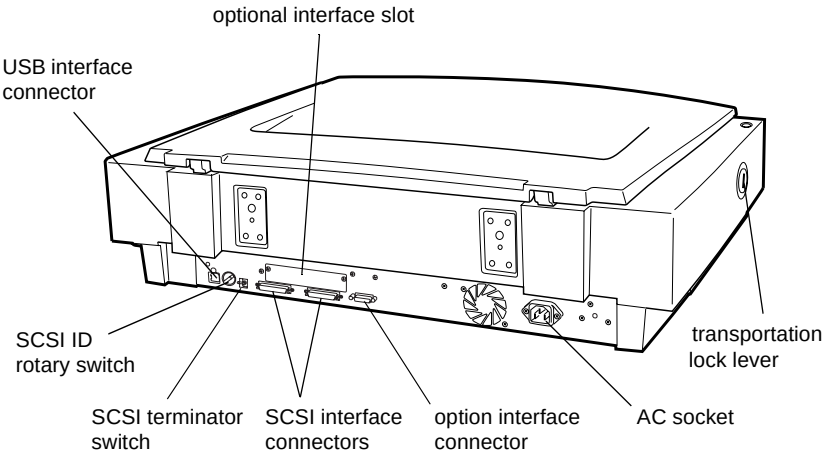
Peel off the backing from the document guide strip, then place the strip directly on the horizontal ruler of the document table as shown in the illustration.



Note:
Be sure to remove the document guide strip from the document table before using the optional Automatic Document Feeder.

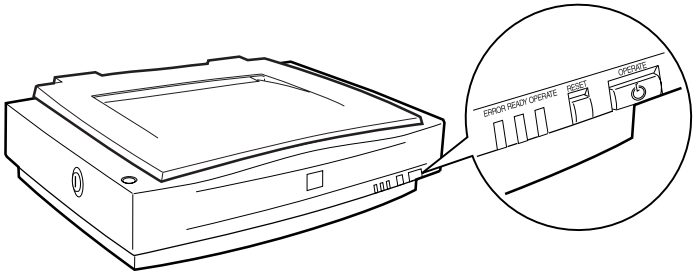
Scanner Parts





Lights and Buttons

The scanner has three indicator lights and three buttons.



Lights

Lights	Color	Indicator Status	Meaning
OPERATE	Green	Lit	Scanner is turned on.
READY	Green	Lit	Scanner is ready to scan.
		Flashing	Scanning operation is in progress. Error. See your *Online Reference Guide*.
ERROR	Red	Lit	This indicator also lights when an error occurs. Error. See your *Online Reference Guide*.
		Flashing	

Buttons

Button	Function
OPERATE	Turns the scanner on and off.
RESET	Resets the scanner to its default settings after an error. Pressing this button while scanning is in progress stops the scanner and may cause an error in the scanning software.
start	When the scanner is connected directly to your computer, this button starts scanning and transfers the scanned image to a pre-assigned application. When using the scanner in a network environment, this button has the same function as the Scan button in EPSON TWAIN Pro Network. To use this button, you need to set up your scanning software as explained in Chapter 5.

Options

The following optional items are available to expand the versatility of your scanner. For detailed information on the use of these options, see Chapter 6, "Options."

Automatic Document Feeder (B81321*)
Designed primarily for optical character recognition (OCR) scanning, the Automatic Document Feeder allows you to scan up to 100 single- or double-sided pages automatically, then use the scanned text in word processing programs as if you had typed it yourself. This option feeds the document from the top page down, which preserves the original page order.

Transparency Unit (B81320*)
Allows you to scan transparent materials; primarily 35 mm slides and filmstrips. The Transparency Unit's reading area allows you to scan film up to 290 × 420 mm in size.

IEEE 1394 Scanner I/F Card (B80834*)
Allows you to connect your computer or scanner to other devices which support the IEEE 1394 standard.

EPSON Network Image Express (B80836*)
Enables an EPSON scanner supporting EPSON TWAIN Pro Network to become shareable on a network without the need for a scanner server PC. This allows you to perform various scanning operations in a network environment using less power and space. See the manual that comes with this product for more information.

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

Chapter 2

Setting Up the Scanner

Choosing a Place for the Scanner 2-2

Releasing the Transportation Lock 2-4

Plugging in the Scanner 2-5

Initialization 2-6

Connecting the Scanner to Your Computer using the SCSI Interface 2-7
- Understanding SCSI connections 2-8
- Setting the SCSI ID number 2-9
- Setting the terminator switch 2-10
- Connecting the scanner 2-11
- Power-on sequence 2-13
- Power-off sequence 2-14

Connecting the Scanner to Your Computer using the USB Interface 2-15
- Understanding USB connections 2-16
- Connecting the scanner 2-17

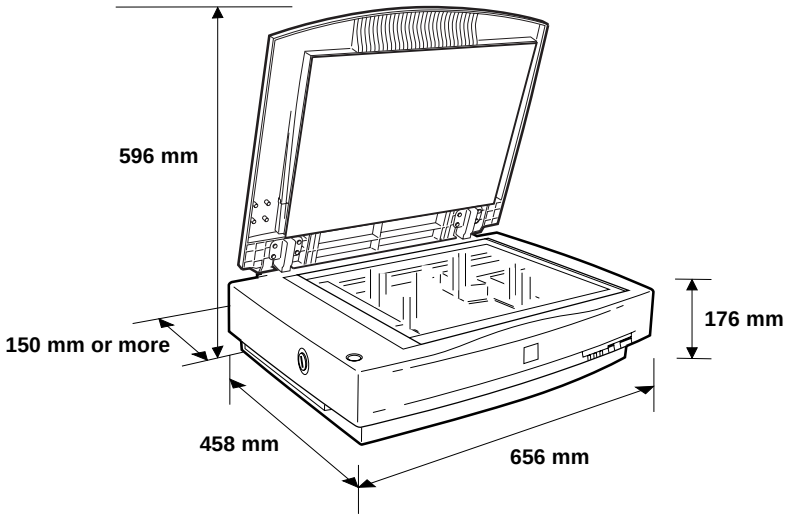
Choosing a Place for the Scanner

Follow the guidelines below when selecting a location for your scanner:

- ❏ Place the scanner on a flat, stable surface. The scanner will not operate properly if it is tilted at an angle.
- ❏ Place the scanner close enough to the computer for the interface cable to reach it easily.
- ❏ Place the scanner near a wall outlet where the power cord can be easily unplugged.

  Note for French-speaking users:
  Placez le scanner près d'une prise de courant où la fiche peut-être débranchée facilement.

- ❏ Allow space behind the scanner for the cables, and space above the scanner so that you can fully raise the document cover.



- ❑ Keep the scanner away from high temperatures, humidity and excessive dirt or dust. Also avoid using or storing the scanner in places subject to rapid changes of temperature and humidity.

- ❑ Keep the scanner away from direct sunlight and strong light sources.

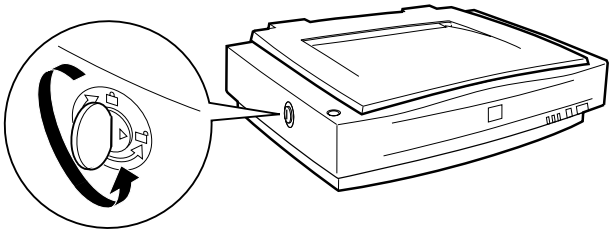
- ❑ Avoid places subject to shocks and vibrations.

Releasing the Transportation Lock

When the scanner is unpacked, the carriage is locked in the home position to prevent damage from shaking or vibration during transportation. You must release the transportation lock before you can use the scanner.

1. Place the scanner on a flat, stable surface with its left side facing you.

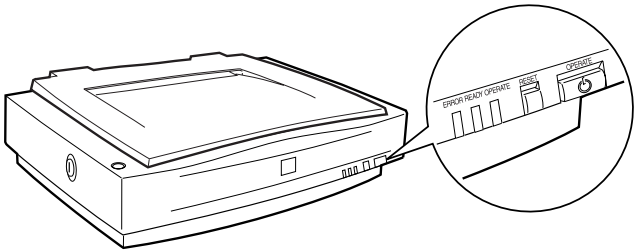
2. Turn the transportation lock to the unlocked position using a coin or a similar object, as shown below.



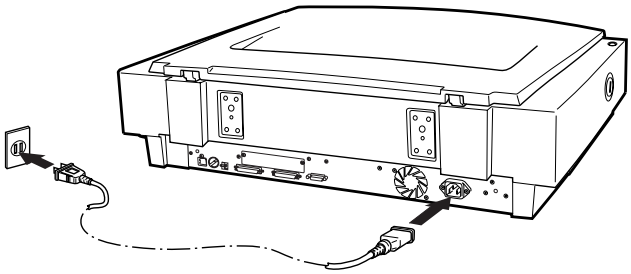
Note:
Before you transport the scanner or store it for an extended period of time, secure the carriage by turning the transportation lock back to the locked position. For more information, see "Maintenance and Troubleshooting" in your Online Reference Guide.

Plugging in the Scanner

1. Make sure that the scanner is turned off. The scanner is off when the ⏻ **OPERATE** button is raised.



2. If the power cord is not attached to the scanner, connect it to the AC inlet on the back of the scanner, and plug the other end into a properly grounded electrical outlet.



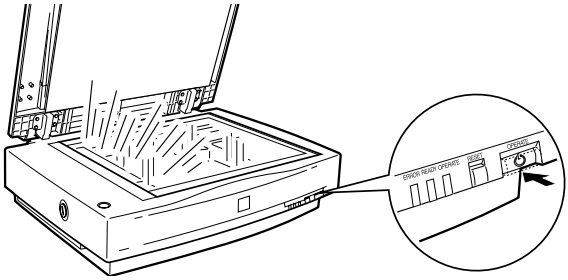
Caution:
It is not possible to change the scanner's voltage. If the label on the back of the scanner does not show the correct voltage for your location, contact your dealer. Do not plug in the power cord.

Initialization

By observing the scanner's initialization, you can make sure that the scanner is operating properly before you connect it to your computer.

1. Open the document cover so you can see the operation of the scanner during initialization.

2. Turn on the scanner by pressing the ⏻ **OPERATE** button.



While the scanner initializes, the fluorescent lamps on the carriage flash. If the carriage is not at the home position (the left of the scanner), it moves to the home position.

When the scanner has completed its initialization, the **READY** light comes on. If the scanner does not work as described, turn it off. Make sure that the power cord is firmly plugged in and that you have released the transportation lock screw, then turn it on again.

Caution:
Whenever you turn off the scanner, wait at least 10 seconds before turning it back on. Rapidly turning the scanner on and off can damage the scanner.

Connecting the Scanner to Your Computer using the SCSI Interface

For instructions on connecting the scanner to your computer using the SCSI interface, read this section.

Note for Macintosh Users:
Be sure to install the scanner software before connecting the scanner to your computer. See "Installing the Scanner Software for Macintosh" on page 3-23 for details.

For PC users:

Unless your PC already has a SCSI board installed, you need to install one, along with SCSI driver software. Install the SCSI board according to the directions included with it.

If your PC has a SCSI board up and running, connect the scanner as described in the next section.

Note:
You will need to install the SCSI driver that is normally included with Windows 2000, 98, 95, or NT (see your system documentation for instructions), or the driver described in the SCSI board installation documentation.

For Macintosh users:

Your Macintosh may or may not have SCSI ports, depending on which model you own. If you have a Macintosh that does not have a SCSI port, you need to install a SCSI board and driver. Follow the directions below to connect your scanner and computer.

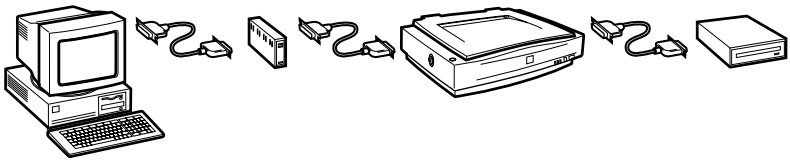
Note:
The latest driver may be available for download from the Web site of the SCSI board manufacturer.

Understanding SCSI connections

Read the following sections to determine how to set up your SCSI devices and whether you need any optional SCSI cables.

Daisy Chain

The SCSI interface allows you to connect up to seven devices (such as a scanner, hard disk, CD-ROM, and so on) to the computer, in what is called a "daisy chain" arrangement. Only the first SCSI device in a daisy chain is connected to the computer; each of the other devices is connected to another SCSI device.



SCSI Cables

You may need to purchase SCSI cables before setting up your SCSI daisy chain. Be sure the SCSI cable connectors are suitable for your hardware, depending on the maker of your SCSI device and SCSI interface board.

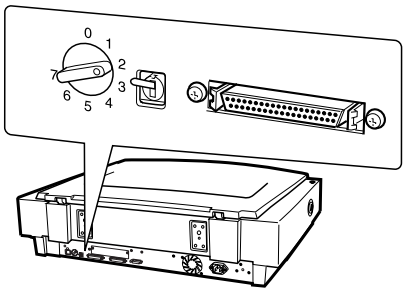
SCSI ID and terminator

Each device has a SCSI ID number: the computer is usually number 7, and each of the other devices must have a different number between 0 and 6. Also, the first device and the last device in the chain (not including the computer) must have a terminator. No other device can have a terminator, or if a terminator does exist, it must be turned off or removed.

Setting the SCSI ID number

The scanner's default SCSI ID number is 2.

The SCSI ID rotary switch is located at the back of the scanner.



If you add the scanner to a system in which one of your SCSI devices already has a SCSI ID of 2, change the ID number to an unused number using the rotary switch. See the table below as a guide.

ID	Availability	Description
0	Not available for Macintosh	Used for hard disk
	Not recommended for Windows	Usually used for hard disk
1	Not recommended	Usually used for hard disk
2		Factory setting of the scanner
3		Not available if your Macintosh has a built-in CD-ROM
4		
5		
6		
7	Not available for Macintosh	Always used for the Macintosh itself
	May not be available for Windows	Usually used for the SCSI board

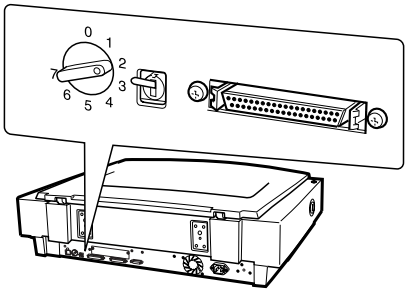
Caution:
Do not set the SCSI ID to an ID number that is already assigned to another device otherwise the computer, scanner, and other devices will not operate properly.

Setting the terminator switch

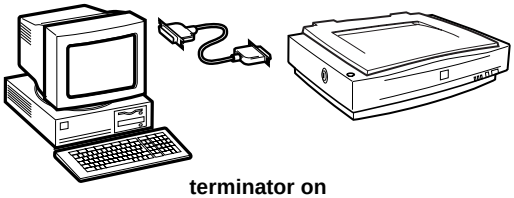
The scanner has a built-in terminator, which allows SCSI devices to communicate properly with each other. You may need to change the terminator switch setting according to your computer system.

Note:
Do not use an external terminator.

The terminator switch is located at the back of the scanner.

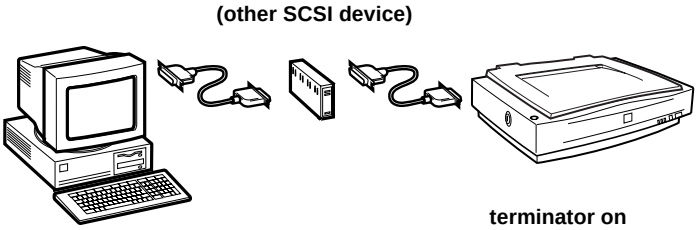


Only the scanner is connected

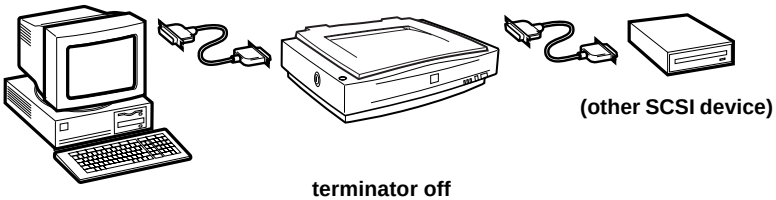


terminator on

The scanner is the last device in the daisy chain



The scanner is in the middle of the daisy chain



Connecting the scanner

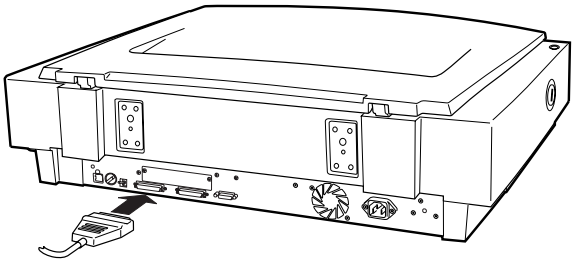
Connect the scanner to your computer or to another SCSI device as follows:

Note:
The combination of connectors on the SCSI interface cable you need varies depending on the maker of your SCSI device and SCSI interface board.

1. Make sure the scanner, computer, and all other SCSI devices are turned off and unplugged from the power source.

Caution:
Do not connect the scanner to the computer or other devices while they are turned on as damage may occur.

2. Connect one end of the interface cable to one of the scanner SCSI connectors until the locks on both sides snap in.



Note:

- ❏ *To connect the scanner to a PC or any other SCSI device, the total length of cable in the daisy chain must not exceed 3 meters; otherwise the system may not work properly.*

- ❏ *Make sure no other interface is used.*

3. Connect the other end of the cable to the SCSI port of your computer or another SCSI device.

Note:
The SCSI port on the Macintosh is the larger port with the SCSI icon over it.

4. Plug in the power cords of your computer, scanner, and other external SCSI devices.

Note:
Before turning on your system, be sure to read "Power-on sequence" following.

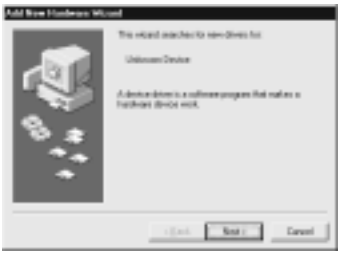
Power-on sequence

Keep the following in mind every time you turn on your computer and SCSI devices, including the scanner.

- ❑ Be sure to turn on the SCSI device which is connected at the farthest end of the daisy chain first, then the second farthest and so on, until finally your computer. If you attempt to use a SCSI device which has been turned on after the computer, it may not work properly, or the computer may not work properly.

- ❑ **For Windows 2000, 98, or 95 users:**
  The first time you turn on the computer after turning on the scanner, one of the following dialog boxes or similar may appear.

Windows 95



Windows 98

Windows 2000

If you see one of these, follow the installation instructions in Chapter 3, then see “Power-off sequence” following.

Power-off sequence

Keep the following in mind every time you turn off your computer and SCSI devices.

- ❏ When you are finished using your system, turn off your computer first, then the scanner and other SCSI devices in reverse order of the power-on sequence.
- ❏ While using your computer, do not turn off any SCSI device which has a terminator that is active (on).
- ❏ Do not turn the scanner off and back on while using your computer, otherwise the scanner may not work properly.

When the connection is complete, you need to install the scanner software. See Chapter 3, “Installing the Software,” for instructions.

Connecting the Scanner to Your Computer using the USB Interface

Your PC must have been purchased with Windows 2000 or Windows 98 preinstalled, and have a working USB port.

Your Macintosh computer must be running system 8.5 or later and have a built-in USB port.

Note for Macintosh Users:
Be sure to install the scanner software before connecting the scanner to your Macintosh. See Chapter 3, "Installing the Scanner Software for Macintosh," for details.

Understanding USB connections

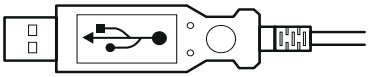
USB Cables

USB cables enable you to connect or remove peripherals to and from your computer easily, without having to shut down and restart the system each time a peripheral is plugged in or unplugged. You do not have to set an ID number or a terminator.

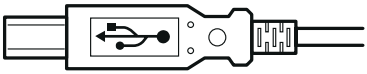
Note:
Do not connect or disconnect USB cables when the scanner is in use.

USB cables have 2 different connectors at each end.

Type A connects to your computer.



Type B connects to your scanner.



USB hub

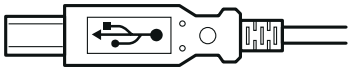
You can also use a USB hub, allowing you to increase the number of USB ports and therefore connect several peripherals.

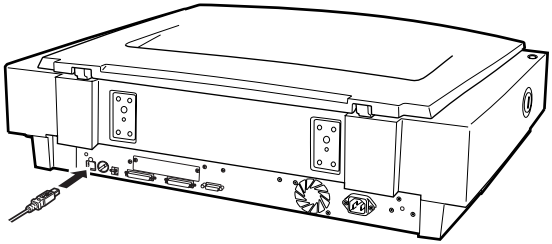
Note:
If you connect your scanner through more than one hub, your system may not work properly. In this case, try connecting the scanner directly to the computer's USB port. Also, your system may not work properly if you use a USB cable other than that supplied by EPSON.

Connecting the scanner

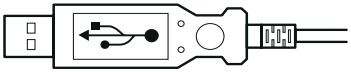
To connect the scanner to your computer or USB hub:

1. Connect one end of the cable (Type B) to the USB port on the back of the scanner.





2. Connect the other end of the cable (Type A) to the USB port on your computer, or USB hub.



Note:

- ❑ *USB cables enable you to connect the scanner whether your computer is on or off. If you connect the scanner while your computer is on, the "Add New Hardware Wizard" dialog box (Windows) or a message telling you that the scanner driver needs to be installed (Macintosh) will appear. When this happens, follow the instructions in Chapter 3, then install the software.*

- ❑ *Connect the USB cable to your computer, then install or start the scanner software. Do not connect or disconnect the USB cable while the scanner software is open.*

- ❑ *Make sure no other interface is used.*

Chapter 3

Installing the Software

System Requirements 3-2
For PCs 3-2
For Macintosh SCSI users 3-3
For Macintosh USB users. 3-4

Installing the Scanner Software for Windows. 3-5
For Windows 2000 users 3-5
For Windows 98 users 3-9
For Windows 95 and NT 4.0 users 3-14
Upgrading from Windows 95 to Windows 98 3-20
Upgrading from Windows 98,95 or NT 4.0 to Windows 2000 3-20

Installing the Scanner Software for Macintosh 3-23

Calibrating Your Screen 3-25

Selecting Scanners 3-27
For Windows 2000 and Windows 98 users. 3-27
For Macintosh users 3-29

System Requirements

Before installing the scanner software, make sure that your system meets the following requirements.

For PCs

For Windows SCSI users

Scanner:	EPSON EXPRESSION 1640XL
System:	Microsoft® Windows® 2000, Windows® 98, Windows® 95, or Windows NT® 4.0
Interface:	Adaptec® SCSI adapter
Display:	VGA or higher resolution monitor 640 × 480 screen resolution (800 × 600 or higher recommended), and 256 color (65,000 color or higher recommended)

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

For Windows USB users

Scanner: EPSON EXPRESSION 1640XL

System: Microsoft® Windows® 2000 or Windows® 98 preinstalled

Interface: The computer's USB port (TYPE A receptacle)

Display: VGA or higher resolution monitor 640 × 480 screen resolution (800 × 600 or higher recommended), and 256 color (65,000 color or higher recommended)

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

For Macintosh SCSI users

Scanner: EPSON EXPRESSION 1640XL

System: Apple® Macintosh® with a PowerPC processor (excluding the PowerBook 100) running OS 8.0 or later

Note:
The included software cannot be used with the Multiple Users function of Mac OS 9.

Interface: SCSI adapter

Display: Color Monitor, 640 × 480 screen resolution (or higher recommended), and 256 color (32,000 color or higher recommended)

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

For Macintosh USB users

Scanner: EPSON EXPRESSION 1640XL

System: A USB-equipped Macintosh with OS 8.5 or later

Note:
The included software cannot be used with the Multiple Users function of Mac OS 9.

Interface: USB port

Display: Color Monitor, 640 × 480 screen resolution (or higher recommended), and 256 color (32,000 color or higher recommended)

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

Installing the Scanner Software for Windows

After connecting the scanner to your computer, install the scanner software from the CD-ROM. The installation steps differ for different versions of Windows.

For Windows 2000 users, see the instructions on this page. For Windows 98 users, see "For Windows 98 users" on page 3-9. For Windows 95 and NT 4.0 users, see "For Windows 95 and NT 4.0 users" on page 3-14.

Note:

- ❑ *If you are upgrading Windows 95 or 98 to Windows 98 or Windows 2000, uninstall EPSON TWAIN Pro before you upgrade. After you upgrade, reinstall EPSON TWAIN Pro. For more information, see "Upgrading from Windows 98,95 or NT 4.0 to Windows 2000" on page 3-20 or "Upgrading from Windows 95 to Windows 98" on page 3-20.*

- ❑ *To install the scanner software in Windows 2000 or NT 4.0, you need to log on to Windows as an Administrator.*

For Windows 2000 users

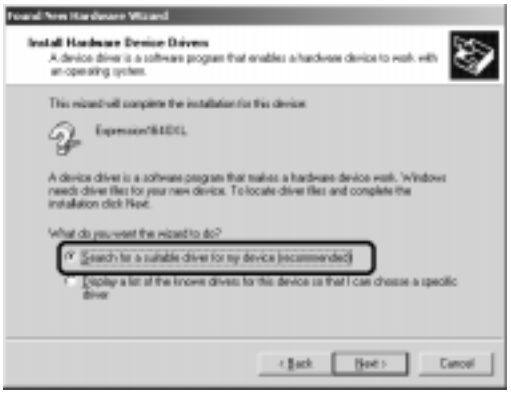
1. Connect your scanner to your computer.

2. Turn on the scanner, then your computer.

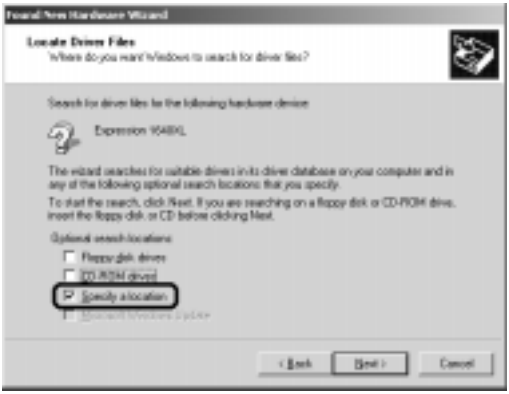
   Note:
   It is important to follow this power on sequence if you are using a SCSI interface. Otherwise the Plug and Play feature will not work.

3. When the dialog box shown below appears, insert the scanner software CD in the CD-ROM drive, then click **Next**.

4. Select the **Search for a suitable driver for my device** option, then click **Next**.



5. Make sure only **Specify a location** is selected, and click **Next**.



6. Browse and select, or type in the CD-ROM drive letter, **EPSON** folder, and folder of your preferred language, and the **Win2000** folder as the location, as shown below, then click **OK**.

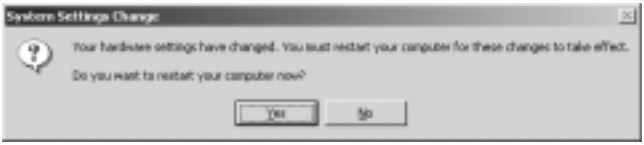
7. Follow the instructions on the screen. When the dialog box shown below appears, click **Yes** to continue.

Note:
If you click **No** *and stop installation, your scanner will appear under* **Other Devices** *with a* **?** *mark in the Device Manager menu. To reinstall EPSON TWAIN Pro, follow the instructions "Uninstalling EPSON TWAIN Pro" on page 3-20 to uninstall your scanner before installing EPSON TWAIN Pro again.*

8. After installation, follow the on-screen instructions to calibrate your screen. For details, see "Calibrating Your Screen" on page 3-25.

9. When the dialog box shown below appears, click **Finish**.

10. If the dialog box shown below appears, click **Yes** to restart your computer.



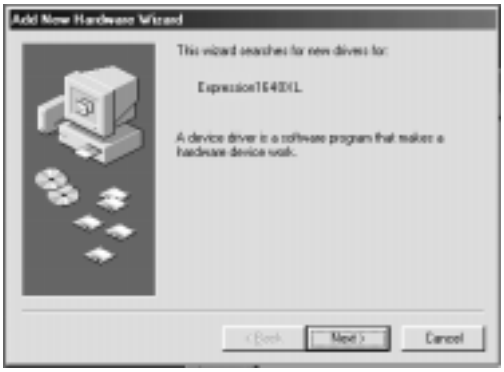
This completes the EPSON TWAIN Pro installation. Next, install the utility software and applications from the CD-ROM. See "Installing the applications" on page 3-12 to install application software.

For Windows 98 users

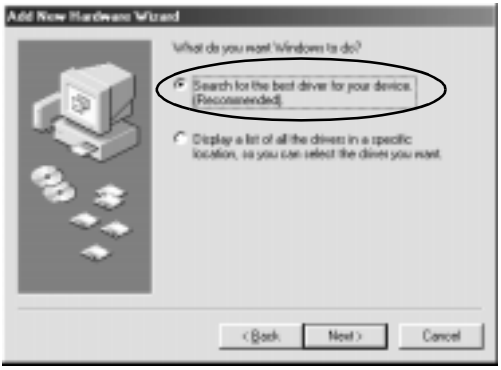
1. Make sure that the scanner is turned on.

2. Turn on the computer, and start Windows.

3. When a dialog box similar to the one shown below appears, insert the scanner software CD in the CD-ROM drive, then click **Next**.



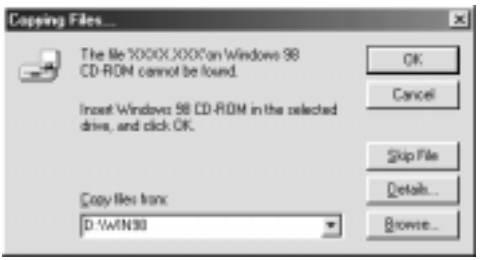
4. Select the **Search for the best driver for your device** option, then click **Next**.



5. Make sure the **Specify a location** check box is selected, then browse and select or type in the CD-ROM drive letter, **EPSON** folder, the folder of your preferred language, and **Win98** folder as the location, then click **Next**.

6. Follow the instructions on the screen. Depending on your system, you may be asked to insert the Windows 98 CD-ROM. If so, insert the Windows 98 CD-ROM. If not, go to step 7.

Make sure that the correct CD-ROM drive letter and the Win98 folder are specified in the **Copy files from:** box as shown below.

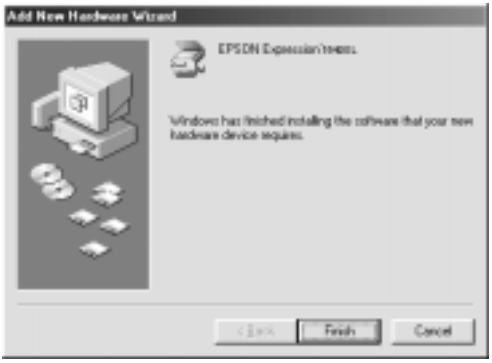


After installing the appropriate files, remove the Windows 98 CD-ROM and replace the scanner software CD.

7. The EPSON Screen Calibration utility automatically starts. Follow the instructions on the screen.

Note:
If the EPSON Screen Calibration utility doesn't start automatically, see "Calibrating Your Screen" on page 3-25 to calibrate your screen after installing the scanner software.

8. When the dialog box shown below appears, click **Finish**.



This completes the EPSON TWAIN Pro installation. Next, install the utility software and applications from the CD-ROM.

Installing the applications

1. Double-click the **My Computer** icon.

2. Double-click the CD-ROM drive icon. A dialog box asking for your preferred language appears on your screen. If no dialog box appears, double-click the **Cdsetup.exe** icon.

3. Select your preferred language and click **OK**.

4. The following dialog box appears. Click **Add Software**.

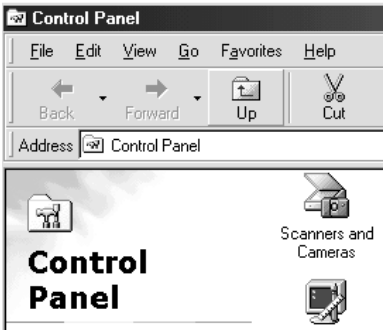
5. You will see the available software displayed in the list box. Click to select the names of the software you want to install in your PC. Make sure PageManager for EPSON is selected.

6. Click **OK**, and follow the instructions on the screen. The setup program installs the selected software.

Note:

- ❑ *If folders for the applications on the CD-ROM contain README files, double-click and read them. README files contain the latest information about software.*

- ❑ *The* **Scanners and Cameras** *icon will appear the Control Panel after EPSON TWAIN Pro is installed.*



For Windows 95 and NT 4.0 users

1. Make sure that the scanner is turned on.

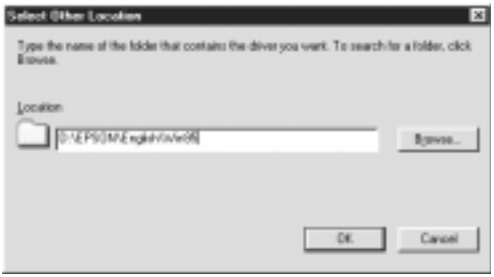
2. Turn on the computer, and start Windows.

   If you are using Windows NT 4.0, insert the scanner software CD in the CD-ROM drive. Go to step 3.

   If you are using Windows 95, one of the following dialog boxes will appear.

   ❑ If the dialog box shown below appears, insert the scanner software CD in the CD-ROM drive, then click **Next**.

When you are asked for the drive and folder, select the CD-ROM drive, **EPSON** folder, your language preference, and **Win95** folder. An example is shown below.



When a dialog box similar to the one shown below appears, click **Finish** and go to step 3.

❑ If the dialog box shown below appears, insert the scanner software CD in the CD-ROM drive.

Select **Driver from disk provided by hardware manufacturer**, then click **OK**, then **Browse**.

Select the CD-ROM drive, **EPSON** folder, the folder of your preferred language, and the **Win95** folder, then click **OK**. Go to step 3.

3. Double-click the **My Computer** icon.

4. Double-click the CD-ROM drive icon. A dialog box asking for your preferred language appears on your monitor. If no dialog box appears, double-click the **Cdsetup.exe** icon.

5. Select your preferred language and click **OK**.

6. The following dialog box appears. Click **Add Software**.

7. You will see the list of software in the list box. Click to select the names of the software you want to install in your PC. Make sure EPSON TWAIN Pro and PageManager for EPSON are selected.

8. Click **OK**, then follow the instructions on the screen.

   The setup program installs EPSON TWAIN Pro, EPSON Scanner Monitor and PageManager for EPSON.

9. After EPSON TWAIN Pro is installed, the EPSON TWAIN Pro dialog box appears.

10. Make sure that **SCSI** is selected and your EPSON scanner appears in the Scanner Selection list. If not, see “Maintenance and Troubleshooting” in your Online Reference Guide.

11. Click **Test** to check the connection. If everything is properly installed and connected, Status: Device Ready appears under Scanner Information in the dialog box.

If the "Device Ready" message does not appear, see your software manual.

12. Click **OK** to close the EPSON TWAIN Pro dialog box.

The EPSON Screen Calibration utility automatically starts. Follow the instructions on the screen. For details, see "Calibrating Your Screen" on page 3-25.

Upgrading from Windows 95 to Windows 98

Before you upgrade from Windows 95 to Windows 98, you need to uninstall EPSON TWAIN Pro. Follow the steps below.

Uninstalling EPSON TWAIN Pro

1. Click **Start** and select **Programs** then **EPSON Scanner**, and then click **EPSON TWAIN Pro Uninstall**.

2. Click **Yes** to uninstall.

3. Click **OK** to finish.

After you uninstall EPSON TWAIN Pro, upgrade to Windows 98, then install EPSON scanner software as described on"Installing the Scanner Software for Windows" on page 3-5.

Upgrading from Windows 98,95 or NT 4.0 to Windows 2000

Before you upgrade from Windows 98, 95, or NT 4.0 to Windows 2000, you need to uninstall EPSON TWAIN Pro. Follow the steps below.

Uninstalling EPSON TWAIN Pro

The following will describe uninstalling EPSON TWAIN Pro for Windows 98 users. Follow the steps above for Windows 95 and NT 4.0 users.

For Windows 98 Users

1. Connect your scanner to your PC. Turn on your scanner, then turn on your PC.

2. Click **Start,** select **Settings**, then select **Control Panel**.

3. Double-click the **Scanners and Cameras** icon in Control Panel.

4. Select your scanner from the installed devices list, then click **Remove**.

5. Click **OK** to close the dialog box.

Updating to Windows 2000

After uninstalling EPSON TWAIN Pro, follow the instructions below to update your system to Windows 2000.

1. Turn off your PC and your scanner, and then disconnect your scanner from your PC.

2. Turn on your PC and install Windows 2000.

3. Connect your scanner and install EPSON TWAIN Pro following the instructions “Installing the Scanner Software for Windows” on page 3-5.

During Windows 2000 installation

If a dialog box like the one shown below appears and asks for the updated files for your scanner while you are installing Windows 2000, click **Next** and continue installation. Do not click **Provide Files...**.

Note:
If you insert the Scanner Software CD and click **Provide Files...**, *an error message may appear. Replace the scanner software CD with the Windows 2000 CD-ROM and continue installing Windows 2000. After finishing the Windows 2000 installation, you need to uninstall your scanner from the Device Manager and reinstall EPSON TWAIN Pro. See "Recovering from Scanner Software Installation Problems on Windows 2000 and Windows 98" in your Online Reference Guide to uninstall EPSON TWAIN Pro.*

Installing the Scanner Software for Macintosh

Before connecting the scanner to your Macintosh computer, you must first install the EPSON scanner software; EPSON TWAIN Pro, EPSON Scanner Monitor, PageManager for EPSON and other application software from the CD-ROM. Follow the steps below.

1. Turn on the computer.

2. Insert the CD in the CD-ROM drive.

3. Double-click the **EPSON TWAIN Pro** folder.

   The EPSON TWAIN Pro folder contains multiple-language versions of the software. Double-click the folder of your preferred language.

4. Double-click the **EPSON TWAIN Pro Installer** icon.

Note:
If you are using an EPSON scanner or EPSON Stylus Scan with a USB port and have installed EPSON TWAIN or EPSON Stylus Scan FB/SF TWAIN on your Macintosh, do the following before you install the scanner software:

1) Go to **Control Panels** *in the Apple Menu.*
2) Open **Extensions Manager**.
3) Clear the check box next to **EPSON Scanner Monitor USB Extension**.
4) Restart your Macintosh.

5. The dialog box pictured below appears. Click **Install** and follow the instructions on the screen.

When you have finished the entire installation, click **Restart** to complete the installation. The EPSON Screen Calibration utility automatically starts, see "Calibrating Your Screen" on page 3-25 for details. After finishing screen calibration, the computer will restart. Continue from step 6 below to install other software.

6. Double-click the folder that contains the software you want to install.

   The software folder contains multiple-language versions of the software. Double-click the folder of your preferred language.

7. Double-click the installer icon to start the installation program. Then follow the instructions on the screen.

8. After installing the software, connect the scanner to your computer as described in Chapter 2. (Keep in mind the "Power-on sequence" on page 2-13 if you are using a SCSI interface.)

Calibrating Your Screen

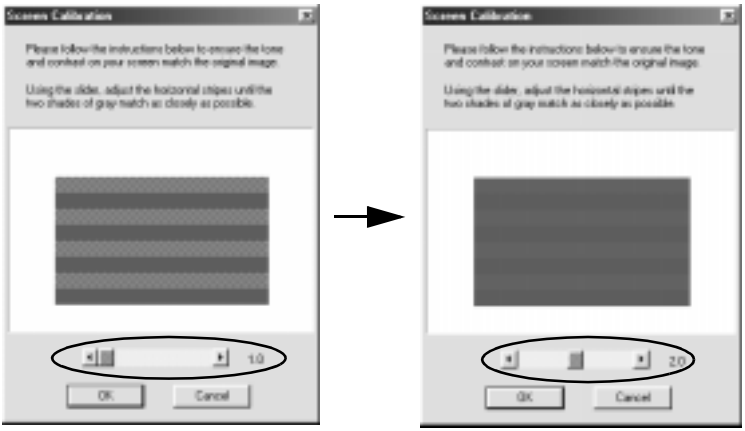
You must calibrate your screen and scanner to reproduce images identical to the originals.

Note for Windows 2000, 98, and Macintosh users:
The introductory Screen Calibration dialog box will not appear. Follow the instructions from step 2 below to calibrate your screen.

During the EPSON scanner software installation on Windows, the following dialog box appears.

1. Click **Next**.

2. The following dialog box or similar appears. Move the slider to the right or left until the two shades of the gray horizontal stripes match.



Note:
View the screen from a distance. The gray stripes will not perfectly blend together; however, try to make the two tones match as closely as possible.

3. Click **OK** to register the calibration setting.

4. The message “Setup is complete” appears. Click **OK**.

You will not need to change the screen calibration again so long as you continue to use the same display.

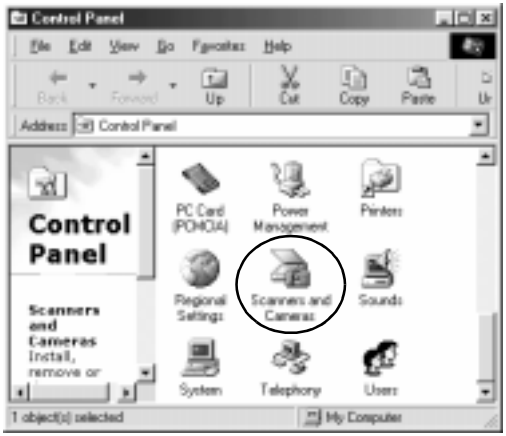
Selecting Scanners

If you connect several scanners that are supported by EPSON TWAIN Pro to your computer, follow the instructions below to select which scanner to use.

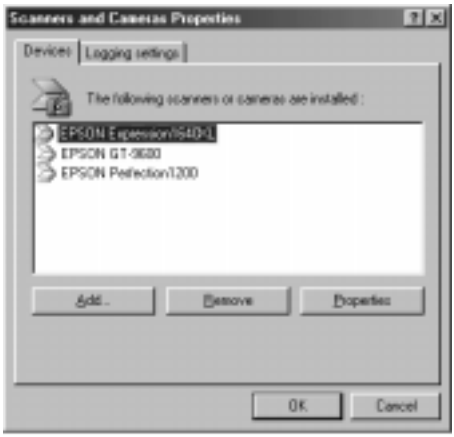
Note:
You can only connect and use scanners that are the same model if you use different interface connections.

For Windows 2000 and Windows 98 users

1. Double-click the **Scanners and Cameras** icon in Control Panel.



2. Select a scanner you want to use from the installed scanners and cameras list in the Scanners and Cameras Properties dialog box. Click **Property**, and then click the **Utility** tab.



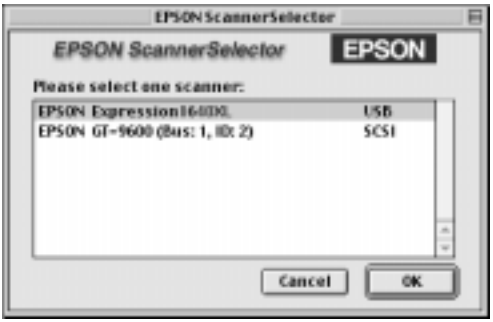
3. Make sure **Select as default scanner for EPSON TWAIN Pro** is selected and then click **OK**.

Note:
If you have installed EPSON Scan Server, you can set up your scanner to be used over the network by selecting the **Select as default scanner for EPSON Scan Server** *check box.*

For Macintosh users

1. Choose **Control Panels** from the Apple menu. Then click the **EPSON ScannerSelector** icon.

2. Select the scanner you want to use from the list in the EPSON ScannerSelector dialog box and click **OK**.



Chapter 4

Using Your Scanner

Scanning Procedure. 4-2

Placing a Document on the Scanner 4-3

Removing the Cover for Thick or Large Documents 4-6

Starting EPSON TWAIN Pro 4-7

Scanning an Image 4-9

Scan 4-20

Scan All 4-21

Saving the Scanned Image 4-21

Scanning by Pressing the Start button 4-23

Using the Document Guide 4-24

Scanning Procedure

This chapter explains how the scanner operates. The basic procedure for scanning is as follows:

1. Turn on the scanner. (Keep in mind the "Power-on sequence" on page 2-13.)

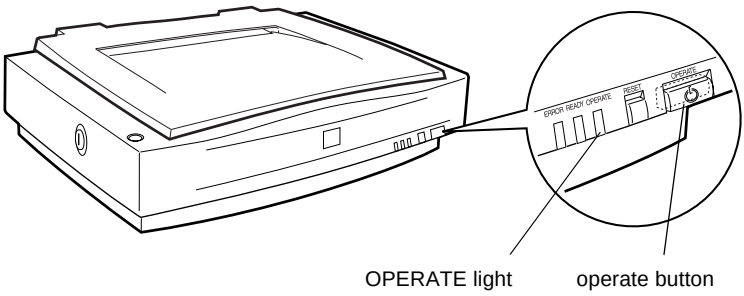
2. Place the document you want to scan on the document table. (This is described in detail in the next section.)

3. Run the scanner software and scan. (See "Starting EPSON TWAIN Pro" on page 4-7 for details on scanning.)

Placing a Document on the Scanner

Before scanning a document, remember to respect the rights of copyright owners. Do not scan published text or images without first checking the copyright status.

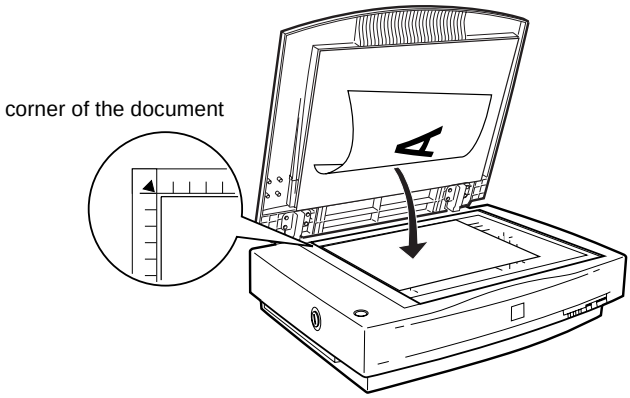
1. Turn on the scanner by pressing the ⏻ **OPERATE** button. The **OPERATE** light comes on.



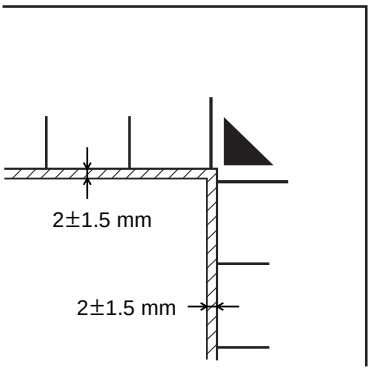
2. Turn on the computer and make sure that the scanner's **READY** light is on.

3. Open the document cover.

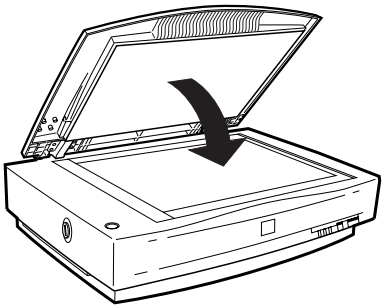
4. Place the document on the document table, with the side to be scanned facing down. Make sure that the document is carefully aligned.



Note:
An area 2±1.5 mm from the horizontal and the vertical edges of the document table glass will not be scanned.



5. Close the document cover gently so that the document does not move.



Note:

- ❏ *Make sure the document is flat against the glass surface, otherwise the image will appear fuzzy and out of focus. Also be sure to close the document cover to prevent interference from external light.*

- ❏ *Always keep the document table clean. See "Maintenance and Troubleshooting" in your Online Reference Guide.*

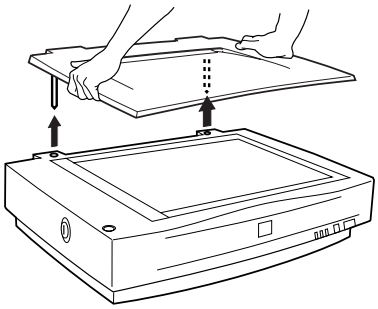
- ❏ *Do not leave photographs on the document table for an extended period of time as they may stick to the glass.*

- ❏ *Do not place heavy objects on top of the scanner.*

6. Start your scanner software, and follow scanning instructions described later in this chapter or your Online Reference Guide.

Removing the Cover for Thick or Large Documents

For thick documents or other materials, you can remove the document cover. To do this, hold the back of the document cover behind the hinge and lift straight up.

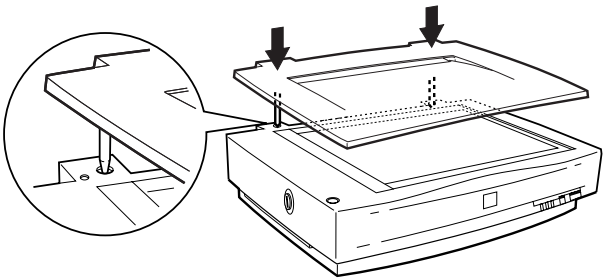


Hold the back of the document cover and lift straight up.

Note:
When scanning with the cover removed, make sure you cover any exposed areas of the document table to prevent interference from external light.

Caution:
Do not force the cover off the scanner or lift the cover from in front of the cover hinge. Doing so can cause damage to the cover.

When you are finished scanning, reattach the document cover by pushing straight down on the back of it clicks into place.



Starting EPSON TWAIN Pro

There are two ways to scan; with an application that supports TWAIN, or with the Start button and preassigned application software.

If you...

- ❏ use an application that supports EPSON TWAIN Pro to scan, open your application. See "Starting EPSON TWAIN Pro through your application" below.

- ❏ want to scan an image directly to your application without opening EPSON TWAIN Pro or the TWAIN-compliant application every time, set up the Start button and the assign an application. See Chapter 5, "Using the Start Button." Then simply press the Start button.

  Note:

  - ❏ *Even if your application supports TWAIN, some features of EPSON TWAIN Pro may not be available depending on your application.*

  - ❏ *Windows 2000 or NT 4.0 users who use the NTFS file system and do not have Administrator privileges need to have permission to modify the following folders and subfolders:*

    EPSON TWAIN Pro Users:
    C:\WINNT\TWAIN_32\EPFBPRO

    EPSON TWAIN Pro Network Users:
    C:\WINNT\TWAIN_32\EPFBPRON

Starting EPSON TWAIN Pro through your application

Applications that support the scanning interface standard TWAIN, allow you to scan images while an application is running. To verify whether your application is compatible with TWAIN, see your application documentation.

How to open EPSON TWAIN Pro and scan varies depending on the application. Read the following to find out how to access EPSON TWAIN Pro.

1. Start your application. For example, Presto! PageManager for EPSON.

2. Select **Select Source** from the File menu, and then select **EPSON TWAIN Pro** on Windows and Macintosh.

   Note:
   You usually need to perform this step only the first time you use the scanner with your application.

3. Choose **Acquire** from the File menu to open EPSON TWAIN Pro.

To scan, see the next section.

Scanning an Image

When you start EPSON TWAIN Pro or EPSON TWAIN Pro Network through a TWAIN-compliant application, the following window or similar appears on the screen:

Note for Macintosh users:
Most illustrations shown in this chapter are for Windows, so they may vary from the actual dialog boxes that appear on your screen. You can use them for reference however, as almost all the settings and functions are the same.

The following gives an overview of EPSON TWAIN Pro and EPSON TWAIN Pro Network.

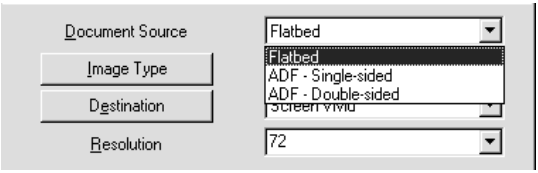
Note:

- ❑ *Some settings may appear dimmed and cannot be selected because of your choice of settings.*
- ❑ *You cannot scan an image that exceeds available memory or disk space. If you attempt to scan an image that is too large, an alert appears on the screen.*
- ❑ *Before you begin scanning, you should calibrate your screen. For details, see your Online Reference Guide.*
- ❑ *After an image is scanned, be sure to save it.*

Document Source

When using the document table of the scanner, leave the Document Source set to **Flatbed**. Other selections are available depending on what is installed.

Note:
Uninstalled options are not displayed.



Select any of the following settings from the Document Source list:

Flatbed:

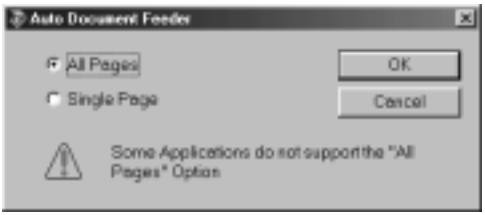
Select this setting when you use the scanner document table.

ADF-Single-sided, ADF-Double-sided:

Select one of these settings when using the optional Automatic Document Feeder. If you are scanning single sided documents, select **ADF-Single-sided**, and if you are scanning double sided documents, select the **ADF-Double-sided** setting.

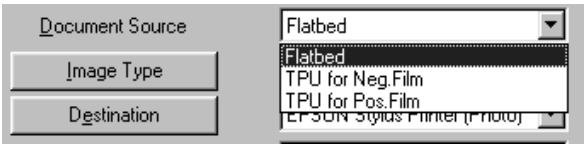
Multi-page support with the Automatic Document Feeder

If you select Auto Document Feeder as the Document Source and click the **Scan** button, the following dialog box appears.



If you select **Single Page**, only one page is fed from the Automatic Document Feeder and scanned.

If you select **All Pages** (default), all the pages are fed from the Automatic Document Feeder and are scanned. Depending on your application, the All Pages option may not work correctly.

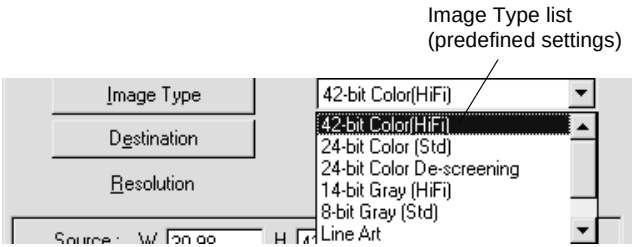


TPU for Neg. Film, TPU for Pos. Film:

Select one of these settings when using the Transparency Unit. If you are scanning negative film, select **TPU for Neg. Film**, and if you are scanning positive film (or slides), select the **TPU for Pos. Film** setting.

Image Type

Use the Image Type list to select the type of image to be scanned.



The Image Type list provides the following predefined settings. Click the arrows on the right to view all of the available settings:

42-bit Color (HiFi):

42-bit colors, high quality

Note:
This setting is available only in certain applications, such as Adobe® Photoshop®.

24-bit Color (Std):

24-bit colors, high quality

24-bit Color De-screening:

24-bit colors, high quality, and de-screening

14-bit Gray (HiFi):

14-bit gray, high quality

Note:
This setting is available only in certain applications, such as Adobe PhotoShop.

8-bit Gray (Std):

256 grays, high quality

Line Art:

Black-and-white, draft quality and fast

OCR:

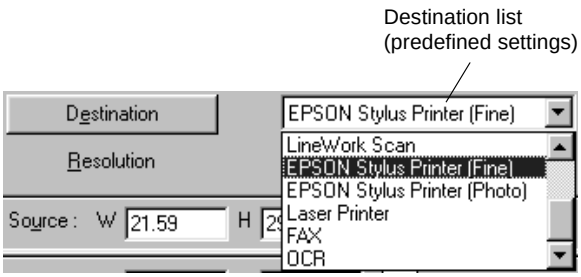
Black-and-white, high quality, and Text Enhancement Technology

Copy & Fax:

Black-and-white, draft quality and fast, and Auto Area Segmentation

Destination

Select the destination, or output device, where the scanned image is to be printed or displayed using the Destination list.



The Destination list provides the following predefined settings.

Screen/Web:

Suitable to display on screen

Prepress (175, 150, 133, 120 lpi):

Optimize for prepress printing at 175, 150, 133, or 120 lines per inch.

LineWork scan:

Optimize for LineWork scanning.

EPSON Stylus Printer (Fine or Photo):

If you are using an EPSON Stylus printer and are printing scanned images with the Economy, Normal, or Fine Print Quality settings in your printer software, selecting **EPSON Stylus Printer (Fine)** is recommended. If you are printing with the SuperFine or Photo Print Quality settings, select **EPSON Stylus Printer (Photo)**.

Laser Printer:

Optimize for printing on a laser printer

Fax:

Suitable for facsimile transmission

OCR:

For optical character recognition scanning

Note:

- ❏ *The effects of the Destination settings cannot be viewed in the Preview window.*
- ❏ *The Online Reference Guide provides you with more information on settings and functions.*
- ❏ *Online help also provides you with information on settings. Click* **?** *to access help.*

- ❑ *You cannot scan an image that exceeds available memory or disk space. If you attempt to scan an image that is too large, an alert appears on the screen.*

- ❑ *Before you begin scanning, you should calibrate your screen. For details, see your Online Reference Guide.*

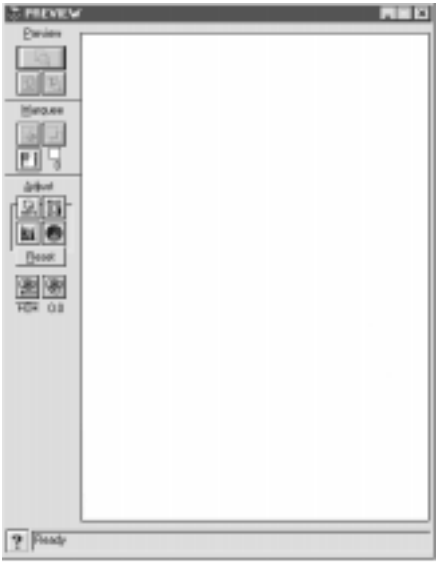
- ❑ *After an image is scanned, be sure to save it.*

Previewing images

To preview an image, click **Preview** in the EPSON TWAIN Pro window.

Note:
You cannot preview an image that exceeds available memory or disk space. If you attempt to preview an image that is too large, an alert appears on the screen.

The following window appears.



You can see the effects of the following settings in the preview image.

- ❏ Pixel Depth, Halftone, and Dropout in the Image Type dialog box
- ❏ Exposure, Gamma, Highlight, Shadow, and Threshold in the Image Controls dialog box
- ❏ Tone Correction in the Tone Correction dialog box
- ❏ Gray Balance Intensity, and Saturation in the Color Adjustment dialog box
- ❏ Auto Exposure

Note:
Although the image in the Preview window changes as you make settings, the settings do not affect the actual image until you scan or rescan the image.

Preview Buttons

Zoom preview button

Clicking the zoom preview button enlarges the active marquee. See the next page for information about marquees.

Return to full preview button

Clicking the return to full preview button restores the image to a full preview. This button is available only when the marquee is zoomed as described above.

Return to zoom preview button

Clicking the return to zoom preview button restores the image to the previous zoom. This button is available only when a marquee has been previously zoomed. This restores the zoom preview from memory, which is quicker than rescanning the same zoom by clicking the zoom preview button again.

Marquees

A marquee is a frame around an entire image, or just a certain part of an image. Marquees are often used in scanning and image-editing software to select only the most important part of an image.

Making and modifying marquees

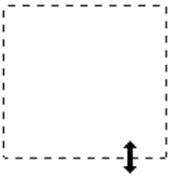
Move the pointer over the image in the Preview window, and the pointer becomes cross-hairs. Drag (move the mouse while holding down the mouse button) the cross-hairs over any area of the image, and a frame appears. The point where you first clicked is anchored, but the rest of the frame is sizable and movable. After you finish creating a marquee, you can resize and move it as described below.

Multiple marquees

You can make multiple marquees in one image to scan the most important parts while ignoring the rest. Marquees can be different sizes, and they can overlap. Extra marquees can be made anywhere except on the frame of another marquee. You can begin a marquee anywhere the pointer appears as cross-hairs. To distinguish the active marquee from other marquees, look at the marquee frames. The active marquee has an animated dashed frame as shown below.

Resizing marquees

When the mouse pointer is placed on the edge of the marquee, it changes to an arrow allowing you to resize the marquee. The double-headed arrows only appear on the active marquee.



If you drag an arrow while pressing the **Shift** key, the marquee will be resized proportionally.

Moving marquees

When the mouse pointer is placed within the active marquee (the frame of the selected image area), the mouse pointer changes to a hand icon. You can click and drag the marquee anywhere in the Preview window.

If you drag a marquee while pressing the **Shift** key, the marquee will be limited to vertical or horizontal movement.

Delete marquee button

Clicking the delete marquee button removes the active marquee.

Note:
You can also delete the active marquee by pressing the **Delete** *key on your keyboard.*

Duplicate marquee button

Clicking the duplicate marquee button creates another marquee the same size as the active marquee. Use this button to make multiple marquees.

Clicking the duplicate marquee button while holding down the keys noted in the table below causes the active marquee to be duplicated in a specific direction.

	Horizontal	Vertical
Windows	Ctrl key	Alt key
Macintosh	Command key	option key

Marquee number indicator

This shows the number of marquees in the Preview window. To create more marquees, see "Duplicate marquee button"above.

Scan

Clicking the **Scan** button scans the image or active marquee in the Preview window. The scanned image is transferred to the application software you used to open EPSON TWAIN Pro so that you can work with the image from within that application.

While scanning, a progress indicator appears. If necessary, click the **Cancel** button to cancel the operation.

Note:

- ❏ *You cannot scan an image whose size exceeds available memory or disk space. If you attempt to scan an image that is too large, an error message appears on the screen.*
- ❏ *Before you begin scanning, you should calibrate your display monitor. For more information, see "Calibrating Your Screen" on page 3-25.*
- ❏ *After an image is scanned, be sure to save it.*

Scan All

Clicking the **Scan All** button scans all of the marquees as separate images, one at a time. This button is available only when there are multiple marquees.

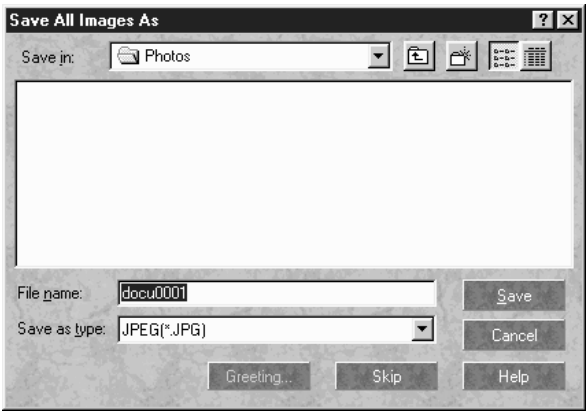
Saving the Scanned Image

- ❏ To save a scanned image in your application, choose **Save** or **Save As** from the File menu. For details, see your application documentation.

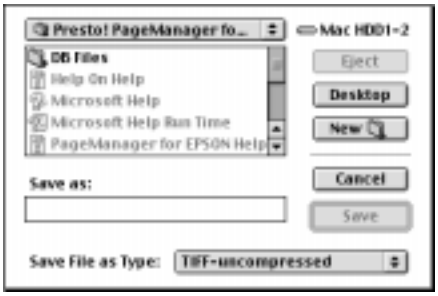
- ❏ To save a scanned image in PageManager for EPSON, follow the steps below.

Note:
Words in parentheses apply to Macintosh users.

1. Choose **Save As** from the File menu. The following dialog box appears on the screen.



Windows



Macintosh

2. Select the folder where the image will be saved.

3. Type a filename for your image in the File Name (Save as) field.

4. Select the file format you want to save the image in from the Save as type field.

5. Click **OK** (**Save**).

Scanning by Pressing the Start button

You can open EPSON TWAIN Pro, start scanning, and have the scanned image sent to a certain application, simply by pressing the Start button on your scanner. To use this feature, you need to install PageManager for EPSON, or other Start button compatible software. When you press the Start button, the following occurs:

- ❏ Windows 2000 and 98 or EPSON Scanner Monitor software on an operating system other than Windows 2000 and 98, detects when the Start button is pressed and sends information to the Start button-compatible application, such as PageManager for EPSON.

- ❏ The Start button compatible application will automatically open EPSON TWAIN Pro, scan the image and process it in the way the application is designed.

Note:

- ❏ *You need to set up the Start button-compatible software before using this feature. See Chapter 5, "Using the Start Button," and the documentation that comes with the application.*

- ❏ *The scanned image will be handled by the software to its maximum capability. For example, using PageManager for EPSON, you can send the scanned image to a printer to print, or convert your scanned OCR image to text format and paste it in a word processing application—all by simply pressing the Start button.*

- ❏ *If the scanner is connected to a PC which is running EPSON Scan Server, the Start Button feature mentioned above is disabled. For information on using the Start button on a network, refer to the EPSON Scan Server & EPSON TWAIN Pro Network User's Guide.*

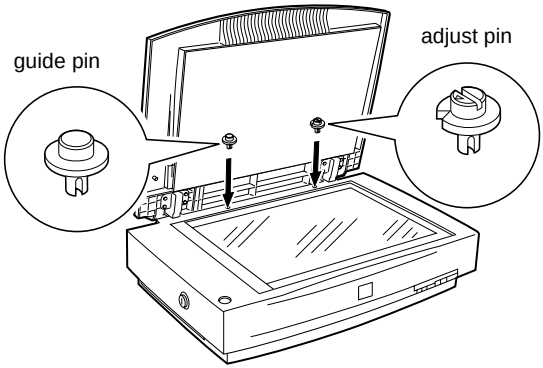
Using the Document Guide

Make sure you have everything shown below, before reading this section.

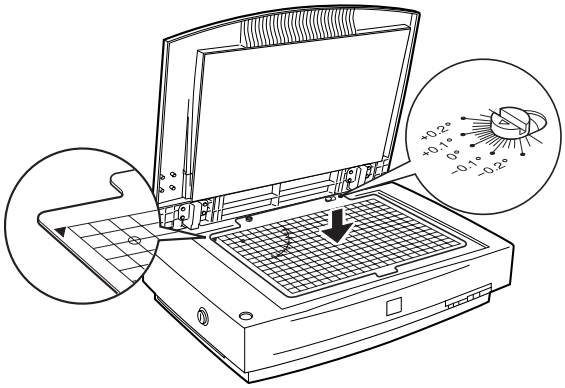
During the scanning operation, the position of the optical reader shifts very slightly as it scans from one side to another. This is normal, and many scanners include a feature to adjust for this shift. This scanner comes with the document guide, which allows you to make incremental changes to the angle of the document to correct for any slight shifts in the scanning process.

There are a few ways to use the document guides, as described in the following pages. If you need to be precise when scanning, use one or both document guides to make the most precise scans possible.

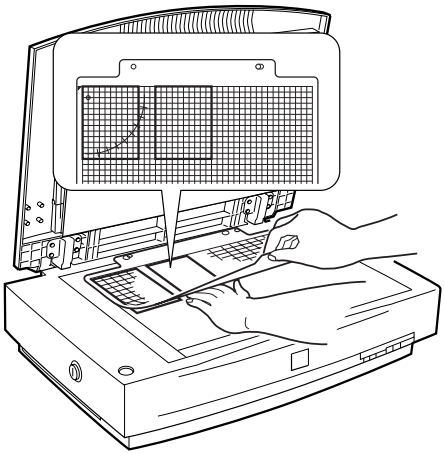
1. Install the pins in the scanner's screw holes through the document guide's holes. The guide pin screws into the left hole and the adjust pin screws into the right hole.



2. Lay the grid document guide on the document table with the document guide holes over the screw holes in the scanner. Make sure the larger document guide hole is on the right (when facing the inside of the cover).



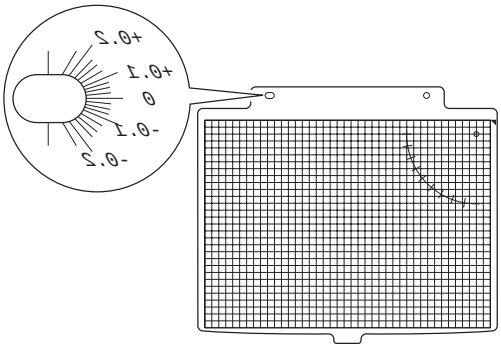
3. Lift up the document guide and insert your document, image, or picture under the guide. Align your document with the guides grid lines. Repeat this step for every document you want to scan, placing one document next to another.



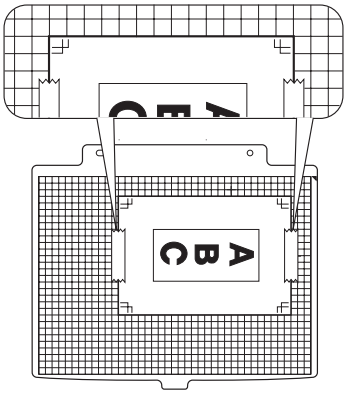
4. Close the cover and scan according to the directions in your Online Reference Guide.

You can also use the document guide according to the directions below, which are helpful if you find that your document slips or doesn't stay aligned using the above method. The method below requires tape.

1. Lay the grid document guide upside down on a flat surface, the long hole will be to the left.

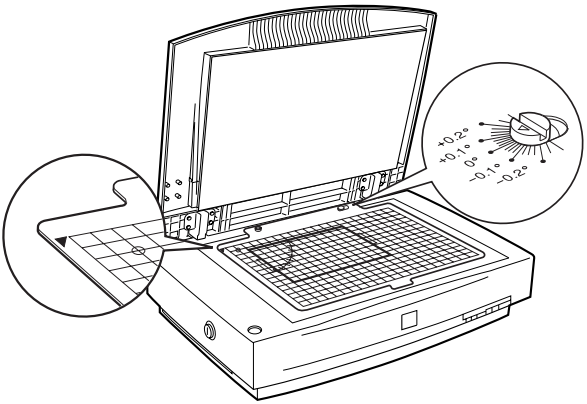


2. Lay your document on the guide with the side to be scanned facing up. After aligning the document to the proper position, use the tape to secure the document in place. Repeat this step for every document you want to scan, placing one document next to another.



3. Install the pins in the scanner's screw holes through the document guide's holes. The guide pin screws into the left hole and the adjust pin screws into the right hole. (See page 4-25)

4. Turn the document guide over, and lay it on the document table with the document guide holes over the screw holes in the scanner. Make sure the larger document guide hole is on the right and your document faces down.



5. Close the cover and scan the image.

Note:
If the scanned image appears slanted, turn the adjust pin using a screwdriver to correct the angle of the document.

The third, and most precise way to use the document guides is described below. This method also requires tape.

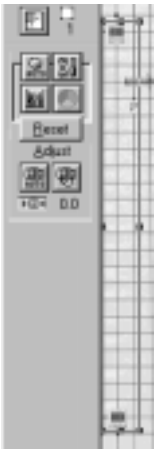
1. Install the pins in the scanner's screw holes through the document guide's holes. The guide pin screws into the left hole and the adjust pin screws into the right hole.(See page 4-25)

2. Lay the grid document guide on the document table with the document guide holes over the screw holes in the scanner. Make sure the larger document guide hole is on the right when facing the inside of the cover. (See page 4-25)

3. Open EPSON TWAIN Pro as described in "Starting EPSON TWAIN Pro" on page 4-7, make the following settings and click **Preview**:

Document Source:	Flatbed
Image Type:	8-bit Gray (Std)
Destination:	LineWork Scan
Resolution:	800 dpi

4. Make a marquee in the preview window to include the document guide's scale A and B, and click **Zoom Preview**.



5. Move the marquee to match its left edge with the left edges of the scales.

6. Click the **Scan** button.

7. Compare the left edges of the scales on the scanned image; the starting points of the scales should match exactly. If both scales start at the same line (for example 0), skip to step 11. Otherwise go to the next step.

Matching			Do not match		
A		starts at 0	A		starts at 0
B		starts at 0	B		starts at 2

8. See the left edges of the scales of the scanned image. Every line of the scale that is missing is equal to 0.4 for mathematical purposes. Then calculate the adjustment angle using the following equation.

   The adjusting angle = (scale A - scale B) / 4

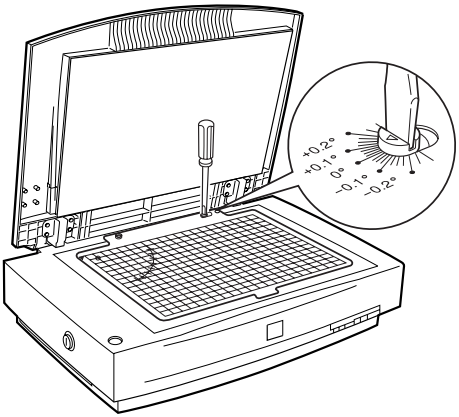
   For example:
   If scale A starts at line 0, then 0 × 0.4 = 0; the value for scale A = 0

   If scale B starts at line 2, then 2 × 0.4 = 0.8; the value for scale B = 0.8

   (0 - 0.8)/4 = -0.2

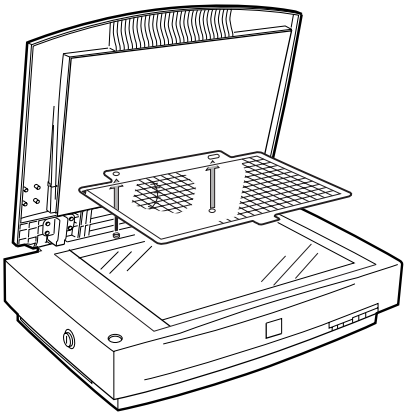
   The angle you need to adjust the adjust pin = -0.2

9. Turn the arrow on the adjust pin to the number indicated by the calculated result (-0.2 in the example above).

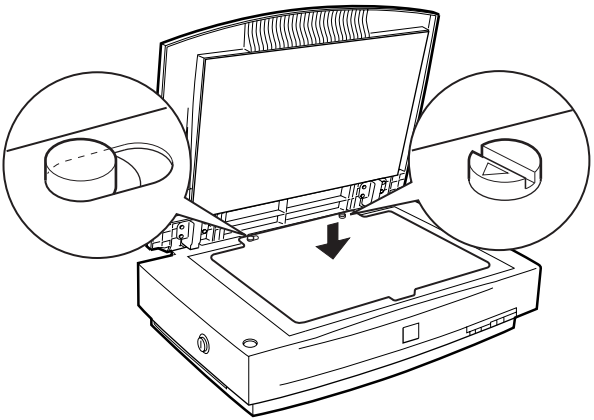


10. To confirm this angle, repeat steps 3 to 8. EPSON recommends you record the adjust pin's position for future reference.

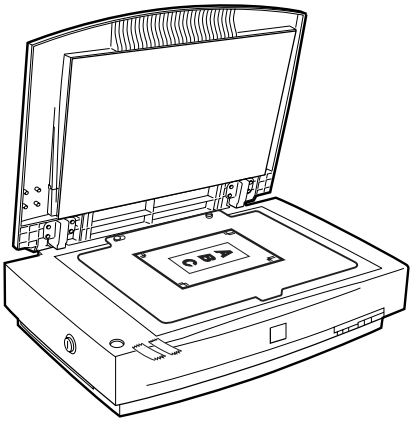
11. Remove the document guide.



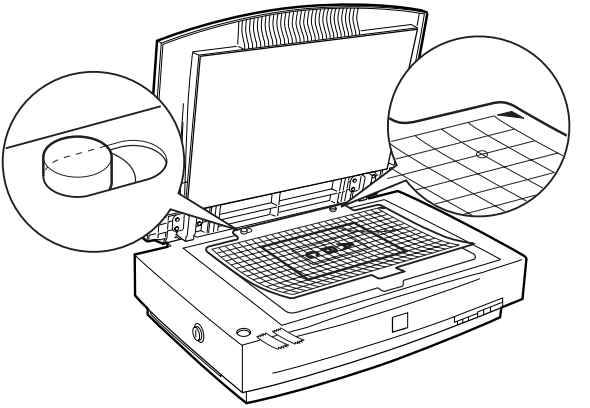
12. Lay the clear document guide on the document table with the document guide holes over the screw holes in the scanner. Make sure the larger document guide hole is on the right when facing the inside of the cover.



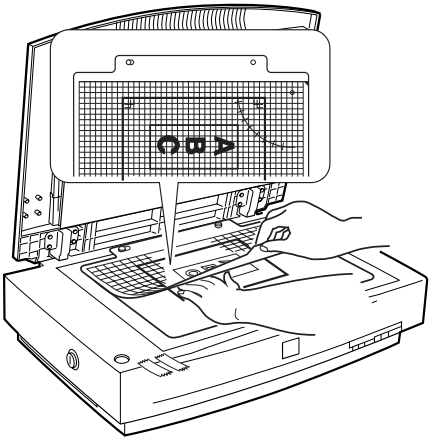
13. Lay your document on the clear document guide with the side to be scanned facing up.



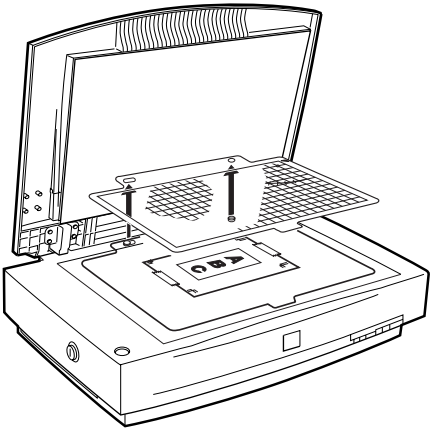
14. Lay the grid document guide on top of your document, with the document guide holes over the screw holes in the scanner. Make sure the larger document guide hole is on the left when facing the inside of the cover.



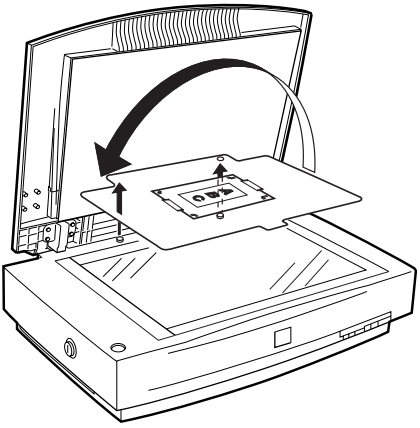
15. Make sure your document is aligned with the grids on the grid document guide. After aligning the document to the proper position, use tape to secure the document in place. Repeat this step for every document you want to scan, placing one document next to another.



16. Remove the grid document guide.



17. Turn the clear document guide over, and lay it on the document table with the document guide holes over the screw holes in the scanner. Make sure the larger document guide hole is on the right and your document faces down.



18. Close the cover and scan the image.

Chapter 5

Using the Start Button

The Start Button Feature. 5-2

PageManager for EPSON 5-3
Target applications in the Scan Buttons bar 5-3
Assigning an application to the Start button 5-4
Adding Applications to the Scan Buttons Bar 5-6
Registering new applications 5-7

Setting Up EPSON Scanner Monitor 5-9

Setting Up the Start Button Feature for Windows 2000 and Windows 98 5-13

The Start Button Feature

The Start Button feature allows you to scan and send data to a target application with a single push of your scanner's Start button. The following sections will help you set up your PageManager for EPSON and EPSON Scanner Monitor software, or Windows 2000 and Windows 98 system, so you can begin to use the Start Button feature.

Note for Windows 2000 and 98 users:
The Start Button feature is supported by Windows 2000 and 98, the EPSON Scanner Monitor software will not be installed onto Windows 2000 and 98. See "Setting Up the Start Button Feature for Windows 2000 and Windows 98" on page 5-13 for instructions on setting up the Start Button feature.

Note:
If the scanner is connected to a PC which is running EPSON Scan Server, the Start Button feature is disabled. For information on using the Start button on a network, refer to the EPSON Scan Server & EPSON TWAIN Pro Network User's Guide.

PageManager for EPSON

PageManager allows you to scan and send data directly to an assigned application with a single push of your scanner's Start button. You can also scan to any target application by simply clicking on the application icon in PageManager's Scan Buttons bar. This section will help you set up PageManager so you can begin to scan using the Start button. For more detailed information on PageManager settings, see your PageManager documentation.

Note:
For information on PageManager installation, see Chapter 3, "Installing the Software."

Target applications in the Scan Buttons bar

When PageManager is started, the Scan Buttons bar will appear on your screen. The icons in this bar represent target applications or peripheral devices, such as a printer, that can be accessed by your scanner. This means that you can scan and send data directly to these applications or devices by clicking on their icons.

PageManager for EPSON also allows you to assign any one of the applications or devices on the Scan Buttons bar to the Start button. This means that an image can be scanned and sent straight to your selected application with one simple push of the Start button.

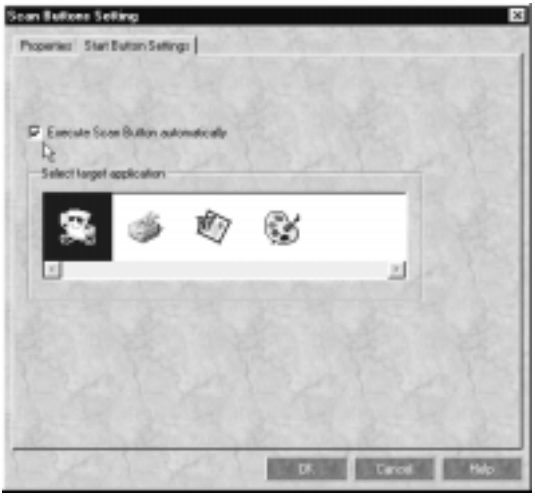
Note:
The application button showing the **Start button** *icon represents the application that is assigned to the Start button.*

Assigning an application to the Start button

To assign an application on the Scan Buttons bar to the Start button, follow the steps in this section.

1. Select the **Scan Buttons Setting** from the File menu.

2. Click the **Start Button Settings** tab in the **Scan Buttons Setting** dialog box. The following dialog box appears.



The icons in Select target application correspond to the icons in the Scan Buttons bar and represent the possible target devices and applications.

3. Select an application from the Select target application box and click **OK**.

The selected application is now assigned to the scanner's Start button.

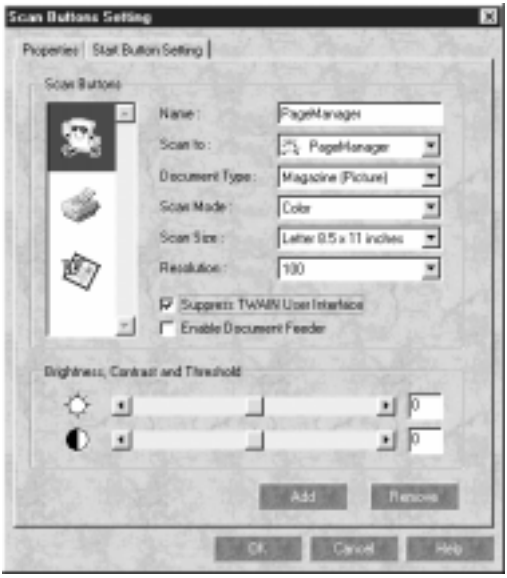
Execute Scan Button automatically check box

When this check box is selected, the assigned application will automatically open and the scanned image is sent to the application when you press the Start button. When this check box is clear, no application is assigned to the Start button and only the Scan Buttons bar will appear when the Start button is pressed. Then you can select an application from the Scan Buttons bar.

Adding Applications to the Scan Buttons Bar

You can add applications appearing in the Application bar at the bottom of the PageManager window to the Scan Buttons bar. Follow the steps below.

1. Select **Scan Buttons Setting** from the File menu. You will see the following dialog box.



2. Specify the name of the setting in the Name box.

3. Click the arrow next to the Scan to box and select the application you want to add to the Scan Buttons bar.

4. Select the appropriate scanning settings (Document Type, Scan Mode, etc.) for the application from this dialog box and click **Add**. Then click **OK**.

   The button of the selected application appears on the Scan Buttons bar.

To remove an application assigned to the Scan Buttons bar, select the application in the box on the left of the dialog box and click **Remove**. Then click **OK**.

Suppress TWAIN User Interface check box

When this check box is selected, the EPSON TWAIN Pro dialog box does not appear when you scan, and the scanner works according to the settings in PageManager. When this check box is clear, the EPSON TWAIN Pro dialog box appears when you scan, and the scanner works according to the settings in EPSON TWAIN Pro.

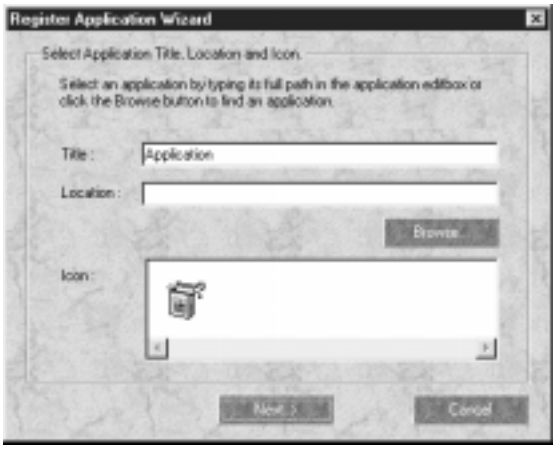
Enable Document Feeder check box

When this check box is selected, the scanner feeds your documents through the Automatic Document Feeder. When this check box is clear, the scanner scans your documents from the document table.

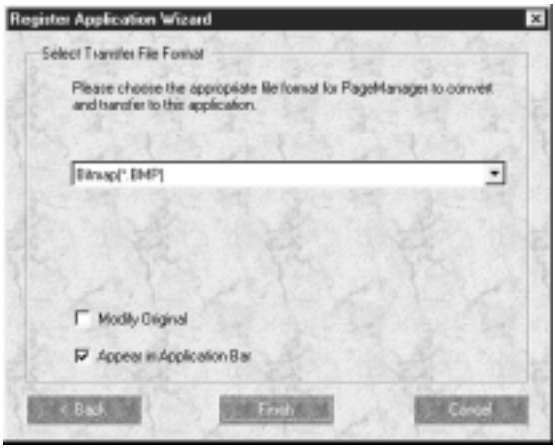
Registering new applications

To add an application to the Scan Buttons bar, you need to register the application. The registered applications will appear in the Scan to: box in the Scan Buttons Setting dialog box.

1. Select **Application Setting** from File menu and then select **Register New Application**. The Register Application Wizard dialog box appears.



2. Specify the application's name, location and icon and click **Next**.



3. Specify the format of the image and click **Finish**.

Setting Up EPSON Scanner Monitor

EPSON Scanner Monitor is software that recognizes when the Start button is pressed and sends information to assigned application software supporting the Start Button feature and EPSON Scanner Monitor, such as PageManager for EPSON.

Once EPSON TWAIN Pro is installed on a Windows 95 system or a Macintosh, EPSON Scanner Monitor is active and identifies PageManager for EPSON as the application that supports the Start Button feature. If you need to turn off Scanner Monitor, or select another application that supports the Start Button feature, access Scanner Monitor as described below.

Note:

- ❏ *The number of applications other than PageManager for EPSON which support both EPSON Scanner Monitor and the Start button feature may be limited.*

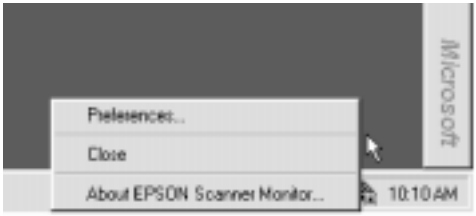
- ❏ *Windows 2000 and 98 support the Start Button feature; therefore, EPSON Scanner Monitor is not installed automatically when you install EPSON TWAIN Pro on Windows 2000 or 98.*

For Windows 95 or NT 4.0 users

Click the Scanner Monitor icon located on the task bar on your desktop.

❑ **Turning off Scanner Monitor**

If you want to turn off Scanner Monitor, select **Close**. However, this will disable the scanner's Start Button feature.



Note:
If you turn off Scanner Monitor, it will turn on again automatically the next time you start Windows.

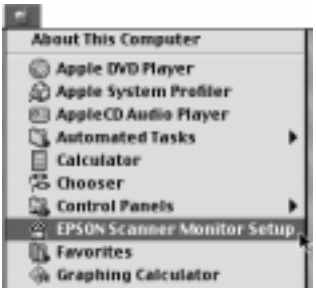
To activate Scanner Monitor again, select **Programs** from the Start menu and click **EPSON Scanner**; then select **EPSON Scanner Monitor**. The Scanner Monitor icon appears in your taskbar.

❑ **Assigning an application to Scanner Monitor**

Select **Preferences**. The EPSON Scanner Monitor dialog box appears. You can select an application that supports the Start Button feature and EPSON Scanner Monitor, such as PageManager for EPSON.

For Macintosh users

Select **EPSON Scanner Monitor Setup** from the Apple menu.



❑ **Turning off Scanner Monitor**

If you want to turn off Scanner Monitor, clear the **Enable Monitoring** check box. However, this will disable the scanner's Start Button feature.

To activate Scanner Monitor again, select the **Enable Monitoring** check box.

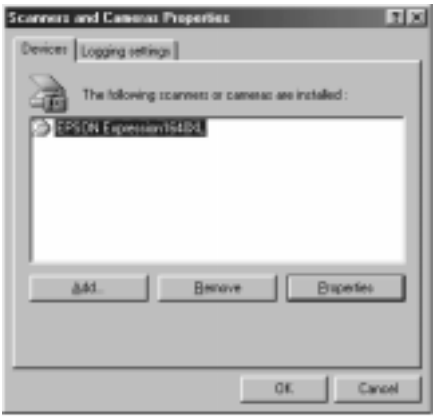
❑ **Assigning an application to Scanner Monitor**

Click **Browse**. Select a folder and an application that supports the Start Button feature and EPSON Scanner Monitor, such as PageManager for EPSON.

Setting Up the Start Button Feature for Windows 2000 and Windows 98

Without having EPSON Scanner Monitor installed, Windows 2000 and 98 allow you to use the Start button on your scanner without having to open an application that supports the Start Button feature. When you press the Start button, you can have a scanned image automatically sent to an application, such as PageManager for EPSON.

Once EPSON TWAIN Pro is installed on Windows 2000 or 98, the **Scanners and Cameras** icon appears in the Control Panel, and your scanner is listed in a **Scanners and Cameras Properties** dialog box similar to the one below.



Assigning an application to the Start button

After you install applications that support "Scanner events", such as PageManager for EPSON, you need to select one of those applications for scanner events.

If you want to use your scanner's Start button with PageManager for EPSON as the supporting application, follow the steps below.

1. Select your scanner from the installed scanners and cameras list in the **Scanners and Cameras Properties** dialog box. Click **Properties,** and then click the **Events** tab.

2. You can see the **Start Button** is listed as a scanner event. Make sure the check box of the application you want to assign to the Start button is selected and all other application check boxes are clear in the **Send to this application** list.

   Note:

   ❏ *If more than one application is selected, a dialog box appears prompting you to select an application when the Start button is pressed.*

   ❏ *Some applications do not support linkage to scanners and digital cameras. Linkage is available only with applications that appear in the Send to this application list.*

3. Close the dialog box by clicking the **OK** button.

Disabling the Start button

If you need to disable the Start Button feature, select the **Disable device event** check box in the **EPSON Expression 1640XL Properties** dialog box. When this check box is cleared, Windows 2000 and Windows 98 will detect if the Start button is pressed and launch the application you selected in the **Send to this application** list.

Chapter 6

Options

Using the Transparency Unit 6-2
- Unpacking the Transparency Unit 6-2
- Removing the shipping screw 6-3
- Transparency Unit Start button 6-4
- Installing the Transparency Unit 6-4
- Film holders and reflective document mat 6-7
- Positioning transparencies for scanning 6-8
- Scanning normal documents 6-16
- Adjusting the angle of the transparency guide 6-18

Using the Automatic Document Feeder 6-19
- Unpacking the Automatic Document Feeder 6-19
- Installing the Automatic Document Feeder 6-20
- Loading documents in the Automatic Document Feeder 6-23
- Loading documents manually 6-25
- Scanning from the Automatic Document Feeder 6-26
- Changing the orientation of scanned images 6-28
- Fixing paper jams in the Automatic Document Feeder . . . 6-31
- Document specifications 6-33

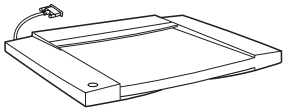
Using the IEEE 1394 Scanner I/F Card 6-35
- Installing the IEEE 1394 Scanner I/F Card in your scanner 6-35
- Understanding IEEE 1394 connections 6-38
- Connecting to your computer 6-38
- Installing the Scanner Software 6-40

Using the Transparency Unit

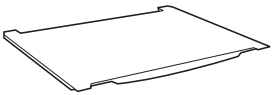
The optional Transparency Unit (B81320*) makes it possible to scan transparencies and slides, in full color. Once you install the Transparency Unit, you can leave it in place even when you want to return to scanning normal (paper) documents.

Unpacking the Transparency Unit

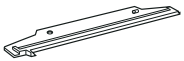
Make sure that all the items shown below are included and have not been damaged during shipping. Contact your EPSON dealer if any item is missing or damaged.



Transparency Unit

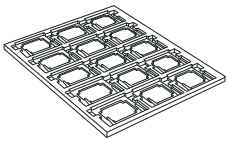


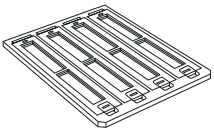
reflective document mat



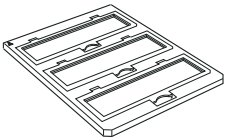
transparency guide

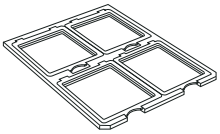
installation screws (4)





film holders



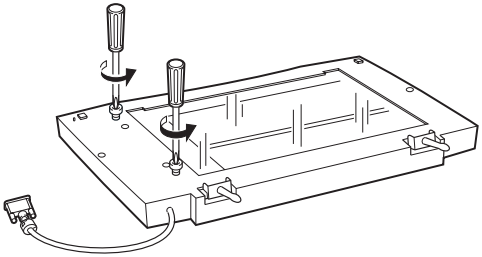


Removing the shipping screw

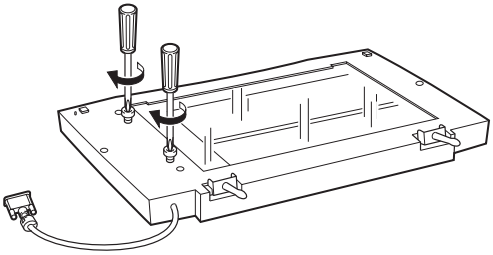
To prevent damage during shipping, a shipping screw is attached to the Transparency Unit. Remove this screw before you attempt to use the Transparency Unit.

1. Turn the unit so the glass side faces up.

2. Remove both shipping screws as shown below.



3. Secure the screws you just removed in the storage holes towards the center of the scanner, as shown below.



Caution:
If either screw is left in an outer hole while using the Transparency Unit, the unit may be damaged.

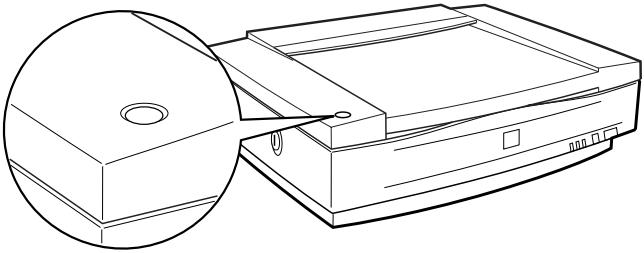
Note:

- ❑ *Before transporting the scanner, remove the Transparency Unit and replace the shipping screws in the outer, transportation holes.*

- ❑ *If the unit's lamp assembly is not in its home position, you cannot replace the shipping screws. If this is the case, reattach the unit to the scanner, close the unit, and turn the scanner on; the unit's lamp assembly then returns to its home position. Turn off the scanner and remove the Transparency Unit.*

Transparency Unit Start button

The Transparency Unit Start button makes it possible to operate the scanner's Start button while using the Transparency Unit.



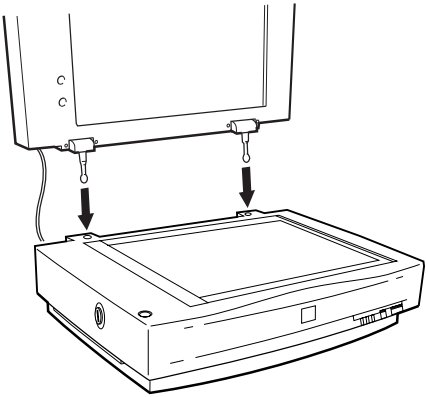
Installing the Transparency Unit

Follow the steps below to install the Transparency Unit.

1. Make sure the scanner is turned off and unplug the power cable from the scanner.

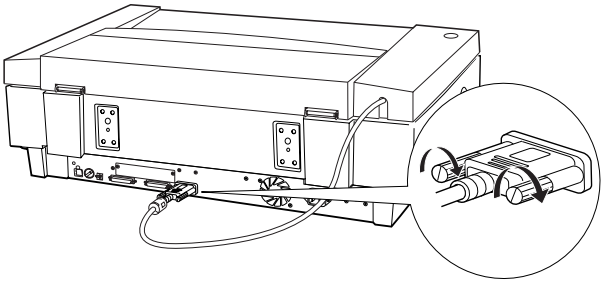
2. Remove the document cover from the scanner by holding the cover behind the hinge and lifting the back of the cover straight up. See"Removing the Cover for Thick or Large Documents" on page 4-6.

3. Align the pins of the unit with the holes of the scanner, and then lower the unit until it rests securely on the scanner with the pins in the holes.



4. Close the Transparency Unit.

5. Connect the Transparency Unit's connector to the option connector at the back of the scanner.



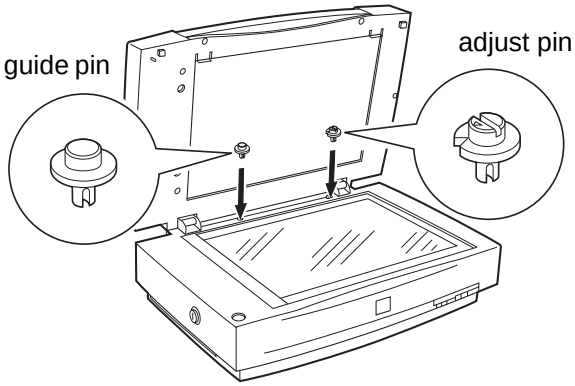
Caution:
Do not put heavy objects on the Transparency Unit; otherwise the unit may be damaged.

Installing the transparency guide

Follow the steps below to install the transparency guide, which is required to use all of the film holders and to scan transparencies.

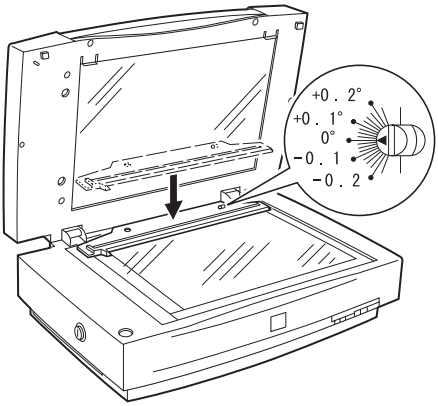
1. Open the Transparency Unit.

2. Insert the guide pin and the adjust pin. Make sure the adjust pin's arrow faces directly towards the center of the guide pin.



Note:
These pins are the same as the ones provided with the scanner, so you do not need to change them if they are already installed.

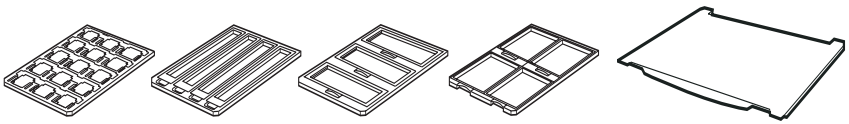
3. Place the transparency guide on the scanner's document table as shown below.



To scan slides or strips of negative or positive film, see the following section.

Film holders and reflective document mat

Four film holders for scanning film, and a reflective document mat for scanning normal paper documents are included with this unit. To use the guides or mat, see the appropriate section in the following pages.



film holders

reflective document mat

Positioning transparencies for scanning

Note:

- ❏ *Be sure to wipe the Transparency Unit glass, the scanner's document table, and the narrow window near the mounting bracket with a soft cloth before scanning transparencies.*

- ❏ *Operation of the Transparency Unit is controlled automatically by your scanner software, so make sure to select* **TPU for Neg. film** *or* **TPU for Pos. film** *as the Document Source setting in EPSON TWAIN Pro depending the type of the material you are scanning.*

- ❏ *Note that if the TPU for Neg. film or the TPU for the Pos. film is selected as the Document Source setting, the focus position is automatically set to 2.5 to accommodate the use of the film holders.*

1. Open the Transparency Unit.

2. Place the transparency into the appropriate holder.

   See the following pages for details on each of the following types of transparencies.

   35 mm film strips . . . . . page 6-9
   Mounted slides. . . . . page 6-11
   120 / 220 film . . . . . page 6-12
   4 × 5 inch film . . . . . page 6-14
   Non-standard film sizes . . . page 6-16

3. Place the film holder on the scanner's glass document table, aligning it with the notch on the transparency guide. Make sure the glossy side of the transparency is facing down.

4. Close the Transparency Unit. If the reflective document mat is installed on the Transparency Unit, remove it.

Use your scanner software to scan the transparency.

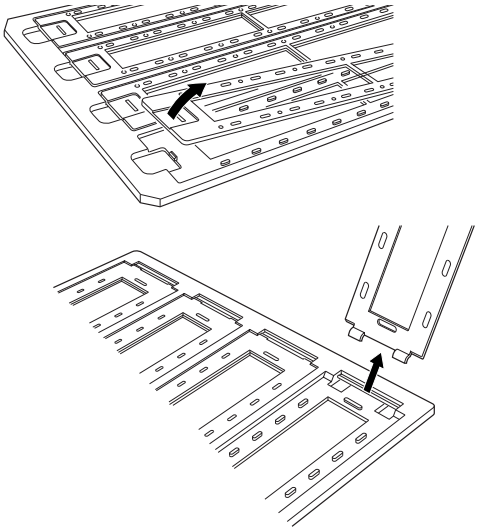
Note:

- ❑ *Make sure the Transparency Unit is completely closed. Otherwise an option error will occur and you will be unable to scan.*

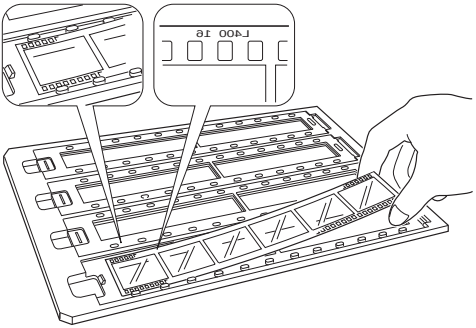
- ❑ *Store the reflective document mat in the Transparency Unit pocket when not in use.*

35 mm film strips

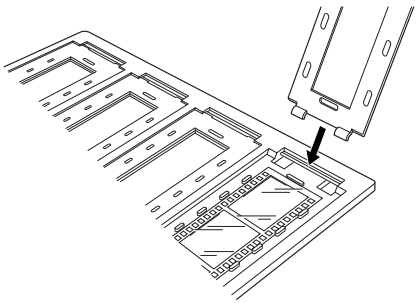
1. Place the 35 mm film holder on a flat surface, and remove a strip cover.



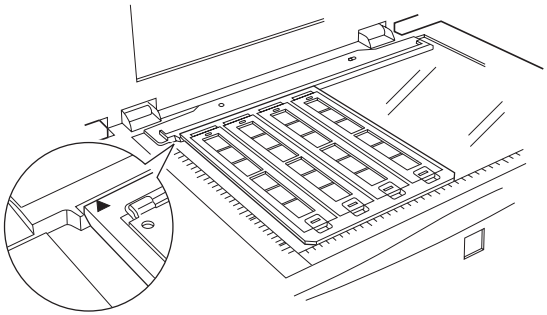
2. Insert the film in the holder face down.



3. Replace the strip cover that you removed in step 1. Repeat steps 1 through 3 for all the filmstrips you scan.

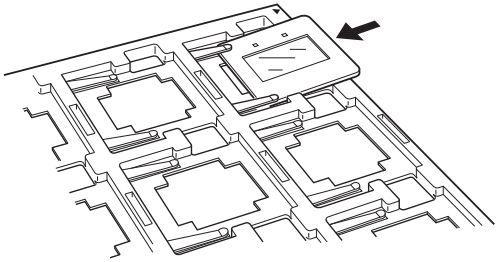


4. Place the film holder on the document table and align it with the notch on the transparency guide as shown below.

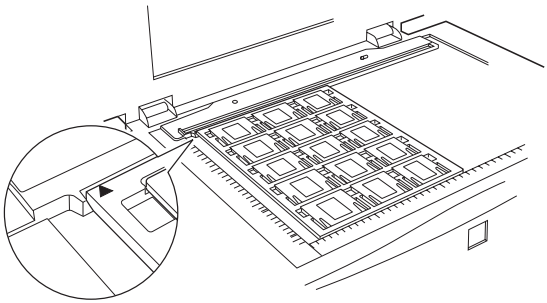


Mounted slides

1. Load slides in the 35 mm slide holder face down, as shown below. Repeat this step for all the slides you scan.

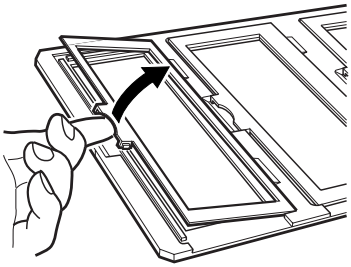


2. Place the slide holder on the document table. Align the slide holder with the notch on the transparency guide, as shown below.

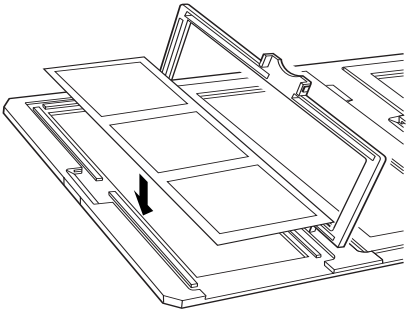


120/220 film

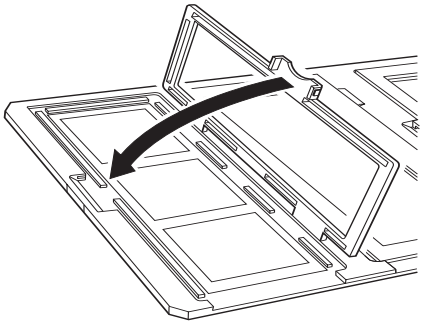
1. Place the 120/220 film holder on a flat surface, and open a strip cover.



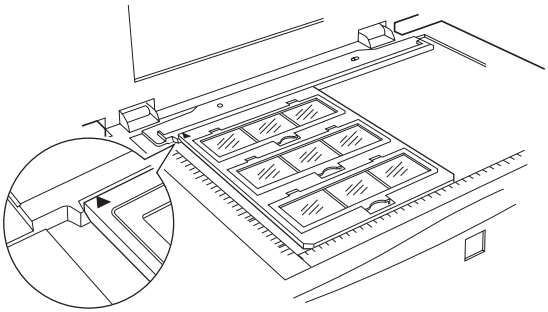
2. Insert the film in the holder face down.



3. Close the cover. Repeat steps 1 through 3 for all the film you scan.

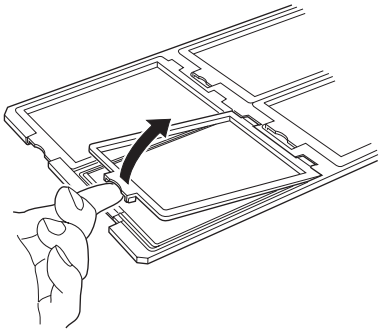


4. Place the film holder on the document table, and align it with the notch on the transparency guide, as shown below.

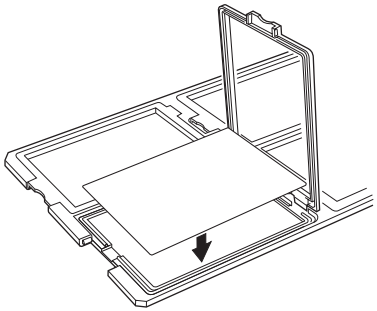


4 x 5 inch film

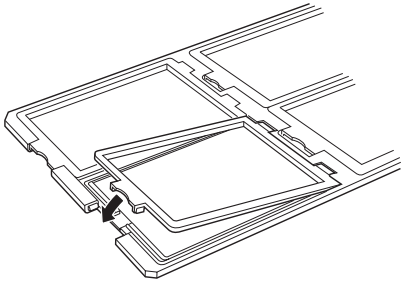
1. Place the 4 × 5inch film holder on a flat surface, and open a cover.



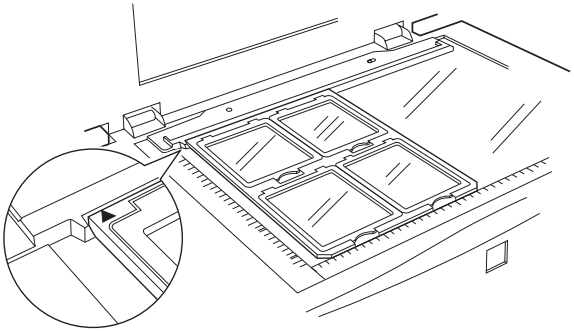
2. Insert the film in the holder face down.



3. Close the cover. Repeat steps 1 through 3 for all the film you scan.

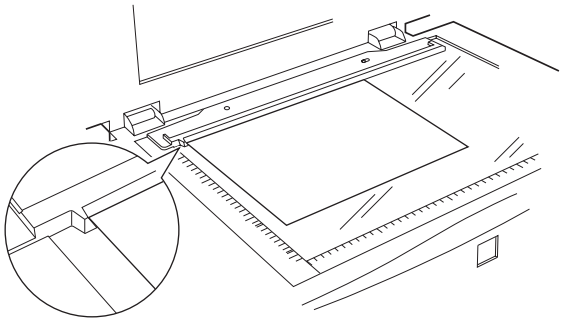


4. Place the holder on the document table, align it with the notch on the transparency guide, as shown below.



Non-standard film sizes

Place the film directly onto the scanner's glass document table, making sure the glossy (smooth) side of the film is facing down.



If the reflective document mat is installed in the Transparency Unit, remove it. Close the Transparency Unit.

Note:

- ❏ *When you place the film directly on the document table, make sure to set the focus position to 0.0 in EPSON TWAIN Pro.*
- ❏ *An area 2±1.5mm from the horizontal and the vertical edges of the document table glass will not be scanned.*

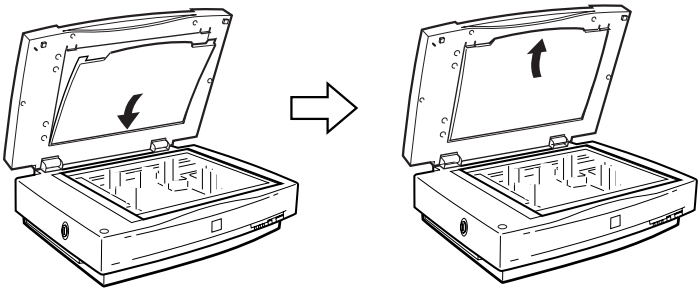
Scanning normal documents

To scan normal documents with the Transparency Unit installed, always insert the reflective document mat included with this unit. Also, make sure you remove the transparency guide from the scanner's document table.

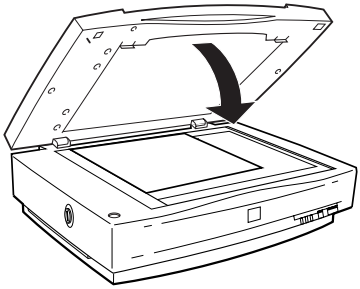
Insert the reflective document mat as described below.

1. Open the Transparency Unit and remove the transparency guide from the scanner's document table if necessary.

2. Slide the mat into place and insert the tabs into the slots on the Transparency Unit.



3. Place your document on the document table and close the Transparency Unit.



To remove the reflective document mat, slide it up and out of the slots on the Transparency Unit.

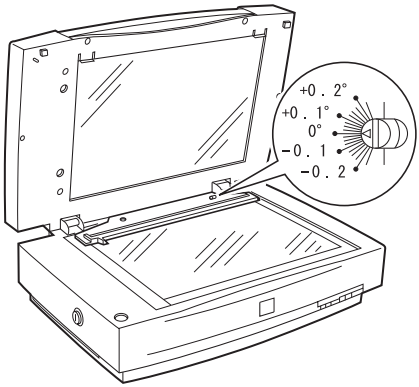
If a color stripe appears when scanning film

The optical phenomenon where color stripes appear is called Newton's ring. This occurs when two, very thin membranes such as film surfaces or soap bubble surfaces meet.

If this phenomenon occurs, try scanning the film upside down. This may eliminate the effect of Newton's ring.

Adjusting the angle of the transparency guide

If you find that your scanned image's edges are at a slight angle, adjust the angle of scanning by turning the adjust pin. Most scanners scan at an angle due to the movement of the carriage. The direction and degree you should turn the adjust pin depends on your individual scanner and the placement of the document to be scanned. You may want to experiment with this feature to determine the best angle. If you are still unsatisfied after experimenting with the adjust pin, see "Using the Document Guide" on page 4-24 for information on how to precisely find the angle you need.

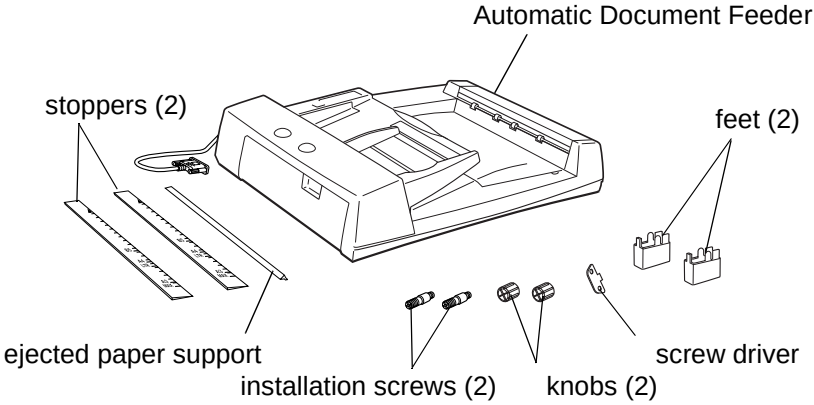


Using the Automatic Document Feeder

The Automatic Document Feeder (B81321*) allows you to automatically load multiple-page documents into your scanner. This document feeder is particularly useful for OCR (optical character recognition) scanning, or for creating an image database.

Unpacking the Automatic Document Feeder

When you unpack your Automatic Document Feeder, make sure you have all the parts shown below and that none is damaged. If you find any missing or damaged items, contact your EPSON dealer immediately.



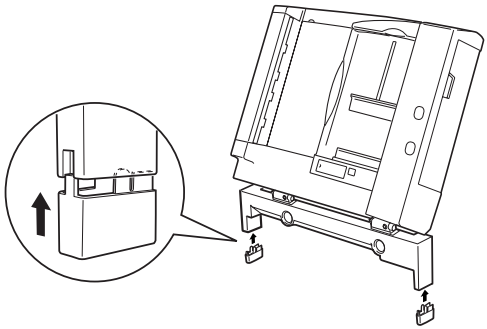
Installing the Automatic Document Feeder

Before installing the Automatic Document Feeder, be aware that:

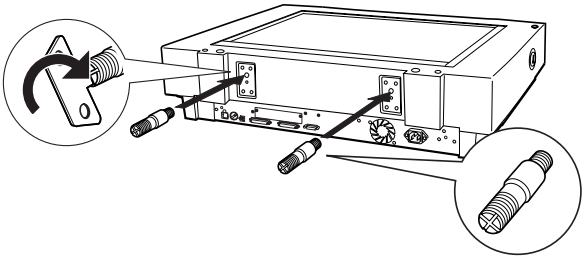
- ❏ The Automatic Document Feeder is heavy, so you may need to have someone help you lift it.
- ❏ The Automatic Document Feeder is large, so you should clear sufficient space around the scanner.

Follow the steps below to install the Automatic Document Feeder on your EPSON scanner:

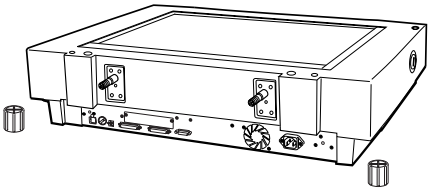
1. Make sure your scanner is turned off and unplug the power cord.
2. Remove the scanner's document cover by holding the cover behind the hinge and lifting the back of the cover straight up. See"Removing the Cover for Thick or Large Documents" on page 4-6.
3. Remove the document guide strip from the document table.
4. Attach the two feet as shown below.



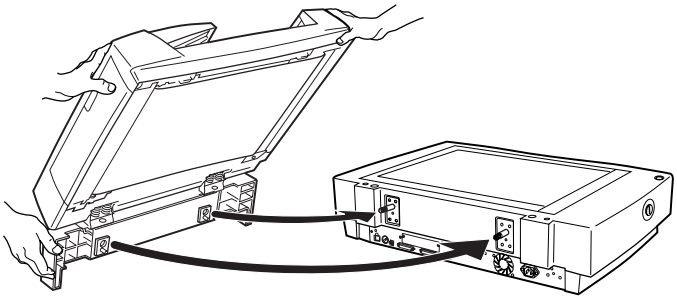
5. Insert the installation screws that come with the Automatic Document Feeder into the holes in the back of the scanner and secure them using the included screwdriver as shown below.



6. Place the two knobs that are enclosed with the Automatic Document Feeder beside the scanner.

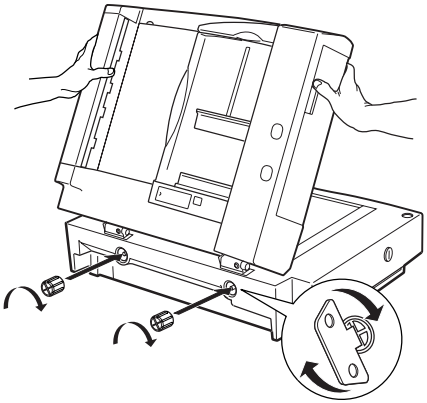


7. Align the installation screws with the holes in the Automatic Document Feeder. Slide the holes over the installation screws.

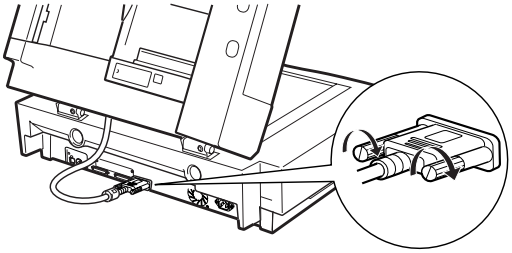


Warning:
The Automatic Document Feeder is heavy. Ask for assistance when lifting it.

8. Secure the knobs to the ends of the installation screws using the included screwdriver.

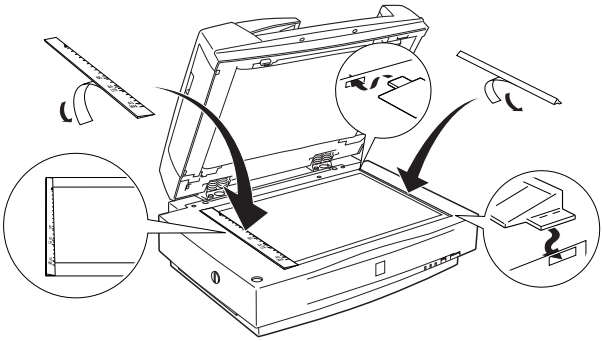


9. Attach the Automatic Document Feeder's connector to the scanner's option interface.



10. Peel off the backing from the light gray stopper and from the ejected paper support, which are provided with the Automatic Document Feeder. Attach the stopper and ejected paper support to the scanner as shown below.

    Note:
    There are two stoppers included with the scanner, a light gray one and a dark gray one. The light gray one is designed for use with your scanner. Do not use the dark gray one.



11. Close the Automatic Document Feeder.

12. Connect the power cord to the scanner and turn on the scanner.

Loading documents in the Automatic Document Feeder

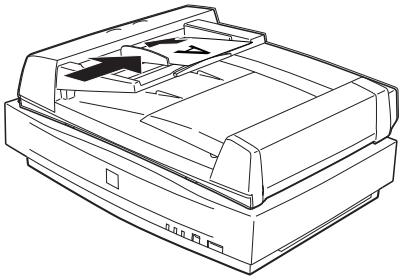
Note:
Make sure EPSON TWAIN Pro and Page Manager for EPSON are installed.

Your Automatic Document Feeder can automatically load up to 100 sheets. See "Document specifications" on page 6-33 for further information.

Follow the steps below to load documents in the Automatic Document Feeder.

1. Slide the right edge guides all the way to the right.

2. Insert the document stack face up in the Automatic Document Feeder until it meets resistance, then move the right edge guide so it is flush with the right edge of your documents.



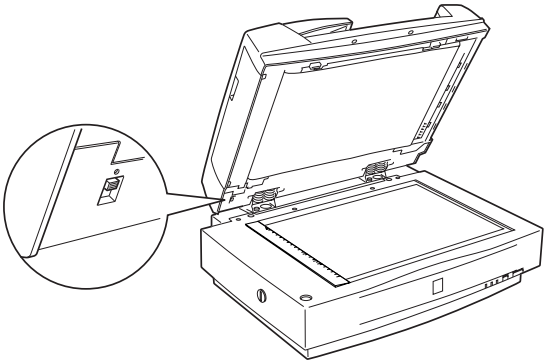
Note:

❏ *Be sure to insert documents face up.*

❏ *If you load multiple pages in the Automatic Document Feeder, the pages will be fed from the top and will be ejected face-down.*

❏ *To automatically scan both sides of a document, choose the Double-side setting in EPSON TWAIN Pro.*

❑ *Be sure the switch on lower left corner of the underside of the Automatic Document Feeder is set with the switch towards the circular mark, as shown below.*



Loading documents manually

You can load documents manually even when the Automatic Document Feeder is installed.

To load a document manually, lift the Automatic Document Feeder and place the document on the document table. Then lower the Automatic Document Feeder and scan the document.

Note:

❑ *Opening the Automatic Document Feeder while scanning is in progress will result in an option error and may result in a paper feeding error.*

❑ *Always close the Automatic Document Feeder and the middle cover before scanning or using the feeder.*

Scanning from the Automatic Document Feeder

The scanning instructions are divided into two sections; see "Scanning a complete document" to scan an entire document or image, and see "Scanning part of a document" to scan only a certain part of an image or document.

Scanning a complete document

You do not need to use the preview feature when scanning a full document or image. The scanner automatically finds and scans the whole image. Follow the steps below to scan an image or document.

1. Load the documents in the Automatic Document Feeder.
2. Start PageManager.
3. Select **EPSON TWAIN Pro(32-bit)** from **Select Source** on the PageManager **File** menu.
4. Select **Acquire** from **File** menu.
5. In the dialog box of EPSON TWAIN Pro or EPSON TWAIN Pro Network, make sure that **ADF-Single-sided** or **ADF-Double-sided** is selected from the Document Source list. Also choose appropriate settings for scanning.
6. Click **Scan**.

After scanning the entire stack of documents, a window with thumbnail images will appear. In this window you can select and change the orientation of the scanned images.

Scanning part of a document

To scan only a part of a document, follow the steps below.

1. Load the document(s) in the Automatic Document Feeder.

2. Start PageManager and select **Acquire** from the File menu.

3. Click **Preview**. The document is ejected after previewing.

   Note:
   The second page will be fed immediately after the first page is scanned and ejected without being scanned.

4. Draw a marquee (a frame around a part of a document) to define the part of the image you want to scan by dragging the mouse pointer over that area.

5. Set document(s) to be scanned in the Automatic Document Feeder including the ejected documents.

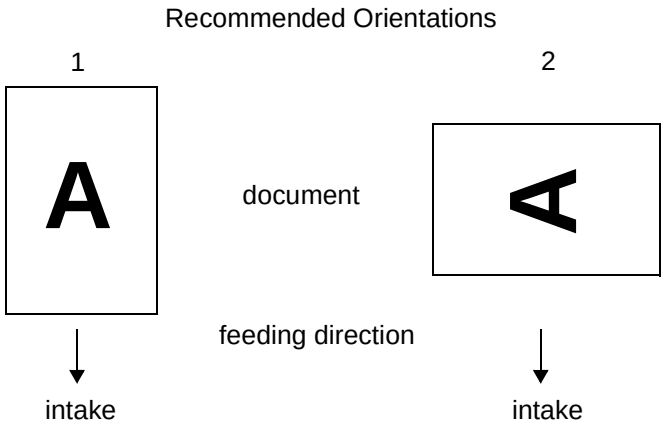
6. Choose your settings in EPSON TWAIN Pro and click the **Scan** button. Refer to the *HTML Scanner Software Reference Guide* for details on choosing EPSON TWAIN Pro settings.

After scanning the entire stack of documents, a window with thumb-nail images appears. In this window you can select and change the orientation of the scanned images.

Changing the orientation of scanned images

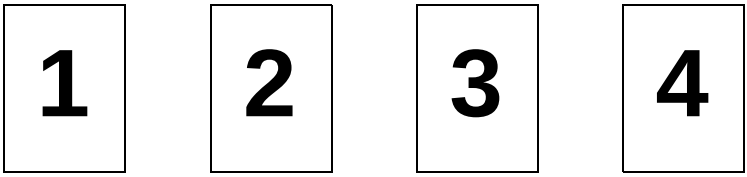
PageManager allows you to correct any misorientation of scanned images caused by the Automatic Document Feeder.

Images produced with single-sided scanning



When you set a stack of document in direction 1

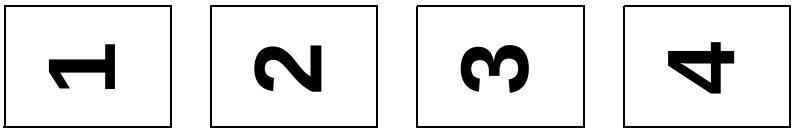
In the PageManager dialog box, scanned images appear as shown below.



You do not need to correct the orientation of images. Click the **OK** button to close the window.

When you set a stack of document in direction 2

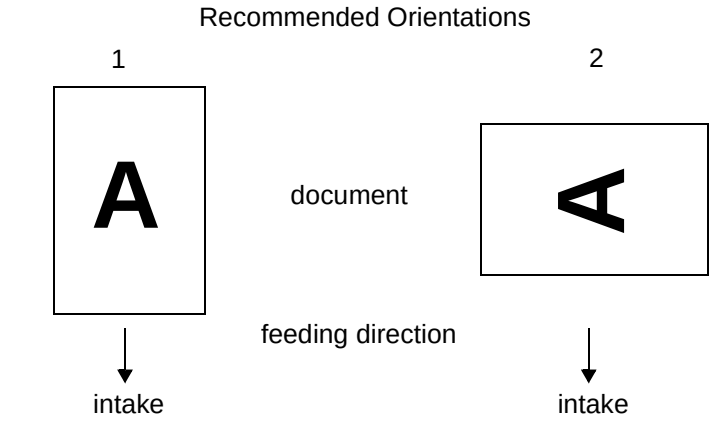
In the PageManager dialog box, the scanned images appear as shown below.



1. In the PageManager dialog box, select the **All** check box from **Select Images**. This highlights the border of all images in red.
2. Select **90°** from **Rotate Images**.
3. Click **Done**.

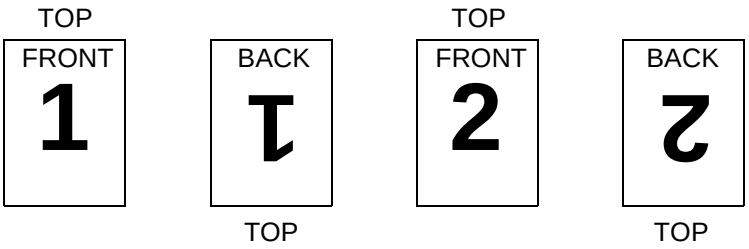
If you want to reset the rotation, click **Back to Original**.

Images produced with double-sided scanning



When you set a stack of document in direction 1

In the PageManager dialog box, the scanned images appear as shown below.

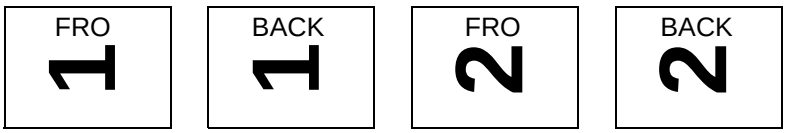


1. In the PageManager dialog box, select the **Even Pages** check box from **Select Images**. This highlights the border of the selected images in red.
2. Select **Rotate 180°** from **Rotate Images**.
3. Click **Done**.

If you want to reset the rotation, click **Back to Original**.

When you set a stack of document in direction 2

In the PageManager dialog box, the scanned images appear as shown below.

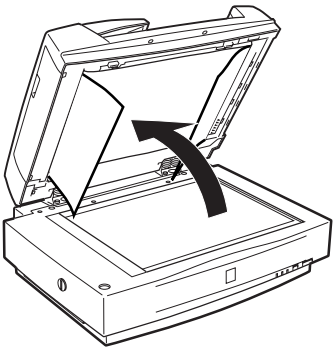


1. In the PageManager dialog box, select the **All** check box of **Select Images**. This highlights the border of all images in red.
2. Select **90°** from **Rotate Images**.
3. Click **Done**.

If you want to reset the rotation, click **Back to Original**.

Fixing paper jams in the Automatic Document Feeder

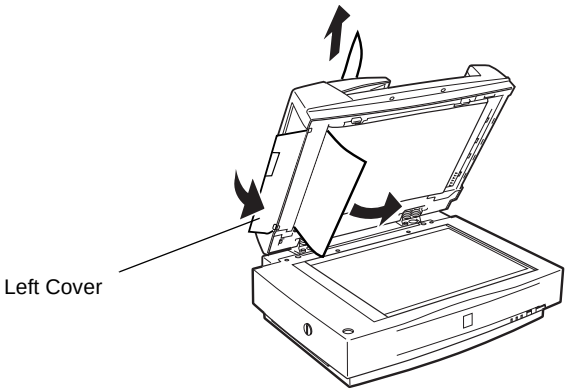
If a paper jam occurs, first open the Automatic Document Feeder's cover, remove any paper from the document table, then determine where the paper jam occurred.



If paper jams at the feeder position:

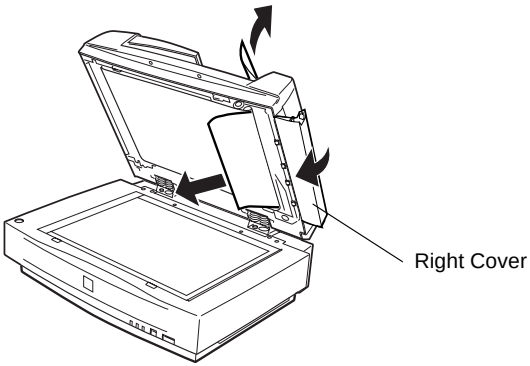
Open the left cover and carefully pull the jammed paper out of the feeder mechanism.

Note:
Be careful not to pull too hard, otherwise the paper may tear, making it more difficult to remove.

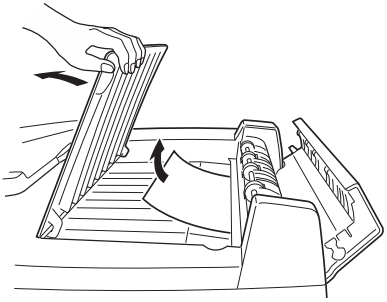


If paper jams at the paper eject position:

Open the right cover and carefully pull the jammed paper out of the feeder mechanism.



Note:
Be careful not to pull too hard. If the paper tears, open the middle cover and remove the paper as shown below.



After removing the jammed paper, close the Automatic Document Feeder cover.

Document specifications

Paper size	Direction
A3, Ledger, B4, Legal, A4, Letter, B5 or Executive, A5	Portrait
A4, Letter, B5 or Executive, A5,	Landscape

Weight: 50 to 127 g / m²

Paper quality: High-quality bond or thermal paper

Document type: Documents printed with impact printers, laser printers, or facsimile machines

Document conditions

Make sure of the following before feeding a document:

❑ Ink on the document is dry.

- ❏ The document has no holes, is not ripped or wrinkled, and has nothing attached to it.
- ❏ The document has no staples or other objects attached that may damage the feeder mechanism.
- ❏ The document has no folds closer than 8 mm to its edges.
- ❏ The document is not a multi-part form or a bound document.
- ❏ The document has no rear carbon coating.
- ❏ The document has no cut-out areas.

Other precautions

Do not feed photographic sheets or particularly valuable original artwork into this Automatic Document Feeder; mis-feeding a document may result in accidental wrinkling or damage.

When scanning high-quality color or halftone documents, it is recommended that you open the Automatic Document Feeder and scan documents individually.

Using the IEEE 1394 Scanner I/F Card

The optional IEEE 1394 Scanner I/F Card (B80834*) offers high-speed data transfer and flexible connectivity for your scanner. It supports a peak data transfer rate of 400 Mbps, and interface cables can be connected and disconnected without turning off the scanner or your computer. You can connect multiple IEEE 1394 devices simultaneously in either a daisy-chain or tree configuration.

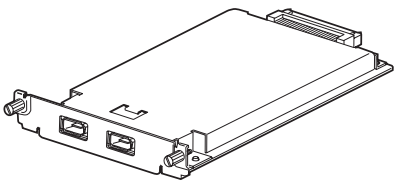
System requirements

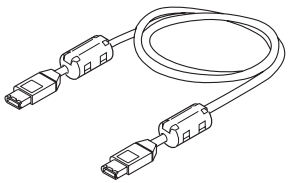
Hardware:	Macintosh equipped with built-in IEEE 1394 (FireWire) port, or with an IEEE 1394 (FireWire) PCI card, supported by Apple® Computer.
OS:	Mac OS 8.6 with FireWire Update 2.1 or later. Microsoft® Windows® 2000

Note for Windows users:
Unless your computer already has built-in IEEE 1394 ports or an IEEE 1394 board installed, you need to install an IEEE 1394 board.

Installing the IEEE 1394 Scanner I/F Card in your scanner

To use your scanner as an IEEE 1394 device, you need to install the optional IEEE 1394 Scanner I/F Card.

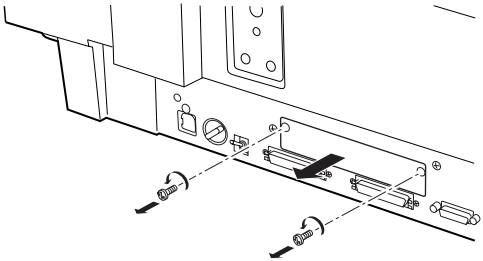




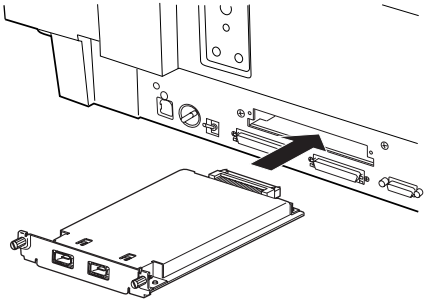
1. Turn off the scanner. Unplug any power cords, then disconnect all cables from the back panel of your scanner.

2. Use a cross-head screwdriver to remove the two screws securing the shield plate to the optional interface slot; then remove the plate. Be sure to keep both screws; you may need to use them again if you re-install the shield plate.

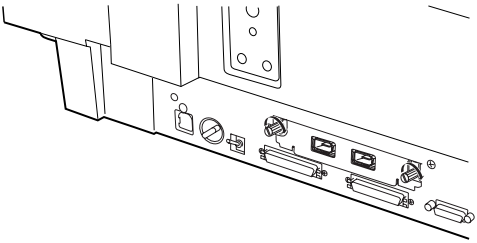
Caution:
Static electricity can damage electronic components. Discharge static electricity by touching the metal frame of your scanner before handling the interface board.



3. Insert the Scanner I/F Card along the side guide rails into the expansion slot in the optional interface slot.



4. Secure it with the retaining screws.



5. Reconnect all cables.

Understanding IEEE 1394 connections

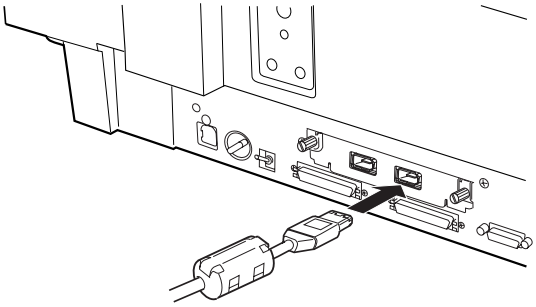
The Scanner I/F Card is equipped with two cable connectors. One is used to connect the card to the computer, and the other is used to connect other IEEE 1394 devices in a daisy chain or tree configuration. Use the cable supplied when making the connection. The cable can be connected without switching off the power supply to the computer or the scanner because it complies with the IEEE 1394 standard. Cables can be connected whether the scanner or computer are on or off.

Caution:
Do not connect or disconnect IEEE 1394 cables when the scanner is in use.

Connecting to your computer

To connect the scanner to your computer or other IEEE 1394 device:

1. Connect one end of the cable to the IEEE 1394 port of the Scanner I/F Card on back of the scanner.

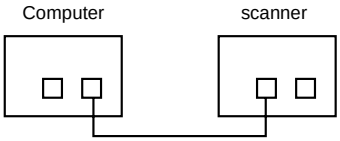


2. Connect the other end of the cable to the IEEE 1394 port on your computer, or other IEEE 1394 device.

When connecting the scanner directly to your computer

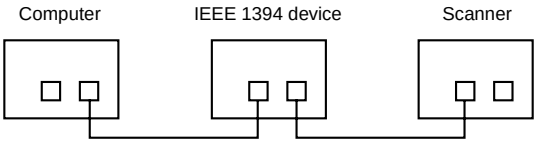
Connect the cable connector to your computer's IEEE 1394 port (FireWire port).

The other cable can be connected to any of the IEEE 1394 ports on the Scanner I/F Card attached to your scanner (any of the ports may be used).

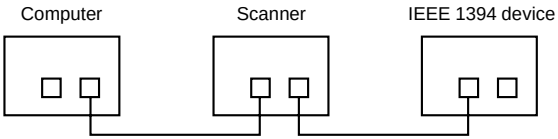


When connecting the scanner to your computer with other IEEE 1394 devices

If IEEE 1394 devices are already connected to your computer, connect the scanner so that it is the last IEEE 1394 device in the chain.



Note:
The IEEE 1394 cable supplied with the optional IEEE 1394 Scanner I/F Card has 2 six pin connectors at each end. If IEEE 1394 devices with four pin connectors are used in a daisy chain or tree, you will need to use a 6:4 converter cable.



Note:
Connect the cable to a vacant IEEE 1394 connector if additional IEEE 1394 devices are to be connected to your scanner.

Installing the Scanner Software

After installing the interface board as described above, you need to install the scanner software before you connect your scanner to your computer and use the scanner to scan documents. For details on installing the scanner software, see Chapter 3, "Installing the Software."

Note:
When you install the EPSON scanner software, the FireWire Update 2.1 will automatically be installed or updated, if the software is not installed on your Macintosh, or is out of date.

Glossary

additive primary colors
The colors of red, green and blue (RGB) - which give the perception of white when fully added. These are the colors of the color system used with monitors and scanners.

application
A software program that helps you carry out a particular task, such as word processing, image editing, or financial planning.

bi-level data
Image data that is composed of 1 bit per pixel. A pixel is represented by a single bit of digital data that can express only 1 (light) or 0 (dark).

bit
Short for binary digit. The smallest unit of data in computer processing. A bit can represent two values: on and off, or 1 and 0.

bit/pixel
The unit that indicates the number of bits allocated for a pixel. The larger the bit value, the more detail of a pixel will be reproduced.

brightness
A scanner function to lighten or darken the output image data.

byte
A unit of information consisting of eight bits. A byte can represent a control code or character.

carriage
A component of the scanner that contains the optical sensor and light source for scanning.

color correction
A method of adjusting the color image data for a particular type of device so that the reproduction results are as close as possible to the original colors.

color separation
A process of converting full-color images into a limited number of primary colors. Additive primary colors (red, green, and blue) are used by the scanner, and the subtractive primary colors (cyan, magenta, and yellow) plus black are used for printing press separation.

ColorSync
Color management system for Macintosh that is designed to help you get WYSIWYG (what you see is what you get) color output. This software displays colors on your screen as they are on the scanned documents, or prints colors as you see them on your screen.

daisy chain
A SCSI bus arrangement that allows several devices to be connected simultaneously in a line to a single computer. See *SCSI*.

default
A set of values used when no other selections have been made. These are sometimes called factory defaults if the original values have not been changed since the scanner has left the factory.

dithering
A process in which software or an output device simulates continuous tones with groups of dots.

document
The item, such as a sheet of paper or a book, that is placed on the document table for the scanner to read.

dpi
Short for dots per inch. A unit of measurement for resolution. The higher the value, the higher the resolution.

dropout color
A color the scanner does not recognize and ignores. You can select and deselect dropout colors in the scanner software.

ESC/I
Abbreviation for EPSON Standard Code for Image scanners. A system of commands that allows you to control image scanners from your software.

ESC/P
Abbreviation for EPSON Standard Code for Printers. A system of commands that allows you to control printers from your software.

exposure
A scanner function that lightens or darkens the scanned image data.

grayscale
Images represented with various shades of gray in addition to black and white.

halftoning
A method of reproducing images with patterns of dots to improve the quality of the output.

home position
The position at the rear (nearest the cover hinge position) of the scanner where the carriage rests before a scanning operation.

ICM
Image Color Matching. Windows color management system designed to help you get WYSIWYG (what you see is what you get) color output. This software displays colors on your screen as they exist on the scanned documents, or prints colors as you see them on your screen.

imagesetter
A device that uses computer files to produce high-resolution text and graphics output on film or paper. These are usually found in service bureaus and printing companies.

impact dot printer
A printer that transfers ink onto the paper by striking an ink ribbon with a number of small pins.

ink jet printer
A printer that transfers ink onto the paper by spraying the ink through a number of small nozzles.

interface
A piece of hardware, a method, or a standard used for connection between or among computer devices.

laser printer
A printer that uses a laser and the electrophotographic method to print a full page at a time. The laser is used to "paint" a charged drum with light, to which toner is applied and then transferred onto paper.

line sequence
A type of color scanning that separates primary colors line by line. The carriage makes only one pass.

marquee
A moveable and adjustable frame that marks the area of an image that will be previewed or scanned.

monochrome
Black and white images, or images represented only by the intensity of luminosity.

OCR
Optical Character Recognition. The technology that allows computers to "read" text from physical objects. OCR requires a graphical representation of text to interpret, which usually comes from a scanned image.

page sequence
The type of color scanning in which the entire image is scanned once for each separate color.

pixel
Short for picture element. Each image is composed of a number of pixels. Pixels are also counted in units of dots.

plain bi-level
Bi-level image data without the halftoning process.

port
An interface channel through which data is transmitted between devices.

primary colors
Basic colors. See *additive primary colors* and *subtractive primary colors.*

resolution
Indication of how finely an image is resolved into pixels. Measured in dots per inch (dpi), pixels per inch (ppi), or samples per inch (spi).

scan
An operation performed by the sensor and the carriage. The image is divided into pixels by scanning.

scanning area
The physical size of the image that can be scanned by the scanner.

SCSI
Small Computer System Interface. This is one method used to connect your computer to peripherals such as scanners, hard disk drives, CD-ROM drives, and so on.

SCSI ID
The numbers that all devices in a SCSI connection (see *daisy chain*) use to identify each other. If the same ID number is used by two devices in the same daisy chain, the devices cannot operate properly.

sRGB
A standard color space used as the default color space within the Windows 98 color management system (ICM 2.0).

subtractive primary colors
The colors of cyan, magenta, and yellow (CMY) - which produce black when mixed in certain amounts. In printing, black is often added to give more definition as mixing of actual inks cannot produce pure black.

terminator
A device that stops electronic signals, and prevents them from proceeding or returning to other devices. This is necessary to stop a signal from continuously bouncing between devices.

threshold
A reference point that is used to determine whether data will be processed as "on" or "off". In the case of color image data, "on" means that a certain color will appear in a pixel or dot, and "off" means that color will not appear there.

tone correction
A method of adjusting the tone curve so that the reproduction results on different types of output devices have gradations similar to the original image.

tone curve
The graph that shows the contrast ratio between the input (original image) and output (image data) in image processing.

USB
A Universal Serial Bus. A hardware interface for connecting low-speed peripherals such as a keyboard, mouse, scanner, or printer to the computer.

USB hub
A device that normally provides four TYPE A sockets to increase the number of USB ports on a PC.

Index

Numerics

120/220 film 6-12
14-bit Gray (HiFi) 4-12
24-bit Color (Std) 4-12
24-bit Color De-screening 4-12
35mm film strips 6-9
4 x 5 inch film 6-14
42-bit Color (HiFi) 4-12
8-bit Gray (Std) 4-13

A

AAS 1-3
AC inlet 2-5
Acquire 4-8
ADF, *See* Automatic Document Feeder
Auto
  Area Segmentation (AAS) 1-3
  Exposure 4-16
Automatic Document Feeder 1-9, 5-7, 6-19–6-34
  ADF-Double-sided 4-11
  ADF-Single-sided 4-11
  chage the orientation 6-28
  close 6-23
  document specifications 6-33
  edge guides 6-24
  ejected paper support 6-19, 6-23
  feet 6-19, 6-20
  installation screws 6-19
  installing 6-20
  knobs 6-19, 6-22
  left cover 6-32
  middle cover 6-33
  right cover 6-32
  scanning a complete document 6-26
  scanning part of a document area 6-27
  screw driver 6-19, 6-21
  stoppers 6-19, 6-23
  unpacking 6-19

B

B80834* 1-9
B80836* 1-9
B81320* 1-9
B81321* 1-9
Button
  operate 1-6, 1-8, 2-5, 4-3
  reset 1-6, 1-8
  scan 4-20
  scan all 4-21
  start 1-2, 1-6, 4-7, 4-23

C

Cable
  SCSI 2-8, 2-12
  USB 1-4, 2-16
Calibration utility 3-25
Carriage 1-6, 2-6
Chage the orientation, automatic document feeder 6-28
Chain, daisy 2-8, 2-11, 2-13
Choosing a place 2-2
Close
  automatic document feeder 6-23
  document cover 4-5
  scanner monitor 5-10
  transparency unit 6-5
Color
  24-bit Color (Std) 4-12
  24-bit Color De-screening 4-12
  42-bit Color (HiFI) 4-12
  adjustment 4-16
Connecting to
  another SCSI device 2-8, 2-11
  PCs 2-7
  SCSI interface 2-7, 2-8, 2-11–2-12

USB interface 2-15–2-17
Connections
SCSI 2-8–2-12
USB 2-15–2-17
Copy & Fax 4-13
Copyright 4-3
Cord, power 1, 1-4, 2-2, 2-5, 2-12, 6-36

D

Daisy chain 2-8, 2-11, 2-13
Default SCSI ID 2-9
Destination 4-13
Disk space 4-10, 4-15
Document
feeder 5-7
source 4-10
Document cover
close 4-5
open 4-3
reattach 4-6
remove 4-6
Document Guide 4-24
Document Source setting 6-8
Document specifications 6-33
automatic document feeder 6-33
Document table 4-2, 4-4, 6-8, 6-16
Document, placing 4-3–4-5
Dropout 4-16

E

Edge Guides,
automatic document feeder 6-24
Ejected Paper Support, automatic
document feeder 6-19, 6-23
Ejected paper support, installing 6-23
EPSON
PageManager 3-13
scanner monitor 4-23, 5-2, 5-9, 5-12
screen calibration utility 3-25
stylus printer 4-14
TWAIN Pro 1-2, 4-7–4-20, 6-8
EPSON Network Image Express 1-9
Error light 1-6, 1-7
Exposure 4-16

F

Fax 4-14
Feet, automatic document
feeder 6-19, 6-20
File Name field 4-22
Flatbed 4-10
Fluorescent lamp 2-6
Function, button 1-8

G

Gamma 4-16
Gray Balance Intensity 4-16

H

Halftone 4-16
Help, online 4-14
Highlight 4-16
Hub, USB 2-16

I

IEEE 1394 Scanner I/F Card 1-9
Image
controls 4-16
database 6-19
saving 4-21
scanning 4-9
Image Type 4-12, 4-16
Important safety instructions 1–3
Indicator status 1-7
Installation Screws,
automatic document feeder 6-19
Installing
applications 3-12
automatic document feeder 6-20
scanner software 3-5–3-22
SCSI driver 2-7
stopper 6-23
Instructions, safety 1–3
Interface 3-2–3-4

board, SCSI 2-7, 2-11

K

Knobs, automatic document feeder 6-19, 6-22

L

Laser Printer 4-14
Light
  Error 1-6
  ready 1-6
Line Art 4-13
LineWork 4-14

M

Macintosh 3-3, 3-4, 3-23–3-24, 3-25, 4-9, 5-11
Macintosh SCSI port 2-7, 2-12
Marquee 6-27
Marquees 4-17–4-20
  active 4-19
  deleting 4-19
  duplicating 4-19
  moving 4-19
  resizing 4-18
Memory 4-10, 4-15
Mounted slides 6-11

N

Non-readable area 4-4, 6-16
Non-standard film sizes 6-16

O

OCR 1-3, 1-9, 4-13, 4-14, 6-19
Online help 4-14
Open,document cover 4-3
Operate button 1-6, 1-8, 2-5, 4-3
Operate light 1-7
Optical Character Recognition (OCR) 1-3, 1-9, 6-19

P

PageManager 6-28
PageManager for EPSON 3-13, 4-21, 4-23, 5-3–5-8
Paper jam
  feeder position 6-32
  paper eject position 6-32
Pixel Depth 4-16
Placing
  document 4-3–4-5
  scanner 2-2
Plugging-in 2-5
Power cord 1, 1-4, 2-2, 2-5, 2-12, 6-36
Power-off sequence 2-14
Power-on sequence 2-13
Prepress 4-14
Preview window 4-16

R

Ready light 1-6, 1-7
Remove
  document cover 4-6
  document guide 4-32
Reset button 1-6, 1-8
Rotary switch, SCSI ID 1-6
Rotate Images 6-29, 6-30

S

Safety instructions 1–3
Saturation 4-16
Save As 4-21
Save, scanned image 4-21
Scan 4-2, 4-5, 4-20
Scan All 4-21
Scan Buttons bar 5-3–5-8
Scanner event 5-13–5-15
Scanner Monitor, EPSON 4-23, 5-2, 5-9, 5-12
Scanners and Cameras 3-13, 5-13–5-14
Scanning 4-5
Screen calibration 3-25
Screen / Web 4-13

Screw Driver, automatic document feeder 6-19, 6-21
SCSI 3-18
board 2-7, 2-11
cable 2-8, 2-12
connections 2-7, 2-8, 2-11—2-12
port 2-7, 2-12
terminator 2-8, 2-10, 2-14
SCSI ID
number 2-8—2-10
rotary switch 1-6
Select Source 4-8
Shadow 4-16
Software, requirements 3-2—3-4
Source, Select 4-8
Specification, document 6-33
Start button 1-2, 1-6, 1-8, 4-7, 4-23
Stoppers
automatic document feeder 6-19, 6-23
installing 6-23
Switch, terminator 2-8, 2-10, 2-14
System requirements 3-2—3-4

T

Table, document 4-2, 4-4, 6-8, 6-16
Terminator 2-8, 2-10, 2-14
TET 1-3
Text Enhancement Technology (TET) 1-3
Threshold 4-16
Thumb-nail images 6-26
Tone Correction 4-16
TPU for Neg. Film 4-11
TPU for Pos. Film 4-11
Transparency Unit 1-9, 6-2—6-18
close 6-5
positioning transparencies 6-8—6-16
unpacking 6-2
TWAIN Select Source 4-8

U

Uninstalling EPSON TWAIN Pro 3-20
Unpacking
automatic document feeder 6-19
scanner 1-4
Transparency Unit 6-2
Upgrading
from Windows 95 to Windows 98 3-20
from Windows 98, 95, or NT4.0 to Windows 2000 3-20
USB
cable 1-4, 2-16
connections 2-15—2-17
hub 2-16
port 2-17, 6-38

W

Windows 3-3, 3-5—3-22