

EPSON[®] Expression[™] 636

COLOR IMAGE SCANNER

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Torrance, CA

User's Guide

FCC Compliance Statement for United States Users

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

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

WARNING

The connection of a non-shielded equipment interface cable to this equipment will invalidate the FCC Certification of this device and may cause interference levels that exceed the limits established by the FCC for this equipment. It is the responsibility of the user to obtain and use a shielded equipment interface cable with this device. If this equipment has more than one interface connector, do not leave cables connected to unused interfaces.

Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

For Canadian Users

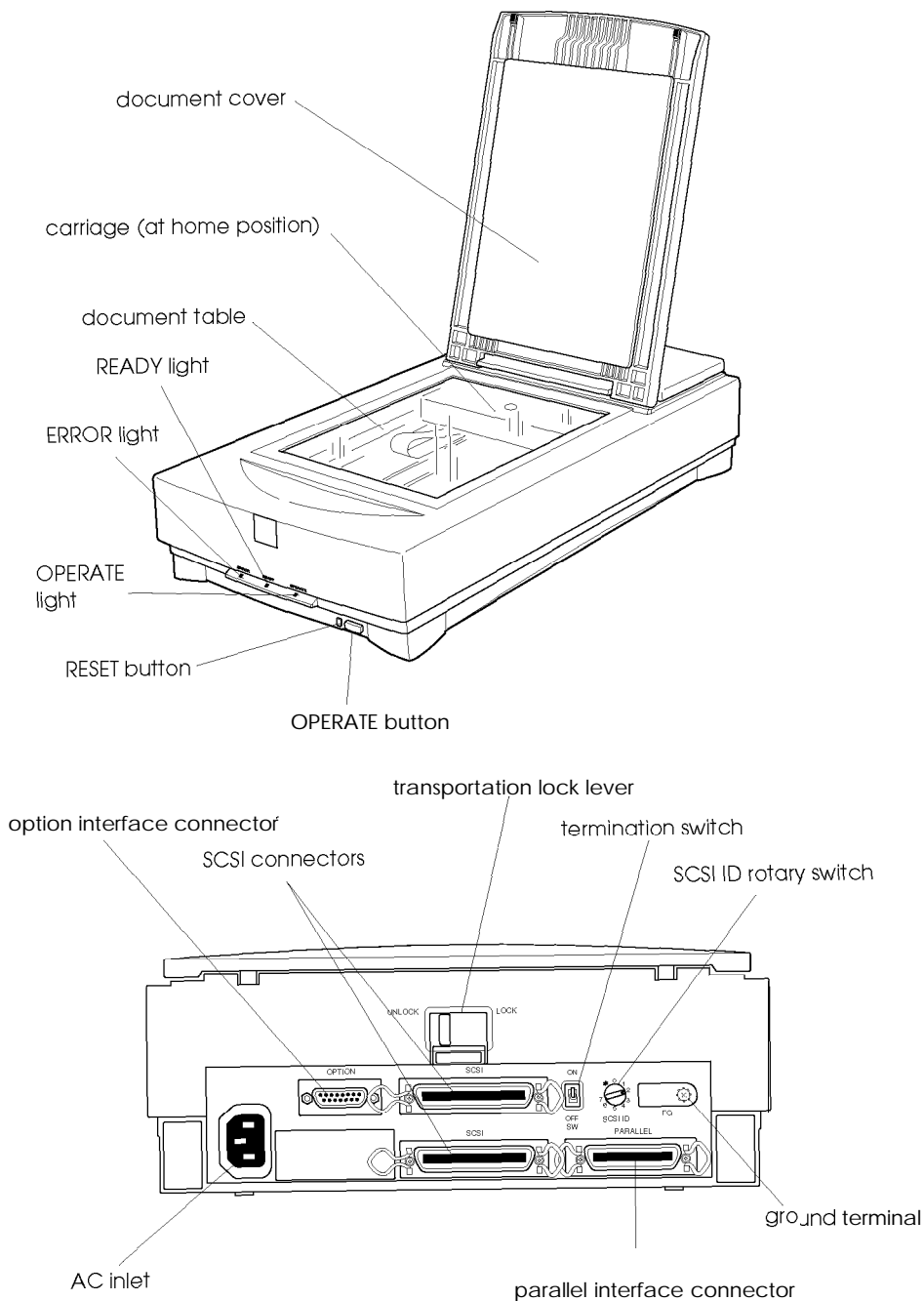
This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the radio interference regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de Classe B prescrites dans le règlement sur le brouillage radioélectrique édicté par le Ministère des Communications du Canada.

A Note Concerning Responsible Use of Copyrighted Materials

Like photocopiers, scanners can be misused by improper scanning of copyrighted material. Although Section 107 of the U.S. Copyright Act of 1976 (Title 17, United States Code), the "fair use" doctrine, permits limited copying in certain circumstances, those circumstances may not be as broad as some people assume. Unless you have the advice of a knowledgeable attorney, be responsible and respectful by not scanning published material without the permission of the copyright holder.

Scanner Parts



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Introduction

The EPSON Expression™ 636 is a true 600-dpi full-color flatbed image scanner with a letter or A4 size scanning area. It has the ability to scan in color or grayscale, making it ideal for virtually all uses, from simple drawings to complex full-color illustrations. It provides extremely high-quality color scanning by reading 36 bits per pixel and saving 24 bits per pixel.

Features

The scanner offers the following features:

- ❑ Full-color or grayscale reading. For color reading, you can select up to 16 million colors. For grayscale, you can select up to 256 gray shades.
- ❑ Scanning resolution of 600 dpi. The output resolution is selectable to match the resolution of your output device; output resolutions of 50 dpi to 4800 dpi (interpolated) are available.
- ❑ Automatic Area Segmentation (AAS). This feature enables the scanner to separate text from photographs on a page so that grayscale images are clearer and text recognition is more accurate.
- ❑ Text Enhancement Technology. This feature enhances the recognition accuracy when you use the scanner for optical character recognition (OCR) scanning.
- ❑ Two resident interfaces, bidirectional parallel and SCSI. Using these interfaces, you can connect two computers to the scanner at the same time.

- ❑ Higher quality output with EPSON TWAIN's "Best & de-screening" option. Selecting this option removes moire (interference) patterns from scanned images.
- ❑ The EPSON Scan! II and EPSON TWAIN scanning utilities. This software lets you take full advantage of your scanner's advanced features. You can scan images and save them to disk as files, use application programs that support the industry-standard TWAIN interface, export images in a variety of file formats, and calibrate your scanner.
- ❑ Software control of all scanner functions. Software commands are backward compatible with the EPSON ES-1200C™ color image scanner.

Options

The following optional items are available to expand the versatility of your scanner. For information on using these options, see Chapter 3 of this guide and the documentation that comes with the option.

Transparency Unit

This option allows you to scan transparent materials, primarily 35 mm slides and black-and-white negatives. It has a maximum reading area of 8.5 x 11.7 inches (216 x 297 mm), which allows you to scan transparent materials up to letter or A4 size.

Automatic Document Feeder

This option is designed primarily for optical character recognition (OCR) scanning. The automatic document feeder allows you to scan up to 30 pages automatically. You can then use them in a word processing program just as if you had typed them yourself.

About This Guide

Chapter 1 describes setting up your scanner and connecting it to your computer. Be sure to read this first. Chapter 2 gives basic information on using your scanner, including maintenance and transportation. Chapter 3 describes how to use the optional transparency unit and automatic document feeder, and Chapter 4 provides troubleshooting information. The Appendix lists the scanner's specifications.

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.

Where to Get Help

EPSON provides customer support and service through a network of authorized EPSON Customer Care Centers. Dial **(800) 922-8911** for the nearest location or the following services:

- ☐ Fax-on-Demand access to EPSON's technical information library
- ☐ Literature on current and new products
- ☐ The location of your nearest Authorized EPSON Reseller or Customer Care Center

- ❑ Technical information on installation, configuration, and operation of EPSON products

- ❑ Customer relations.

For answers to commonly asked questions about EPSON products 24 hours a day, 7 days a week, call EPSON Sound Advice at (800) **442-2110**.

You can purchase manuals, accessories, or parts from EPSON Accessories at (800) 873-7766 (U.S. sales only). In Canada, please call (800)873-7766 for dealer referral.

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

Electronic Support Services

You can access helpful tips, specifications, DIP switch or jumper settings, drivers, FAQs, sample files, application notes, and EPSON product bulletins 24 hours a day, 7 days a week, using a modem and one of the online services below.

World Wide Web

From the Internet, you can reach EPSON's Home Page at

<http://www.epson.com>

EPSON Internet FTP Site

If you have Internet FTP capability, use your Web browser (or other software for FTP downloading) to log onto <ftp.epson.com> with the user name anonymous and your e-mail address as the password.

EPSON Download Service

You can call the EPSON Download Service BBS at (800) **442-2007**. Set your communications software to 8 data bits, 1 stop bit, no parity. Modem speed can be up to 28.8 Kbps.

EPSON Fax-on-Demand Service

You can access EPSON's technical information library by calling **(800) 442-2110** or **(800) 922-8911** and selecting the appropriate phone option. You must provide a return fax number to use Fax-on-Demand.

EPSON Forum on CompuServe

Members of CompuServe[®] can type GO EPSON at the menu prompt to reach CompuServe's Epson America Forum. As an owner of an EPSON product, you are eligible for a free introductory CompuServe membership, which entitles you to an introductory credit and your own user ID and password. To take advantage of this offer in the U.S. or Canada, call **(800) 848-8199** and ask for representative #529.

Important Safety Instructions

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

- ☐ Unplug the scanner before cleaning. Clean with a damp cloth only. Do not spill liquid on the scanner.
- ☐ Do not place the scanner on an unstable surface or near a radiator or heat source.
- ☐ Do not block or cover the openings in the scanner's cabinet. Do not insert objects through the slots.

- ❑ Use only the type of power source indicated on the scanner's label.
- ❑ Connect all equipment to properly grounded power outlets. Avoid using outlets on the same circuit as photocopiers or air control systems that regularly switch on and off.
- ❑ Place the scanner near a wall outlet where the plug can be easily unplugged.

Placez le scanneur pres d'une de contacte ou la fiche peut-être debranchée facilement.

- ❑ Do not let the power cord become damaged or frayed.
- ❑ If you use an extension cord with the scanner, make sure the total ampere rating of the devices plugged into the extension cord does not exceed the cords ampere rating. Also, make sure the total of all devices plugged into the wall outlet does not exceed 15 amperes.
- ❑ 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 cabinet damaged; if the scanner does not operate normally or exhibits a distinct change in performance. Adjust only those controls that are covered by the operating instructions.

- ❑ If you plan to use the 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 16 Amp circuit breaker.

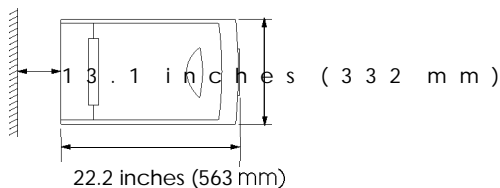
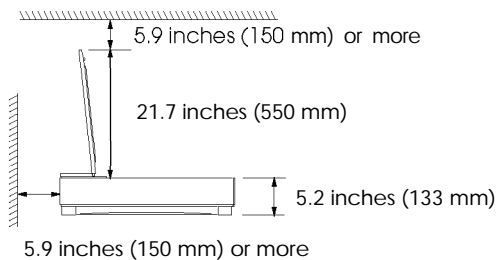
Bei Anschluß des Scanners an die Stromversorgung muß sichergestellt werden, daß die Gebäudeinstallation mit einem 16 A-Überstromschalter abgesichert ist.

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Choosing a Place for the Scanner

Follow these guidelines when you select a location for the scanner:

- ❑ Place the scanner on a flat, stable surface. The scanner does not operate properly if it is tilted or at an angle.
- ❑ Place the scanner close enough to the computer for the interface cable to reach it easily.
- ❑ Allow some space behind the scanner for the cables, and make sure to place the scanner where you can easily unplug the power cord. Also allow sufficient space above the scanner so that you can fully raise the document cover.

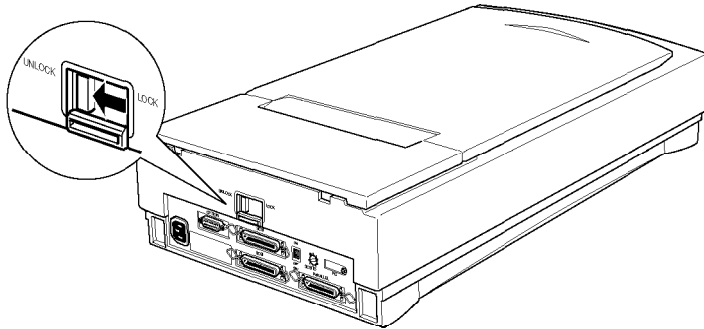


- ❑ Keep the scanner away from high temperatures and humidity and places subject to rapid changes in temperature or humidity.
- ❑ Keep the scanner away from direct sunlight and strong light sources.
- ❑ Avoid places subject to shocks or vibrations.

Releasing the Transportation Lock Lever

Before you connect the scanner to a power source, follow the steps below to release the transportation lock lever.

1. Place the scanner on a flat, stable surface with its rear panel facing you.
2. Slide the transportation lock lever to the UNLOCK position as shown below.

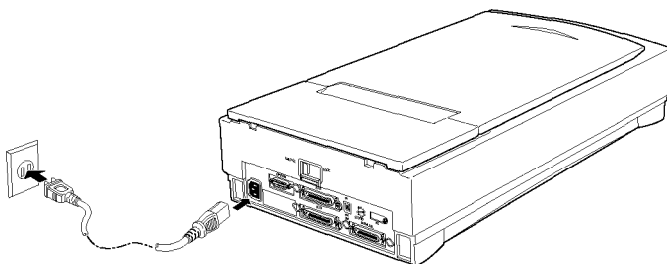


Note:

Be sure to return the transportation lock lever to the LOCK position before you store or transport the scanner.

Plugging in the Scanner

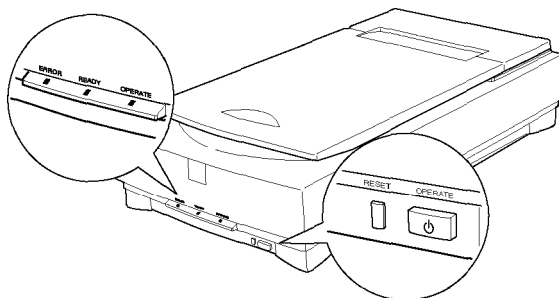
1. Connect the power cable to the power inlet on the back of the scanner and plug the other end into a properly grounded outlet as shown below.



Caution:

There are several versions of this scanner designed for different voltages, and 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 country, contact your dealer.

2. If any of the scanner's lights come on, press the OPERATE button to turn off the scanner.



Caution:

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

Initialization

By observing the scanner's initialization, you can make sure 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 is initializing, the fluorescent lamp on the carriage flashes. If the carriage is not at the home position (the rear 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 the transportation lock lever is in the UNLOCK position. Then turn on the scanner and check its operation again.

Connecting the Scanner to Your Computer

Your scanner has both a bidirectional parallel interface and a SCSI interface. Cables can be connected to both interfaces at the same time. The scanner automatically switches to the appropriate interface.

- ☐ To connect the scanner to a PC, do one of the following:

Install a bidirectional parallel interface board in your computer, if necessary. Then connect the computer to the scanner's bidirectional interface as described in the next section.

Note:

IBM® PS/2® computers and some other PCs have built-in bidirectional parallel interfaces. You need to install an additional one in these computers only if you use the built-in parallel interface for your printer.

Install a SCSI board in your computer, if necessary. Then connect the computer to the scanner's SCSI connector as described under "SCSI Setup" on page 1-8.

- ❑ To connect the scanner to an Apple® Macintosh® computer, you do not need to install a SCSI board in your computer; simply connect your scanner to your Macintosh's built-in SCSI port as described under "SCSI Setup" on page 1-8.

To use an interface correctly, you may need to change settings on the scanner, computer, or both. The following sections explain how to set up and connect each type of interface.

Connecting the Scanner to a Parallel Interface

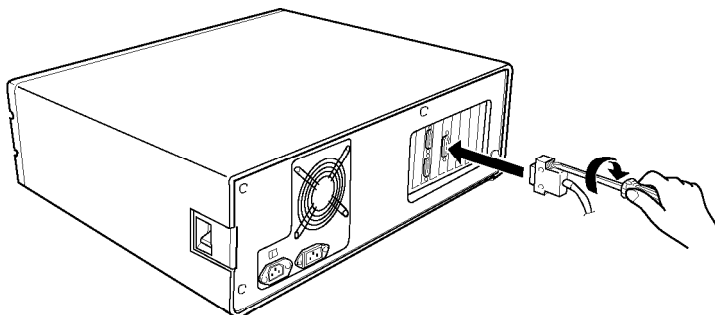
To connect the scanner to a parallel interface on your computer, use a standard shielded parallel interface cable and follow the steps below.

**Caution:**

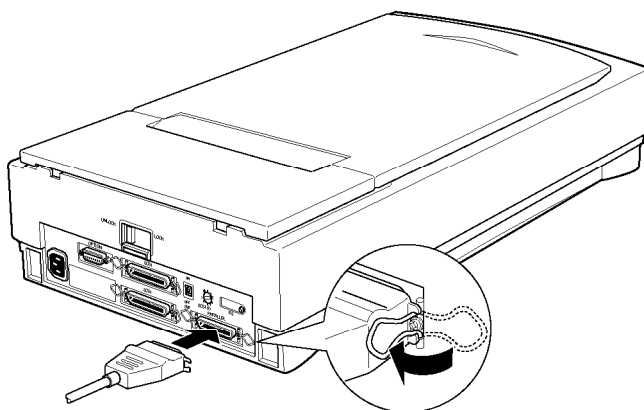
The scanner's bidirectional parallel interface requires a bidirectional interface on your computer. Check your computer's specifications to see if its built-in parallel interface is bidirectional.

1. Make sure that both the scanner and computer are turned off.

2. Connect the 25-pin end of the cable to the computer; then tighten the screws on the sides of the connector.



3. Plug the 36-pin end of the cable into the scanner's parallel interface connector. Then squeeze the wire clips together until they lock in place on both sides.



Note:

If your parallel cable has a ground wire, attach it to the scanner's ground terminal.

SCSI Setup

For some PCs, you must first install a SCSI board in your computer. All Macintosh computers have built-in SCSI ports; you do not need to install a SCSI board. Follow the directions below to connect the scanner to your PC or Macintosh.

SCSI connections

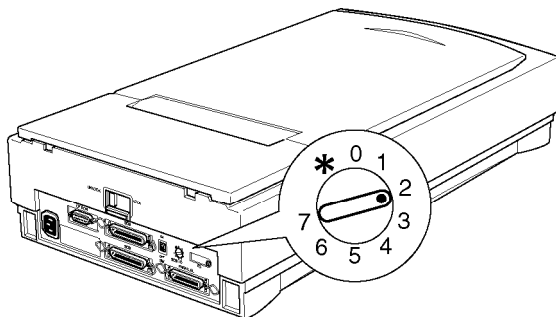
The SCSI interface allows you to connect up to eight devices, including the computer, in a “daisy chain” arrangement. Only the first SCSI device in a daisy chain is connected to the computer; each of the other devices is connected to the previous device.

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 terminators. If any other devices in the chain have terminators, the terminators must be turned off. The scanner has two 50-pin SCSI connectors and a built-in terminator that you can turn on or off.

Setting the SCSI ID number

The factory-set SCSI ID number of the scanner is 2. The computer’s SCSI ID number is usually 7. If one of the SCSI devices in your system already has the SCSI ID number 2, change the scanner’s SCSI ID number to an unused number as described on the next page.

1. Locate the SCSI ID rotary switch on the rear panel of the scanner.



2. To change the scanner's SCSI ID, turn the dial to the desired number.



Caution:

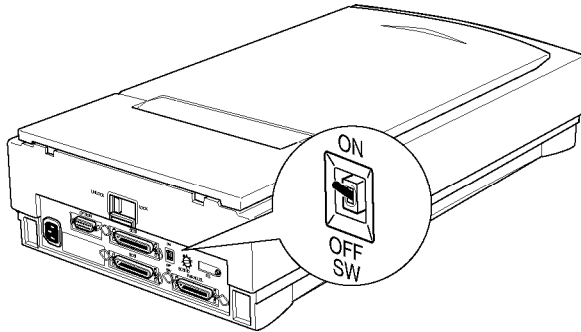
Do not set the scanner's SCSI ID to a number that is already assigned to another device; the computer, scanner, and other devices will not function properly.

Note:

*If your software supports only the ES-1200C scanner, set the dial to the position marked * to select ES-1200C Emulation mode. In ES-1200C Emulation mode, the scanner's SCSI ID number is 2. If one of your other SCSI devices already has the SCSI ID number 2, change that device's number to an unused number.*

Using the termination switch

The scanner has a built-in SCSI terminator. If the scanner is the only SCSI device you connect to your computer or if it is the last device in the daisy chain, leave the termination switch turned on.



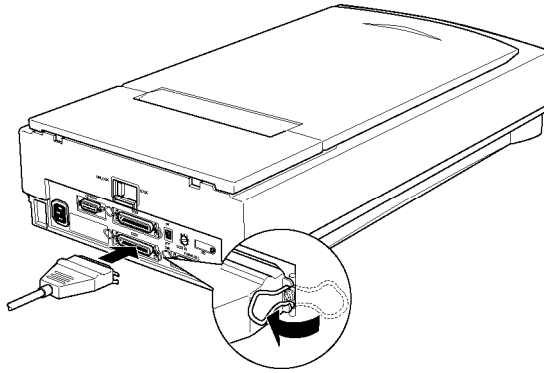
If the scanner is in the middle of a daisy chain, turn off the termination switch.

Connecting the scanner to your computer or to another SCSI device

To connect the scanner to a Macintosh, use a SCSI cable with a 25-pin connector on one end (for the computer) and a 50-pin connector on the other end (for the scanner). To connect the scanner to a PC or another SCSI device, use a SCSI cable with 50-pin connectors on both ends. Connect the scanner as follows:

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

2. Connect the 50-pin end of the cable to either the top or bottom SCSI connector of the scanner; then squeeze the wire clips together until they lock in place on both sides.



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

Note:

The SCSI port of the Macintosh is the larger port with the

SCSI icon  *over it.*

4. Plug in the power cables of your computer, scanner, and other external SCSI devices.
5. Turn on the scanner and any other external SCSI devices before you turn on your computer.

Turning on your computer and external SCSI devices

Always follow the power-on sequence described here when you turn on your computer and external SCSI devices.

If you have an internal hard disk, turn on the scanner and any other external SCSI devices you plan to use. Wait a few seconds; then turn on the computer.

If you have an external hard disk, turn on the scanner, the external hard disk (which should be first in the daisy chain), and any other external SCSI devices you plan to use. Wait a few seconds; then turn on the computer.

SCSI devices in the middle of the daisy chain may be left off if you don't plan to use them.

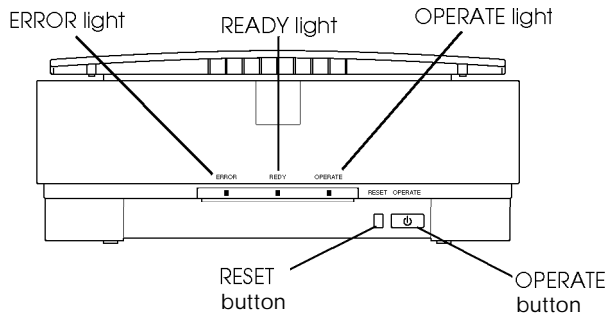
Installing Scanner Software

Now that you have connected the scanner to your computer, the next thing to do is install your scanner software. Follow the instructions in your *EPSON Scanning Utilities User's Guide*. Then read Chapter 2, "Scanner Basics," before you start scanning.

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Lights and Buttons

The scanner has three indicator lights and two buttons.



OPERATE light (green)

Comes on when the scanner is turned on.

READY light (green)

Comes on when the scanner is ready to scan images. This light flashes during scanning. When an error occurs, this light and the ERROR light indicate the type of error. See the next page.

ERROR light (red)

Comes on when an error occurs. Along with the READY light, it indicates the type of error.

OPERATE button

Turns the scanner on and off.

RESET button

Resets the scanner after an error occurs. Pressing this button during scanning stops the scanner and may cause an error in the scanning software.

Scanner errors

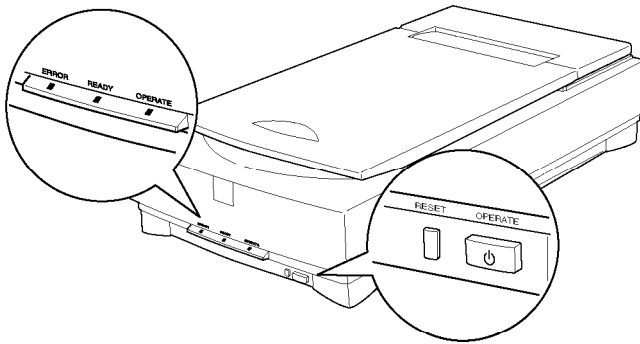
If an error occurs, the scanner stops operating and the READY and ERROR lights show the type of error. See Chapter 4, “Troubleshooting.”

Placing a Document on the Scanner

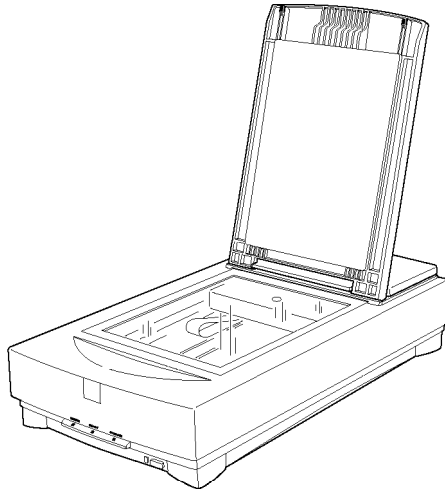
Before scanning a document:

Remember to respect the rights of copyright owners. Do not scan published text or images without first checking the copyright status.

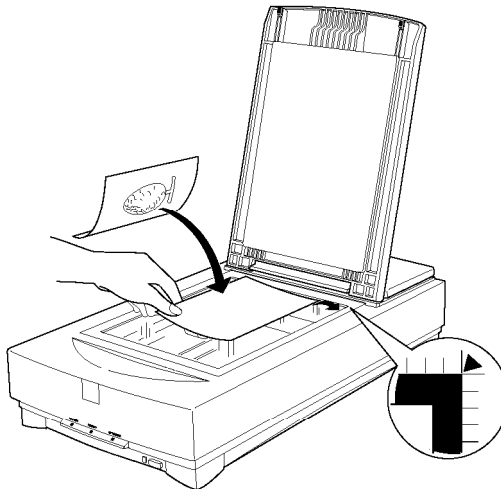
1. Turn on the scanner by pressing the OPERATE button.
The OPERATE light comes on.



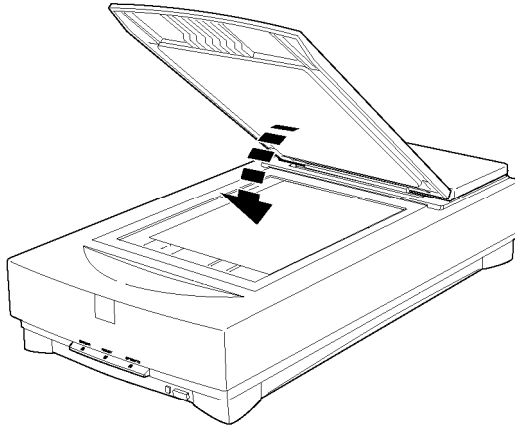
2. Turn on the computer and make sure that the scanner's READY light is on. Open the document cover.



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



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



Note:

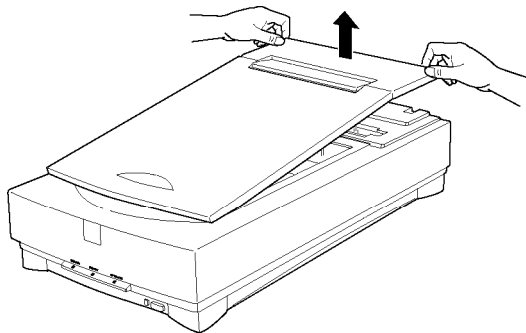
- ☐ *Make sure that the document is flat against the glass surface so that the image is properly focused. Also make sure to close the document cover. This prevents interference from external light.*
 - ☐ *Always keep the document table clean. See “Maintenance” later in this chapter for information on cleaning the scanner.*
 - ☐ *Avoid twisting the document cover when you open or close it.*
 - ☐ *Do not leave photographs on the document table for an extended period of time; they may stick to the glass.*
 - ☐ *Do not place heavy objects on top of the scanner.*
5. Use your scanner software to scan the image.

Removing the Document Cover

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



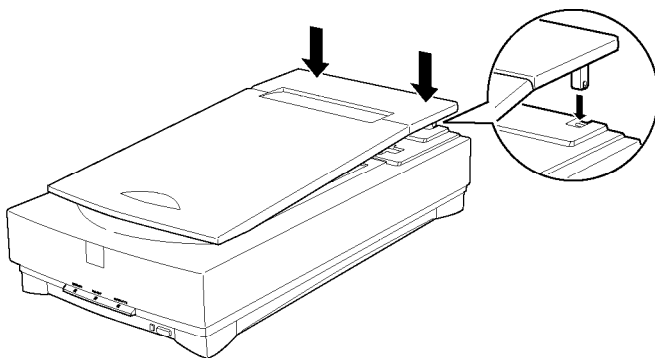
Do not force the cover off the scanner or lift from in front of the hinge. This may damage the cover.



Note:

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

Reattach the document cover by pushing straight down on the back of it until it clicks into place.



Recommended Equipment

Your scanner is sufficient for most scanning needs, but if you are not satisfied with the quality of the images on your monitor or with the speed of image processing, read this section. While it does not contain specific recommendations, it describes various possibilities for improving your scanning system. For further information, see your dealer or an experienced scanner user.

RAM and hard disk size

Scanned images can use much more memory than text files, so you may need more RAM (Random Access Memory) in your computer and a larger hard disk than you have used previously.

Accelerator boards

In addition to memory, processing speed is important because large files take longer to process than small ones. Therefore, you may want to add an accelerator board to your computer.

video cards

A video card that is sufficient for text may not be good enough for displaying graphic images, especially in color. If all your scanned images look coarse on your monitor, you may want to upgrade your video card. You need 24-bit color, also called true color or millions of colors, to produce the highest quality image reproductions.

Monitors

The resolution of your monitor, of course, also affects the quality of the image you see. Consider a high resolution monitor if you do precise color work, but first be sure you have the right video card.

File compression software

Many different programs are available to make image files smaller for storage or transmission. For example, they can enable you to store a 3MB image file on a 1.44MB floppy disk. Some compression software can compress images and restore them with no loss of data or quality; others compress images more, but the restored file is not exactly the same as the original. The difference between the original and restored files is, however, almost unnoticeable.

Maintenance

To keep your scanner operating at its best, you should clean it periodically. Before cleaning, unplug the power cable and all the interface cables connected to the scanner.

Clean the outer case with mild detergent diluted in water.

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

Be sure that there is no dust on the glass of the document table. Dust can cause white spots in your scanned image.

**Caution:**

- ☐ *Be careful not to scratch or damage the glass of the document table, and do not use a hard or abrasive brush to clean it. A damaged glass surface can decrease the scanning quality.*
- ☐ *Never use alcohol, thinner, or corrosive solvent to clean the scanner. These chemicals can damage the scanner components as well as the case.*
- ☐ *Be careful not to spill liquid into the scanner mechanism or electronic components. This could permanently damage the mechanism and circuitry.*
- ☐ *Do not spray lubricants inside the scanner.*
- ☐ *Never open the scanner case.*

Replacing the fluorescent lamp

The luminosity of the fluorescent lamp declines over time. If the lamp breaks or becomes too dim to operate normally, the scanner stops working and both the READY and ERROR lights flash. When this happens, contact your dealer about replacing the lamp assembly.

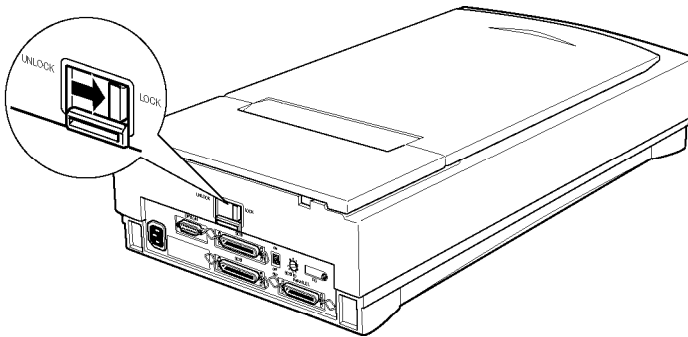
**Warning:**

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

Transporting the Scanner

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

1. Turn on the scanner and wait until the carriage moves to the home position (the back of the scanner). Then turn off the scanner.
2. Slide the transportation lock lever to the LOCK position to secure the carriage.



Note:

If the scanner is broken, the carriage may not automatically return to the home position. If it does not, raise the front of the scanner and hold it up until the carriage comes to rest at the back of the scanner. Then set the transportation lock lever to LOCK.

Chapter 3

Options

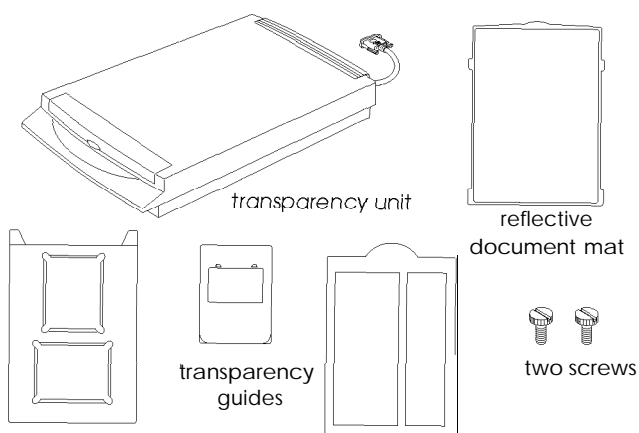
Using the Transparency Unit	3-2
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Removing the shipping screw	3-3
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Using the Transparency Unit

When installed on your scanner, the transparency unit provides high-quality, full-color scanning of transparencies and slides. Also, once you install the transparency unit, you can leave it in place when scanning normal reflective (paper) documents.

Unpacking the transparency unit

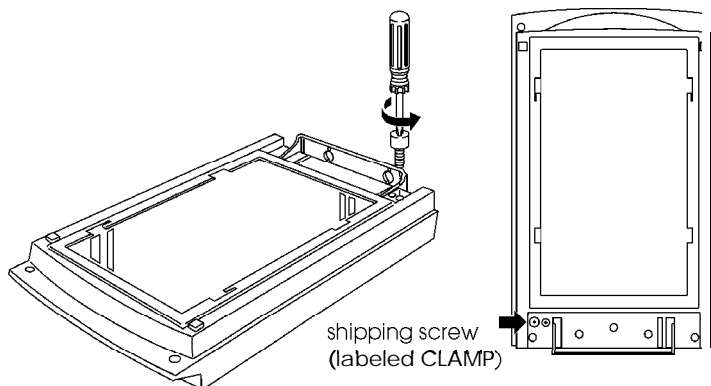
When you unpack your transparency unit, make sure you have all the items shown below and that none has been damaged during shipping. Contact your EPSON dealer if any item is missing or damaged.



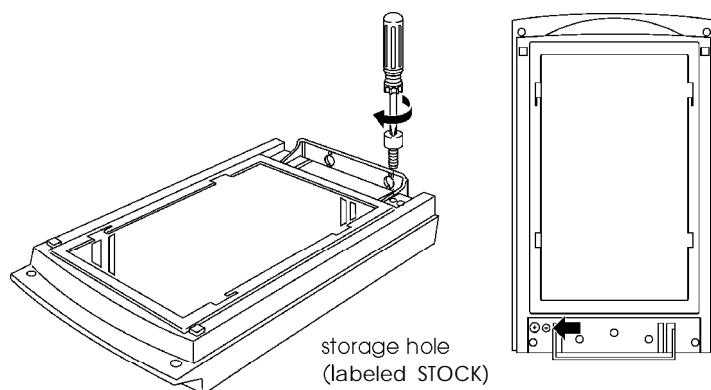
Removing the shipping screw

To prevent damage during shipping, a shipping screw is attached to the transparency unit. Follow the steps below to remove this screw before you install the transparency unit.

1. Turn the transparency unit so the glass side faces up.
2. Remove the screw as shown below.



3. Insert the screw you just removed into the storage hole as shown.



Note:

Before transporting the scanner, you need to remove the transparency unit and reattach its shipping screw. You can attach the shipping screw only when the transparency unit's lamp assembly is in its home position. To move it to its home position when the transparency unit is attached to the scanner, close the transparency unit, turn on the scanner, and then turn it off.

Installing the transparency unit

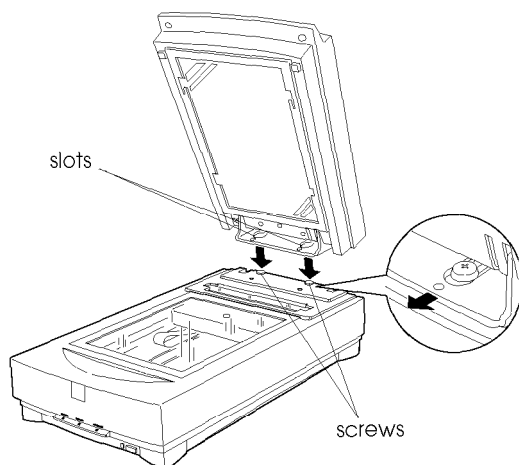
Follow the steps below to install the transparency unit on the scanner.

Note:

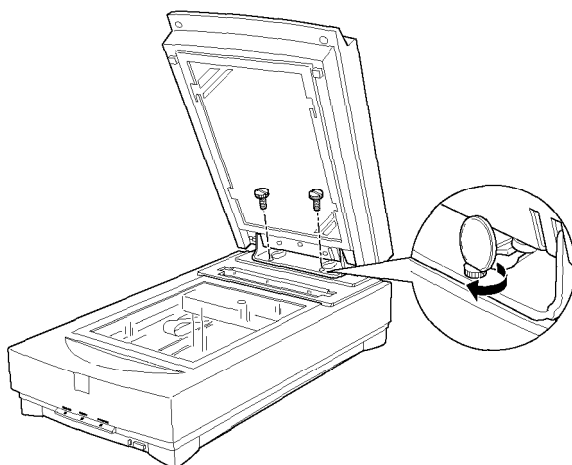
You cannot have the automatic document feeder and the transparency unit installed on the scanner at the same time.

1. Make sure the scanner is turned off, and unplug the scanner's power cable.
2. Remove the scanner's document cover by holding the cover behind the hinge and lifting the back of the cover straight up as shown on page 2-6.

3. Locate the two screws at the back of the scanner and slide the slots on the transparency unit forward underneath these two screws.

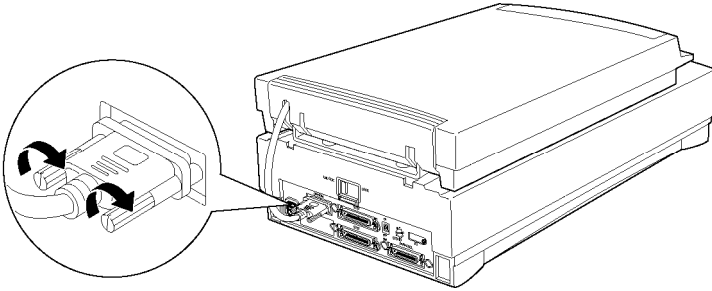


4. Insert the two screws provided with the transparency unit into the holes in the scanner as shown below, and then tighten the screws with a coin.



5. Close the transparency unit.

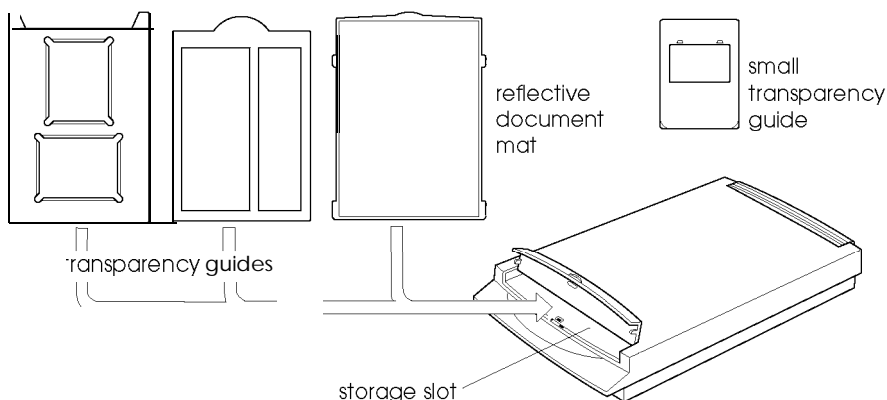
6. Connect the transparency unit's cable to the option connector on the scanner. Then reconnect the scanner's power cable.



Storing the transparency guides and reflective document mat

As shown on the next page, the transparency unit comes with three transparency guides for scanning transparencies or slides and a reflective document mat for scanning normal paper documents. To use the transparency guides, see “Positioning transparencies and slides” on the next page. To use the reflective document mat, see “Scanning normal (reflective) documents” on page 3-11.

When you are not using the reflective document mat or the large transparency guides, you can open the storage slot cover and insert them into the storage slot for safekeeping. Do not insert the small transparency guide; you may have trouble removing it.



Positioning transparencies and slides

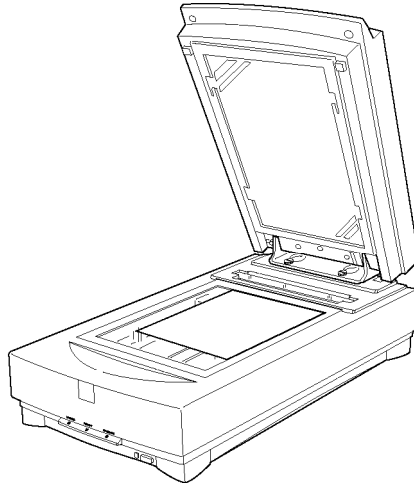
You can scan transparencies or slides of various sizes using the transparency guides. Select the transparency guide to use according to the size of your transparency or slide as described in the table below.

Transparency or slide size	Appropriate transparency guide
Up to 2.4 x 3.5 inches (6 x 9 cm)	Small transparency guide
Up to 4 x 5 inches (10.2 x 12.7 cm)	Transparency guide with two 4 x5-inch openings
Up to 4 x 10.25 inches (10.2 x 26.0 cm)	Transparency guide with two 10.25-inch-long openings

Note:

Before scanning transparencies or slides, wipe the glass of the transparency unit, the scanner's document table, and the narrow window behind the scanner's document table with a soft cloth.

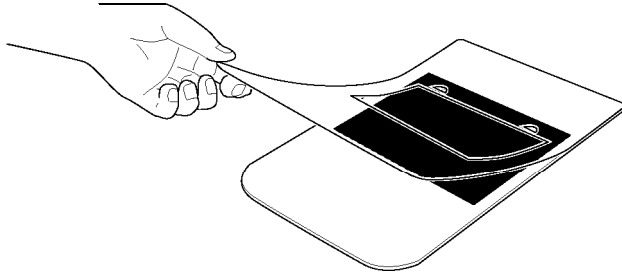
If your transparency is larger than the sizes in the table above, you can place it directly on the scanner's document table without using a transparency guide, as shown below. The transparency unit allows you to scan transparencies up to 8½ x 11 inches (21.6 x 27.9 cm) in size. See your *Scanning Utilities* manual for information on scanning with the transparency unit.



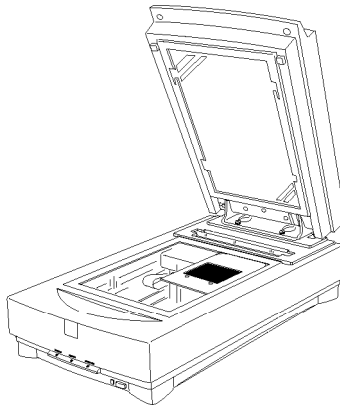
Follow the steps below to position transparencies or slides using the small transparency guide or the transparency guide with two 4 x 5-inch openings:

1. Open the transparency unit.

2. Hold up the clear plastic flap and insert the transparency or slide in the transparency guide, as shown below.



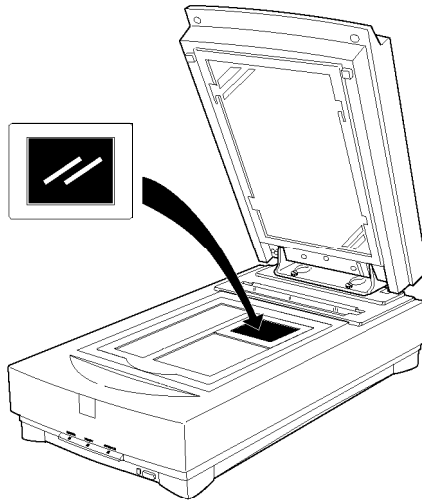
3. Place the transparency guide containing the transparency or slide face down on the scanner's document table, aligning it in the upper right corner as shown below.



4. If the reflective document mat is in place, remove it from the transparency unit.
5. Close the transparency unit. (If you do not close it completely, an option error results and you cannot scan the document.)

Follow the steps below to position transparencies or slides using the transparency guide with two 10.25-inch-long openings:

1. Open the transparency unit.
2. Place the transparency guide on the scanner's document table.
3. Place the transparency face down on the document table, aligning it with the upper right corner of the transparency guide as shown below.



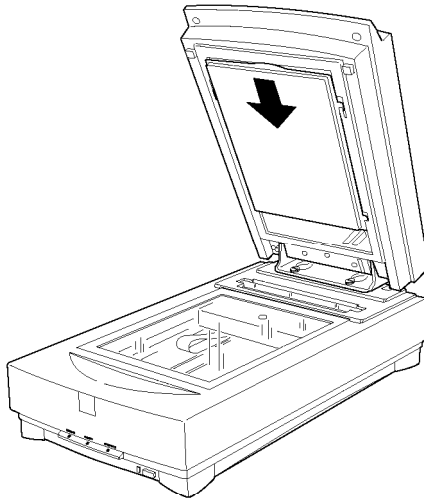
4. If the reflective document mat is in place, remove it from the transparency unit.
5. Close the transparency unit. (If you do not close it completely, an option error results and you cannot scan the document.)

Scanning normal (reflective) documents

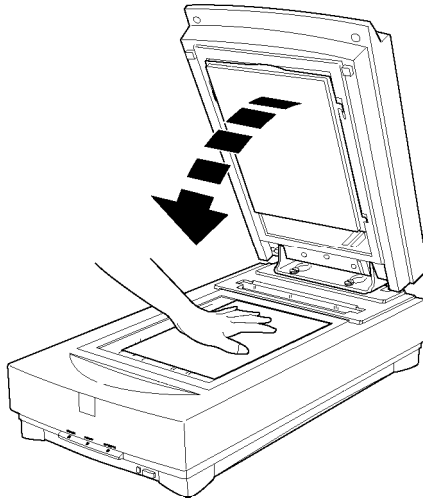
To scan a normal reflective (paper) document when the transparency unit is installed, always use the reflective document mat included with the transparency unit. Also, make sure you remove the transparency guide from the scanner's document table.

Insert the reflective document mat as described below.

1. Open the transparency unit.
2. Insert the tabs on the reflective document mat into the slots on the transparency unit and slide the mat into place.



3. Position the reflective document and close the transparency unit.



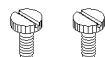
To remove the reflective document mat, slide it up and out of the slots on the transparency unit.

Using the Automatic Document Feeder

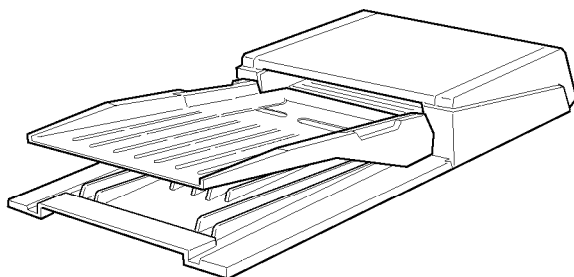
The automatic document feeder allows you to automatically load multiple-page documents into the scanner. It is particularly useful for OCR (optical character recognition) scanning, or for creating an image database.

Unpacking the automatic document feeder

When you unpack your automatic document feeder, make sure you have all the items shown below and that none is damaged. If any item is missing or damaged, contact your EPSON dealer.



two screws



automatic document feeder

Installing the automatic document feeder

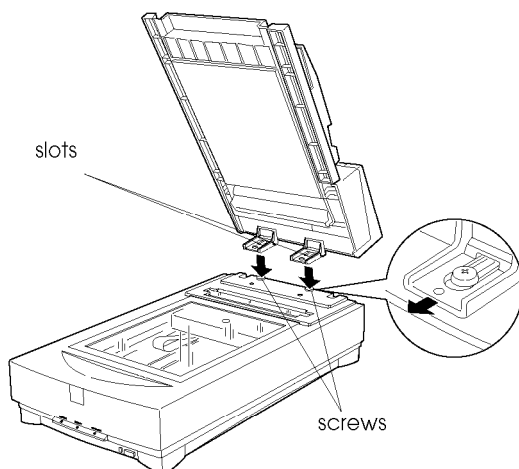
Follow the steps below to install the automatic document feeder on your scanner.

Note:

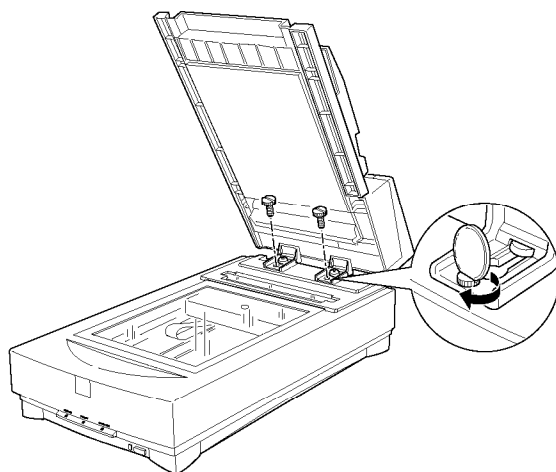
You cannot have the transparency unit and the automatic document feeder installed on the scanner at the same time.

1. Make sure the scanner is turned off, and unplug the scanner's power cable.
2. Remove the scanner's document cover by holding the cover behind the hinge and lifting the back of the cover straight up as shown on page 2-6.

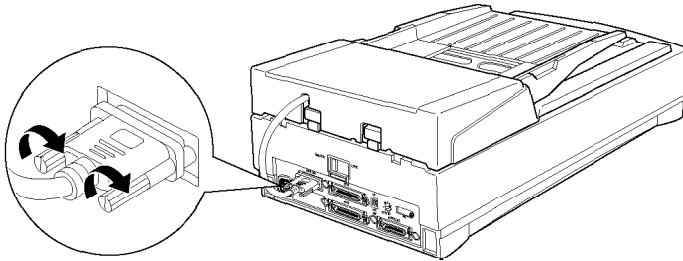
3. Locate the two screws at the back of the scanner and slide the slots on the automatic document feeder forward underneath these two screws. (Do not remove the protective materials from the automatic document feeder's mounting hardware yet.)



4. Insert the two screws provided with the automatic document feeder into the holes in the scanner as shown below, and then tighten the screws with a coin.



5. Remove the protective materials from the automatic document feeder's mounting hardware.
6. Close the automatic document feeder.
7. Connect the automatic document feeder's cable to the option connector on the scanner. Then reconnect the scanner's power cable.



Loading documents in the automatic document feeder

You can load up to 30 sheets in the automatic document feeder, based on a paper weight of 17 lb and a stack thickness of 0.24 inches (6.0 mm) or less. You can load documents of the following sizes:

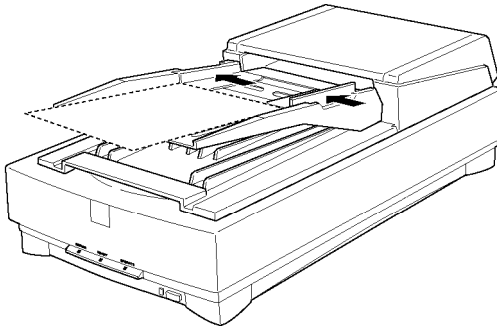
Checks	3 x 5 inches (76 x 127 mm)
B5	7.17 x 10.1 inches (182 x 257 mm)
A4	8.27 x 11.7 inches (210 x 297 mm)
Letter	8.5 x 11 inches (215.9 x 279.4 mm)

Note:

See “Document specifications” at the end of this chapter for more information on the documents you can load in the automatic document feeder.

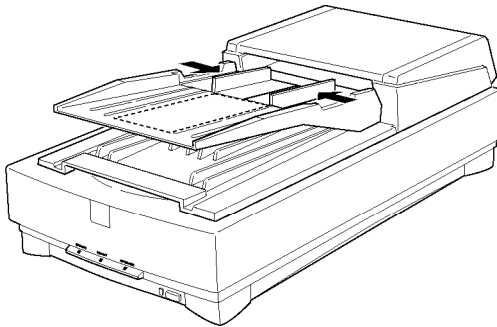
Follow the steps below to load documents into the automatic document feeder.

1. Slide the left edge guide all the way to the left and place your documents in the feeder tray with the side you want to scan facing up. Then move the right edge guide so it is flush with the right edge of the document stack.

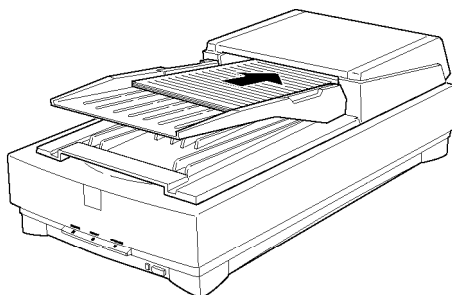


Note:

For checks, move the left edge guide to the center until it stops. Then place your checks in the tray with the side you want to scan facing up, and move the right edge guide until it is flush with the right edge of the check stack.



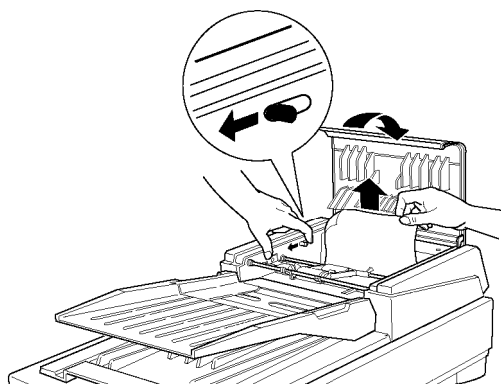
2. Insert the document stack into the automatic document feeder until it meets resistance.



Documents are fed into the lower tray when scanning is finished.

Paper jams

If a paper jam occurs, first open the automatic document feeder's cover. Then pull forward on the jam-release lever and slowly pull the jammed paper out of the feeder mechanism. (Be careful not to pull too hard; the paper may tear, making it more difficult to remove.)



After you remove the jammed paper, close the automatic document feeder cover and reset the scanner.

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 scanning surface. Then lower the automatic document feeder and scan the document.

Note:

Always close the automatic document feeder and its cover before scanning. Opening the automatic document feeder or its cover while it is operating causes an option error, and paper feeding stops.

Document specifications

Make sure the documents you load in the automatic document feeder meet the requirements below.

Size:

Width	3 to 8.5 inches (76 to 215.9 mm)
Length	5 to 11.7 inches (127 to 297 mm)

Thickness: 0.0028 to 0.0063 inches
(0.07 to 0.16 mm)

Weight: 12 to 29 lb (45 to 110 g/m²)

Paper quality: High-quality bond or thermal paper

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

Document condition

Check that your document is clean and in good condition before you load it in the automatic document feeder. Make sure of the following:

- ☐ The ink on the document is dry.
- ☐ The document has no holes or cut-out areas in it, and is not ripped or wrinkled.
- ☐ The document has no staples, paper clips, or other materials attached to it. These may damage the feeder mechanism.
- ☐ The document has no folds closer than 0.31 inches (8 mm) from its edges.
- ☐ The document is not a multipart form and is not bound, such as in a book or magazine.
- ☐ The document has no rear carbon coating.

Other precautions

Do not feed photographs or valuable original artwork into the automatic document feeder; if a document is misfed, it may become wrinkled or damaged.

When you scan high-quality color or halftone documents, it is best to open the automatic document feeder and scan each document individually.

Chapter 4

Troubleshooting

Indicator Lights	4-2
Command error	4-2
Interface error	4-3
Fatal error	4-3
Option error	4-3
Problems and Solutions	4-4

If you encounter any problems while using the scanner, check this chapter for possible solutions. Most problems fall into the following major categories:

- ❑ Incorrect setup of the interface
- ❑ Inappropriate selection of scanner functions
- ❑ Incorrect setup of your computer or software
- ❑ Incorrect operation of your software.

Also see the documentation that came with your software, computer, and printer for possible solutions.

Indicator Lights

If an error occurs, the scanner stops operating and the READY and ERROR lights show the type of error.

READY light	ERROR light	Error type
On	On	Command error
Off	Flashing	Interface error
Flashing	Flashing	Fatal error
Off	Off	Option error

Command error

The scanner has received incorrect commands from your scanning software.

If this error occurs, try to rescan the document. The scanner returns to normal when it receives correct commands. Normally you do not need to reset the scanner.

Interface error

The interface setup is wrong, or the scanner is not properly connected to the computer.

If this error occurs, check the interface connection. See “Connecting the Scanner to Your Computer” in Chapter 1. Then press the RESET button or turn the scanner off and back on to reset it.

Fatal error

This indicates one of the following problems:

- ☐ The transportation lock lever is set to the LOCK position.
- ☐ The fluorescent lamp needs to be replaced.
- ☐ The scanner is broken.
- ☐ There is a problem, such as an open cover, with the optional transparency unit or the optional automatic document feeder.

Check that the transportation lock lever is set to the UNLOCK position and check any installed options; then press the RESET button. If the scanner still does not operate properly, try turning the scanner off and then back on. If it still does not operate properly, or if this error occurs repeatedly, consult your dealer.

Option error

This indicates a problem such as a paper jam with an installed option unit.

Check the option unit and correct the problem. See Chapter 3, “Options.”

Problems and Solutions

The **OPERATE** light does not come on.

Make sure the power cable is correctly plugged into the scanner and the power outlet.

The **READY** light does not come on.

Make sure the scanner is correctly connected to the computer and that the computer is turned on.

The scanner does not start scanning.

Make sure that you have selected the correct interface port and settings with your software. Also make sure the interface board in your computer is properly installed.

If you are using the SCSI interface, confirm that the termination and SCSI ID rotary switch are set correctly. See “SCSI Setup” on page 1-8.

If you have other expansion boards in your computer, make sure that they are not interfering with the interrupt setting of the interface board for your scanner. (See your computer manual.)

The scanner software does not work properly.

Be sure you have correctly installed and set up your scanner and application software. Also make sure your software supports this scanner model. (See your *Easy Setup* and software manuals.)

Make sure that your computer system meets the requirements, such as the operating system version, specified for your software.

Confirm that the computer has enough memory for your software. If you are running other software at the same time, using RAM resident programs, or have many device drivers, the computer may not have enough memory left. (See your *Easy Setup*, application software, and computer manuals.)

The entire image is distorted or blurred.

Make sure that the document is placed flat against the document table.

You may have accidentally moved the document during scanning. Check the position of the document and do not move it while the scanner is operating.

See that the scanner is not tilted or placed on an unstable surface.

Part of the image is distorted or blurred.

Part of the document may be wrinkled, warped, or not in contact with the document table. Be sure the document is uniformly flat.

**Caution:**

Do not place heavy objects on the document table.

The edges of the document are not scanned.

The document table has non-readable areas around the edges. If part of your document extends beyond the maximum limits marked on the document table edge guides, you may have to reposition your document so that the image you want to scan is within the readable area.

Color is patchy or distorted at the edges of the image.

If the document is very thick or warped at the edges, the edges of the image may be discolored. Cover the edges of the document with opaque paper to block outside light.

If part of the document extends beyond the document table, that edge may not be in contact with the document table. Change the position of the document.

The image is faint or out of focus.

Check that the document is placed flat against the document table.

Darken your image with the brightness setting in your software.

The image is too dark.

Adjust the brightness with your software. Also check the brightness and contrast of your display screen.

Straight lines are jagged in the image.

The document may be placed at an angle on the document table. Position it so that the horizontal and vertical lines are carefully aligned with the scales on the top and side of the document table.

The image does not look the same as the original.

Try different combinations of image settings using your scanner software.

Your software may not have sufficient color matching and color management features, or these components of your software may not be correctly installed. (See your application software and computer manuals.)

If you are importing an image file into your application software, make sure the file format is one your software can read. Also check that the image settings in your application are appropriate for the type of image you want to scan. (See your application software and *Scanning Utilities* manuals.)

A line of dots is always missing in the scanned image.

If this happens in your printed image only, your printer or its print head is probably malfunctioning. (See your printer manual.)

If this happens on both your screen and printout, the scanner's sensor may be malfunctioning. Consult your dealer.

When halftoning is used, textured patterns of dots appear on particular areas of an image.

This is normal. See your application software manuals for more information on halftoning and moire (interference) patterns.

Colors on your monitor differ from those in the original document.

Check the image settings in your scanner software, especially data format (bits/pixel/color), gamma correction, and color correction. Try a different combination of these settings.

Check the color matching and color management capabilities of your computer, display adapter, and software. Some computers can change the color palette to adjust colors on your screen. (See your application software and computer manuals.)

Exact matching of colors is very difficult. Check your *Scanning Utilities*, application software, computer, and monitor manuals for information on color matching and calibration.

Printed colors differ from those in the original document.

Exact reproduction of colors is very difficult. See your application software manual for guidance on color matching.

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

The image size settings in your software determine the size of the printed image. Do not use the size of the image on your monitor to judge the printed size.

The printer does not print the image, the printout is garbled, or the printout is not an image.

Check that the printer is properly connected to the computer and is correctly set up. (See your printer manual.)

Check that your software is properly installed and set up for your printer. (See your application software and printer manuals.)

Appendix

Scanner Specifications	A-2
Electrical Specifications	A-3
Environmental Conditions	A-4
Safety Approvals	A-4
Source Document Specifications	A-5
Parallel Interface Specifications	A-5
SCSI Specifications	A-6
Initialization	A-7

Scanner Specifications

Scanner type:	Flatbed, color
Photoelectric device:	Color CCD (Charged Coupled Device) line sensor
Effective pixels:	5096 dots by 7020 dots at 600 dpi, 100%
Document size:	8.5 x 11.7 inches (216 x 297 mm) letter or A4 size (The reading area can be specified from software.)
Scanning resolution:	600 dpi (main, sub)
Output resolution:	50 dpi to 4800 dpi in 1 dpi steps Values above 600 through software interpolation
Color separation:	RGB color filters on CCD
Reading sequence:	
Monochrome	One-pass scanning
Color page sequence	Three-pass scanning (R, G, B)
Color byte sequence	One-pass scanning (R, G, B)
Color line sequence	One-pass scanning (R, G, B)
Zoom:	50% to 200% in 1% steps
Image data:	12 bits per pixel per color saved as 8 bits per pixel per color maximum
Brightness:	7 levels
Line art settings:	Fixed threshold Text Enhancement Technology (enable/disable selectable)
Halftoning process:	Enable/disable selectable 3 halftoning modes (A, B, and C) and 4 dither patterns (A, B, C, and D) for bi-level and quad-level data Halftoning mode A only in color line sequence mode; 2 downloadable dither patterns

Gamma correction:	2 types for CRT display 3 types for printer 1 type for user-defined
Color correction:	1 type for CRT display 3 types for printer output (available in color line sequence mode only) 1 type for user-defined
Interface:	Bidirectional parallel and SCSI
Light source:	Xe-gas cold cathode fluorescent lamp
Reliability:	100,000 cycles of carriage movements (main unit MCBF)
Dimensions:	Width: 13 inches (332 mm) Depth: 22.2 inches (563 mm) Height: 5.2 inches (133 mm)
Weight:	Approx. 22 lb (10 kg)

Electrical Specifications

	120 V model	220-240 V model
Input voltage range	103.5 to 132VAC	198 to 264 VAC
Rated frequency	50 to 60 Hz	
Input frequency	49.5 to 60.5 Hz	
Rated current	0.8 A	0.4 A
Power consumption	Approx. 25 W, 50 W maximum with optional unit	

Note:

Check the label on the back of the scanner for the voltage of your scanner.

Environmental Conditions

Temperature:

Operation	41° to 95° F (5° to 35° C)
Storage	-13° to 140° F (-25° to 60° C)

Humidity:

Operation	10% to 80%, without condensation
Storage	10% to 85%, without condensation

Operating conditions:	Ordinary office or home conditions. Extremely dusty conditions should be avoided. Operation under direct sunlight or near a strong light source should be avoided.
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Note:

Specifications are subject to change without notice.

Safety Approvals

Safety standards:

120 V model	UL 1950 with D3, CSA C22.2 950 with D3
220-240 V model	EN 60950 (TÜV) EN 60950 Nordic Deviation (NEMKO)

EMC:

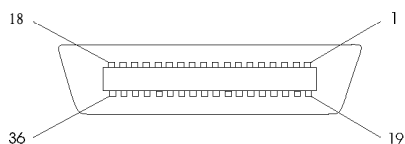
120 V model	FCC part 15 subpart B class B CSA C108.8 class B
220-240 V model	EN55022 (CISPR Pub 22) class B EN 61000-3-2 EN 61000-3-3 EN 50082-1, IEC 801-2 IEC 802-3 IEC 802-4

Source Document Specifications

Reflective type:	Opaque documents with smooth surfaces
Transparency type:	Reversal film, negative film (optional transparency unit required)

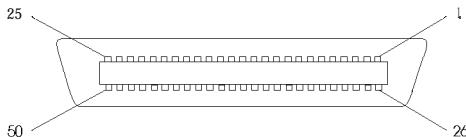
Parallel Interface Specifications

Interface type:	Bidirectional parallel interface
Data format:	8-bit parallel
Synchronization:	By external strobe pulse
Handshaking:	By $\overline{\text{ACKNLG}}$ and BUSY signals
Logic level:	Input/output data and interface control signals are TTL compatible
Connector type:	36-pin Centronics [®] type connector
Connector pin arrangement:	



SCSI Specifications

Interface type:	ANSI X3.131-1986 standard
Functions:	BUS FREE phase ARBITRATION phase SELECTION/RESELECTION phase COMMAND phase (Logical unit number is fixed to 0 and command link function is not supported.) DATA phase Data in phase Data out phase STATUS phase MESSAGE phase MESSAGE IN phase MESSAGE OUT phase ATTENTION condition RESET condition
Logic level:	TTL compatible
Electrical standard:	ANSI X3.131-1986
ID number:	Selectable from 0 to 7 (Select * for ES-1200C Emulation mode. In ES-1200C Emulation mode, the SCSI ID number is 2.)
Terminator:	Internal terminator selectable (enable/disable)
Connector type:	Two 50-pin connectors
Connector pin arrangement:	



Initialization

The scanner can be initialized (returned to a fixed set of conditions) in the following ways:

Hardware initialization	<ul style="list-style-type: none">* The scanner is turned on.* The scanner receives an INIT signal from the parallel interface: pin 31 goes LOW.* The scanner receives a SCSI Reset signal from the SCSI interface.
Software initialization	<ul style="list-style-type: none">* Software sends the ESC @ (initialize the scanner) command.* The scanner receives a SCSI Bus Device Message,

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