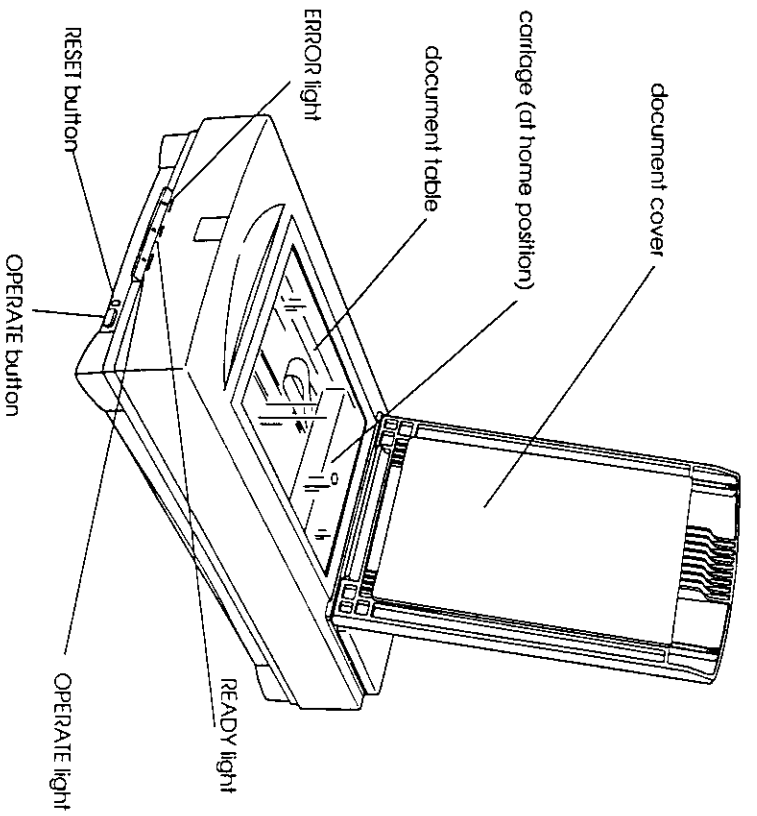


Scanner



EPSON® GT-9500

9600

COLOR IMAGE SCANNER

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User's Guide

Declaration of Conformity

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Declares that the Product:

Product Name: Image Scanner
Type Name: GT-9500
Model: GS90A

Conforms to the following Directive(s) and Norm(s):

Directive 89/336/EEC:

EN 55022 Class B
EN 61000-3-2
EN 61000-3-3
EN 50082-1
IEC 801-2
IEC 801-3
IEC 801-4

Directive 73/23/EEC:

EN 60950

August, 1996

M. Hamamoto
President of EPSON EUROPE B.V.

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Introduction

The EPSON® GT-9500 is a true 600-dpi full-color flatbed image scanner with an A4 or letter 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 achieves extremely high quality in color by reading 36 bits per pixel and saving 24 bits per pixel.

Features

The GT-9500 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 grays.
- ☐ Scanning resolution of 600 dpi. The output resolution is selectable to match the resolution of your output device.
- ☐ Automatic Area Segmentation (AAS) provides you with the capability to separate text from photographs on a page so that grayscale images will be clearer and text recognition is more accurate.
- ☐ Text Enhancement Technology. This feature enhances text recognition accuracy when using your 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.
- ☐ A special feature for higher quality output with EPSON TWAIN's "Best & de-screening" option automatically removes unwanted moiré patterns from scanned images.

For United Kingdom Users

Safety information



Warning: This appliance must be earthed. Refer to rating plate for voltage and check that the appliance voltage corresponds to the supply voltage.

Important: The wires in the mains lead fitted to this appliance are coloured in accordance with the following code:

*Green and yellow — Earth
Blue — Neutral
Brown — Live*

As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The green and yellow wire must be connected to the terminal in the plug which is marked with the letter E or with the earth symbol ($\perp$).

The blue wire must be connected to the terminal in the plug marked with the letter N.

The brown wire must be connected to the terminal in the plug marked with the letter L.

If damage occurs to the plug, replace the cord set or consult a qualified electrician.

Replace fuses only with a fuse of the correct size and rating.

Important Safety Instructions

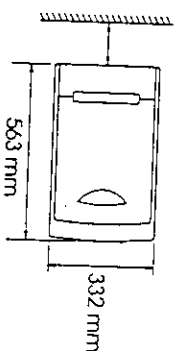
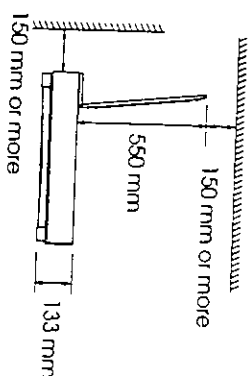
Read all of these instructions and save them for later reference. Follow all warnings and instructions marked on the scanner.

- ☐ Unplug the scanner before cleaning. Clean with a damp cloth only. Do not spill liquid on the scanner.
- ☐ Do not place the scanner on an unstable surface or near a radiator or heat source.
- ☐ Do not block or cover the openings in the scanner's cabinet. Do not insert objects through the slots.
- ☐ Use only the type of power source indicated on the scanner's label.
- ☐ Connect all equipment to properly grounded power outlets. Avoid using outlets on the same circuit as photocopiers or air control systems that regularly switch on and off.
- ☐ Do not let the power cord become damaged or frayed.
- ☐ If you use an extension cord with the scanner, make sure the total ampere rating of the devices plugged into the extension cord does not exceed the cord's ampere rating. Also, make sure the total 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.

Choosing a Place for the Scanner

Follow the guidelines listed 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 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.

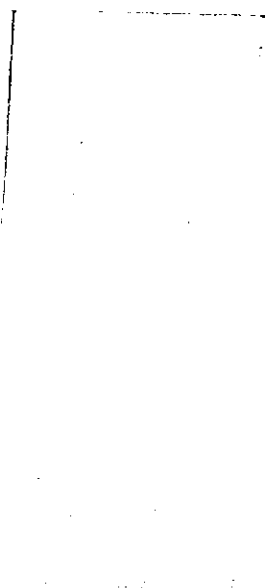


- ❑ Keep the scanner away from high temperatures and humidity. Also avoid using or storing the scanner in places subject to rapid changes of temperature and humidity.
- ❑ Keep the scanner away from direct sunlight and strong light sources.
- ❑ Avoid places subject to shocks and vibrations.

Releasing the Transportation Lock Lever

Before connecting the scanner to a power source, you must 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 shown below.



Note:

You will need to return the transportation lock lever to the LOCK position when you store or transport the scanner.

Note:
IBM PS/2® computers and some other PCs have built-in bidirectional parallel interfaces. You do not need to install an additional one in these computers unless you need the built-in parallel interface for your printer.

Install a SCSI interface board in your computer, if necessary. Then connect the computer to the scanner's SCSI interface.

- For a 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.

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



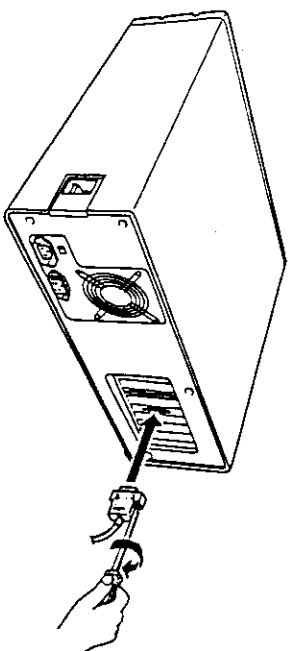
Caution:

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.

Use a standard shielded parallel interface cable.

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

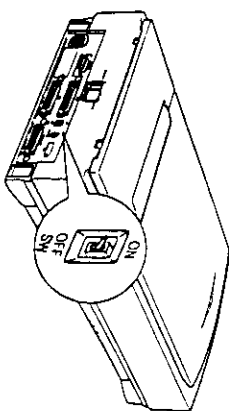
2. Connect the 25-pin end of the cable to the computer; then tighten the screws on the sides of the connector.



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

Terminator

The scanner has a built-in 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 internal SCSI terminator turned on. It is on if the switch is up.



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

Connecting the scanner to your computer or to another SCSI device

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 another SCSI device.

Note:

- ☐ The SCSI port of the Macintosh is the larger port with the SCSI icon  over it.

- ☐ If you are connecting the scanner to a SCSI device other than the computer, use a cable with 50-pin connectors on both ends.

4. Connect the power cables of your computer, scanner, and other external SCSI devices.
5. Always turn on the scanner and other external SCSI devices before you turn on your computer.

Power-on sequence

Follow these instructions each time you turn your computer and SCSI devices on.

If you have an internal hard disk, turn on the scanner and any other 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, external hard disk (which should be first on the daisy chain), and any other 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.

Option error

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

Check the option unit and correct the cause of the trouble.

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 on your computer is properly installed.

If you are using the SCSI interface, confirm that the terminator and SCSI ID are correctly set up. See page 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 your software.

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 software and computer manuals.)

Make sure that your software supports this model of scanner and that you correctly installed the software. (See your software 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.

Exact matching of colors is very difficult. The reason for this is explained in your *Color Guide*. Check your software and monitor manuals for information on color matching and calibration.

Printed colors are different from those in the original image.

Exact reproduction of colors is very difficult. The reason for this is explained in your *Color Guide*. See your software manual or your printing company for guidance on color matching.

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

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 image cannot be printed, the printout is garbled, or the printout is not an image.

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

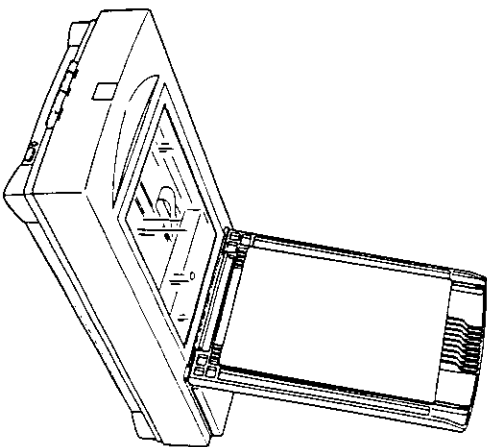
Check that your software is properly installed and set up for your printer. (See your software manual.)

Chapter 2

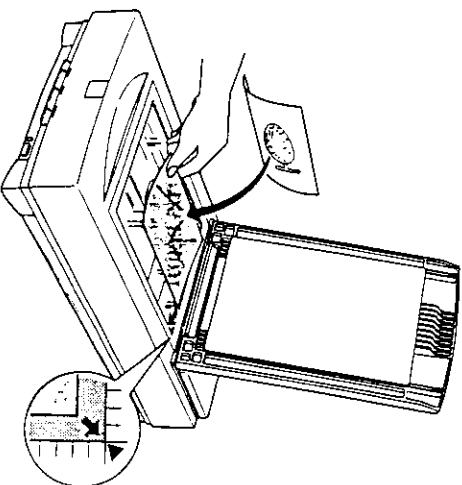
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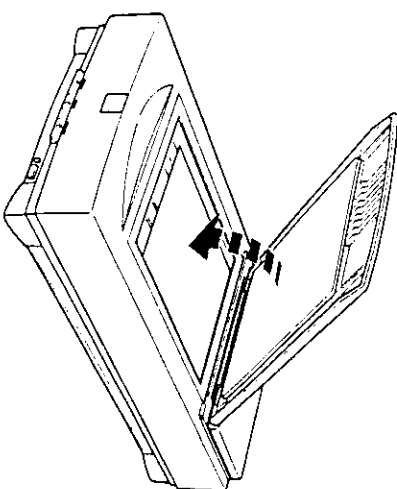
2. Turn on the computer and make sure that the scanner's READY light is on. Open the document cover.



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.

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 1.44 MB 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.

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 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 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 lamps

The luminosity of the fluorescent lamps declines over time. If the lamps break or become too dim to operate normally, the scanner stops working and both the READY and ERROR lights flash. When this happens, the lamp assembly must be replaced. For details, contact your dealer.



Caution:

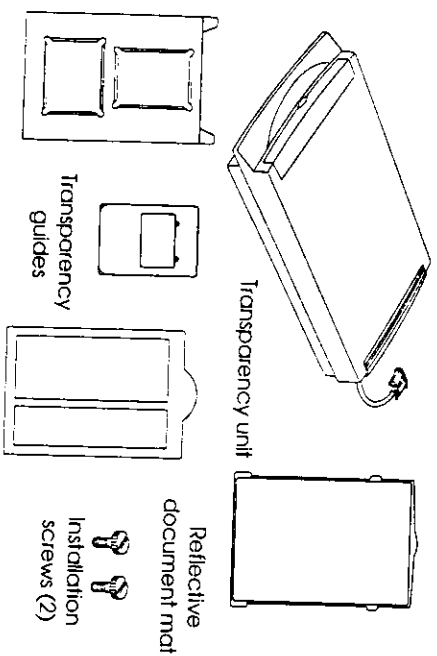
Never open the case of the scanner. If you think repairs or adjustments are necessary, consult your dealer.

Using the A4 Transparency Unit

This transparency unit is a high-quality device developed to enable EPSON scanner owners to scan transparencies and slides. By installing this unit on your EPSON scanner, you can scan transparencies and slides beautifully, in full color. Also, it is not necessary to remove this unit if you wish to return to scanning normal reflective (paper) documents.

Unpacking the unit

When you first open the package, make sure that all the following items are included and that none has been damaged during shipping. Contact your EPSON dealer if any item is missing or damaged.



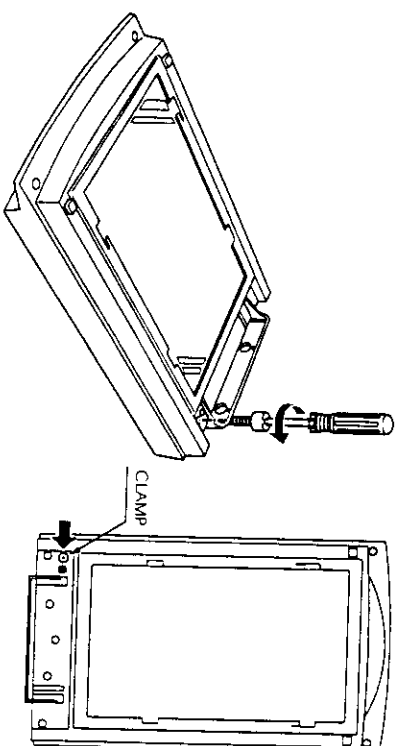
Note:

Do not store the small transparency guide in the pocket.

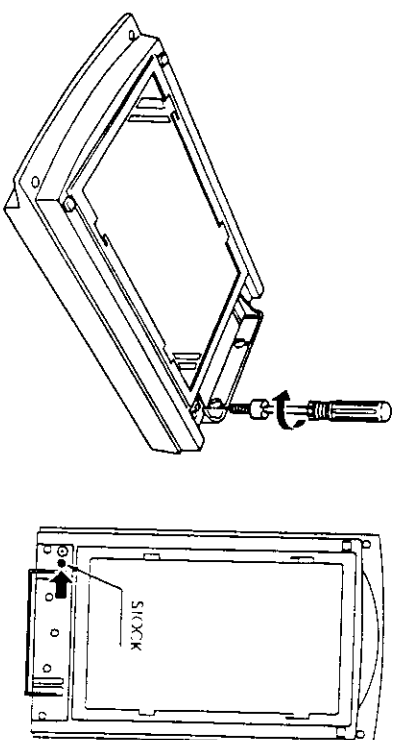
Removing the shipping screw

To prevent damage during shipping a shipping screw is attached to the transparency unit. Make sure this screw is removed according to the following steps before you attempt to use this unit.

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

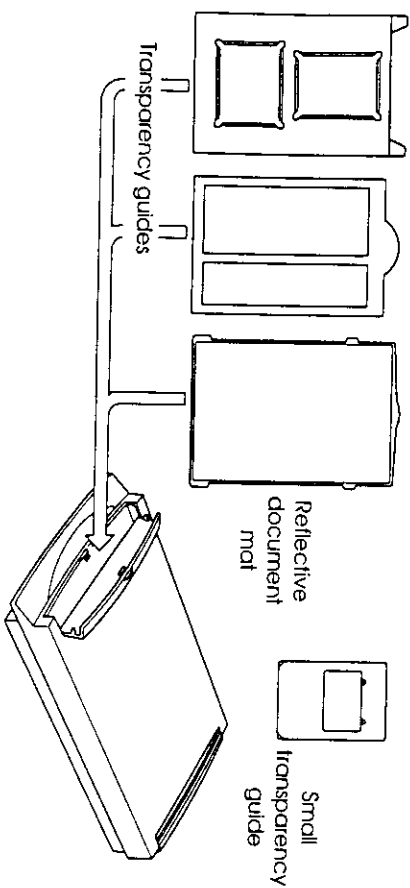


3. Insert the screw you just removed into the storage hole as shown.



Transparency guide and reflective document mat

Three transparency guides for scanning transparencies and a reflective document mat for scanning normal paper documents are included with this unit. To use them, see the instructions below.



Do not put the small transparency guide into the transparency unit pocket.

Positioning transparencies

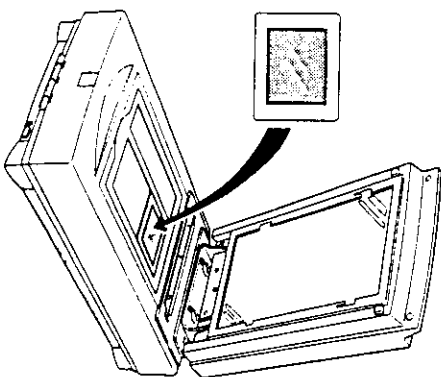
You can scan 35 mm slides or transparencies up to 5 × 5 inches (127 × 127 mm) in size.

Note:

- ☐ Wipe the glass of the transparency unit, the scanner's document table, and the narrow window near the mounting bracket before scanning transparencies.
- ☐ Your scanner software automatically controls the operation of the transparency unit.

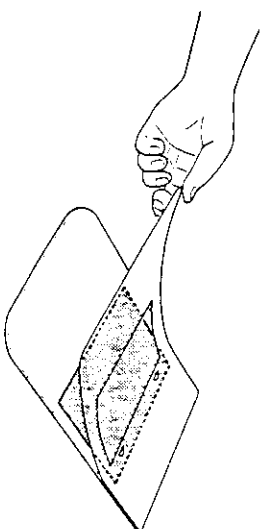
Follow the steps below to position transparencies in the transparency guide.

1. Open the transparency unit.
2. Place the transparency guide on the scanner's document table.
3. Place the transparency face down on the scanner's glass document table and align it with the upper right-hand corner of the transparency guide.



Note:

When scanning Broovie size (6 cm × 9 cm) film, or similar size film, insert the film in the small transparency guide as shown below:



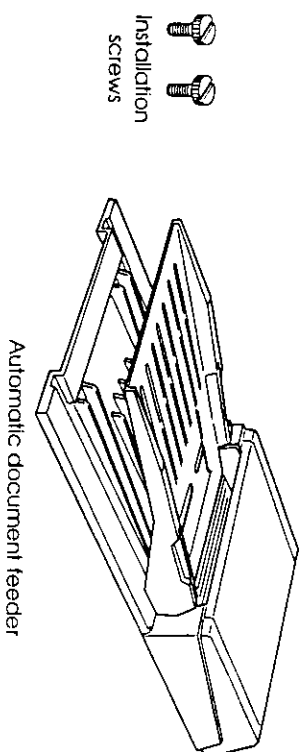
To remove the reflective document mat, slide it up and out of the slots on the transparency unit.

Using the Automatic Document Feeder

The Automatic Document Feeder (B813001) allows you to automatically load multiple-page documents into the GT-9500 scanner. This document feeder is particularly useful for OCR (optical character recognition) scanning, or for creating an image database.

Unpacking the automatic document feeder

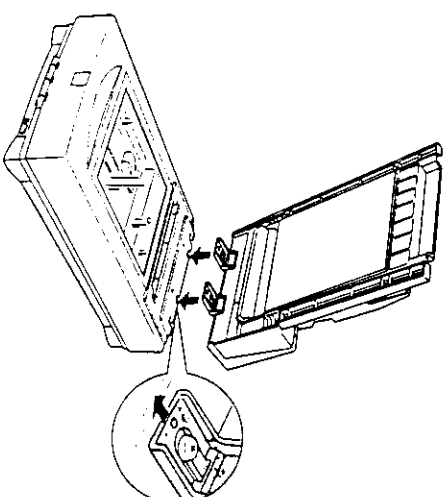
When you unpack your automatic document feeder, make sure you have all the parts shown below and that none is damaged. If you find any missing or damaged items, contact your EPSON dealer immediately.



Installing the automatic document feeder

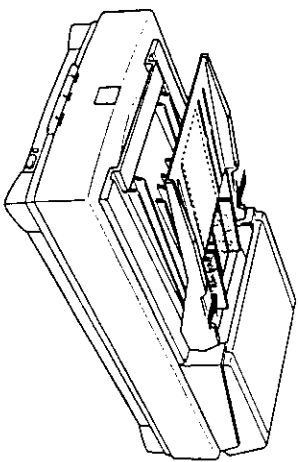
Follow the steps below to install the automatic document feeder on your EPSON scanner.

1. Make sure your scanner is turned off, and unplug the scanner's power cable.
2. Remove your scanner's document cover by holding the cover behind the hinge and lifting the back of the cover straight up. (See page 2-6)
3. The scanner comes with two installation screws attached; slide the mounting 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.

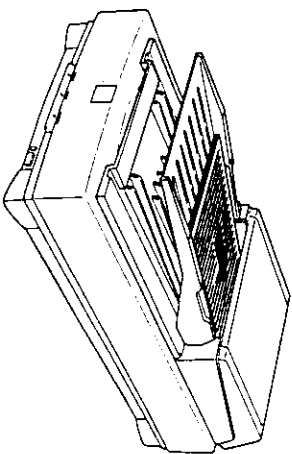


Note:

For checks, move the left edge guide to the center till it stops, then place your checks in the tray and move the right edge flush against them.



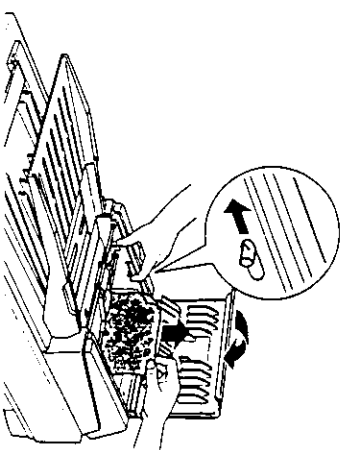
2. Insert the paper stack into the automatic document feeder until it meets resistance. Make sure that the side you want to scan is facing up.



Documents are fed into the lower tray after 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 removing the jammed paper, close the 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 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:

- ☐ Opening the automatic document feeder or its cover while it is operating results in an option error and paper feeding stops.
- ☐ Always close the automatic document feeder and its cover before using it.

Appendix

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Environmental

Temperature:

Operation

5° C to 35° C (41° F to 95° F)

Storage

-25° C to 60° C (-13° F to 140° F)

Humidity:

Operation

10% to 80%, without condensation

Storage

10% to 85%, without condensation

Operating conditions:

Ordinary office or home conditions

Extreme dust should be avoided.

Operation under direct sunlight

or near a strong light source should be avoided.

Note:

Specifications are subject to change without notice.

Safety approvals

Safety standards:

120V model

UL 1950 with D3, CSA C22.2 950 with D3

220-240V model

EN 60950 (TÜV)

EN 60950 Nordic Deviation (NEMKO)

EMC:

120V model

FCC part 15 subpart B class B

CSA C108.8 class B

220-240V 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

Reflective type:

Opaque documents with smooth surfaces

Transparency type:

Reversal film, Negative film

(Optional transparency unit is required.)

Parallel interface

Interface type:

Bidirectional parallel interface

Data format:

8-bit parallel

Synchronization:

By external strobe pulse

Handshaking:

By ACKNLG and BUSY signals

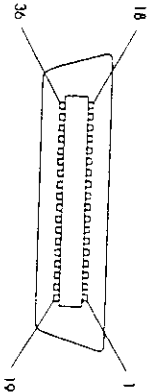
Logic level:

Input/output data and interface control signals are TTL compatible

Connector type:

36-pin Centronics® type connector

Connector pin arrangement:



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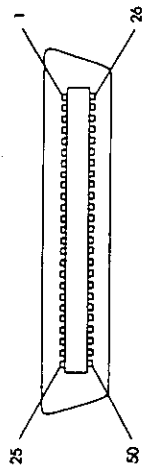
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- Interface type: ANSI X3.131-1986 standard
- Functions: BUS FREE phase
ARBITRATION phase
SELECTION/RESELECTION phase
COMMAND phase
(Logical Unit number is fixed to 0 and command link function is not supported.)
DATA phase
Data in phase
Data out phase
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 Setting: Selectable from 0 to 7
(Select * for GT-9000 Emulation mode. In GT-9000 Emulation mode, the SCSI ID number is 2.)
- Terminator: Internal terminator selectable (enable/disable)
- Connector type: Two 50-pin connectors
- Connector pin arrangement:



Initialization Methods

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

Hardware initialization	* The scanner is turned on. * The scanner receives an $\overline{INIT}$ signal from the parallel interface; pin 31 goes LOW. * The scanner receives a SCSI Reset signal from the SCSI Interface.
Software initialization	* Software sends the ESC @ (initialize the scanner) command. * The scanner receives a SCSI Bus Device Message.

Scanner Specifications

Scanning

Scanner type:	Flatbed, color
Photoelectric device:	Color CCD line sensor
Effective pixels:	5096 dots by 7020 dots at 600 dpi, 100%
Document size:	216 mm x 297 mm (8.5 inches x 11.7 inches) A4 or US letter size (The reading area can be specified from software.)
Scanning resolution:	600 dpi (main, sub)
Output resolution:	50 dpi to 2400 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: 332 mm (13 inches) Depth: 563 mm (22.2 inches) Height: 133 mm (5.2 inches)
Weight:	Approx. 10 kg (22 lb)

Electrical

	120 V model	220-240 V model
Input voltage range	AC 103.5 to 132 V	AC 198 to 264 V
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. 25W, 50 W maximum with optional unit	

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

Document specifications

Size:	Width 3 to 8.5 inches (76 to 215.9 mm) Length 5 to 14 inches (127 to 355.6 mm)
Thickness:	0.07 to 0.16 mm
Weight:	45 to 110 kg
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:

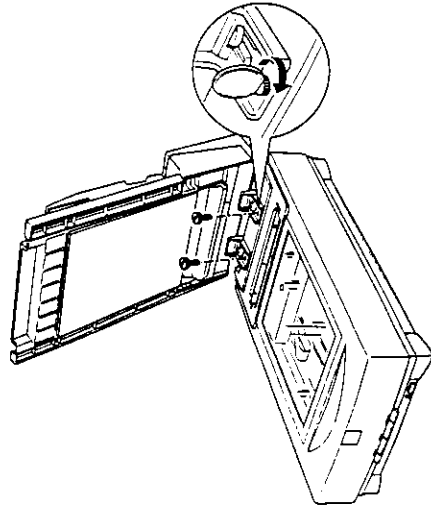
- ☐ Ink on the document is dry.
- ☐ The document has no holes, is not ripped or wrinkled, and has no articles attached to it.
- ☐ The document has no staples or other objects attached that might damage the feeder mechanism.
- ☐ The document has no folds closer than 8 mm from its edge.
- ☐ The document is not a multipart form or bound.
- ☐ The document has no rear carbon coating.
- ☐ The document has no cut out areas.

Other precautions

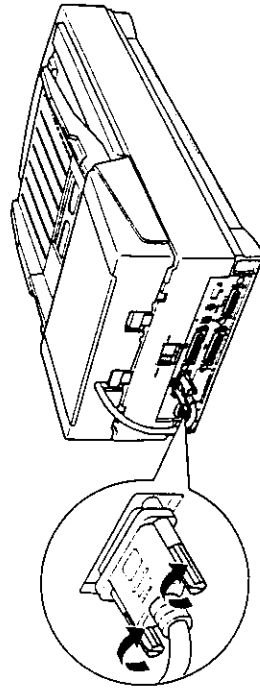
Do not feed photographic sheets or particularly valuable original artwork into this automatic document feeder; misfeeding a document may result in accidental wrinkling or damage.

When you are scanning high-quality color or halftone documents, it is recommended you open the automatic document sheet feeder and scan documents individually.

4. Insert the installation screws included with your automatic document feeder into the holes in the scanner, then use a coin to tighten them.



5. Remove the protective materials from the automatic document feeder's mounting hardware.
6. Close the automatic document feeder.
7. Attach the automatic document feeder's connector to the scanner's option interface.



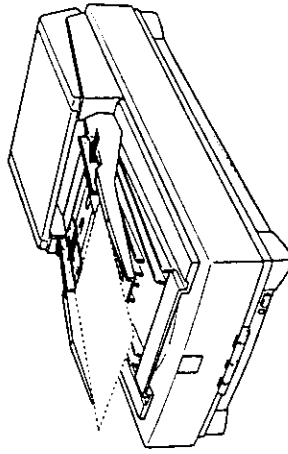
Loading paper into your automatic document feeder

Your automatic document feeder can automatically load up to 30 sheets of the following paper sizes (based on a paper weight of 17 lbs and a stack thickness of 6.0 mm or less):

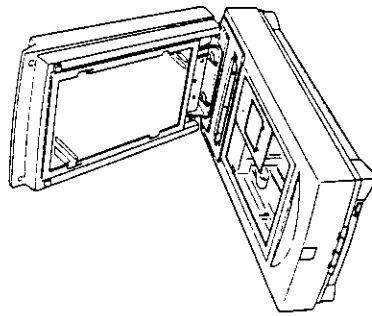
Checks	76 x 127 mm (3 x 5 inches)
B5	182 x 257 mm (7.17 x 10.1 inches)
A4	210 x 297 mm (8.27 x 11.69 inches)
Letter	215.9 x 279.4 mm (8.5 x 11 inches)
Legal	215.9 x 355.6 mm (8.5 x 14 inches)

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

1. Slide the left edge guide all the way to the left and place your paper in the feeder tray. Then move the right edge guide so it is flush with the right edge of your paper.

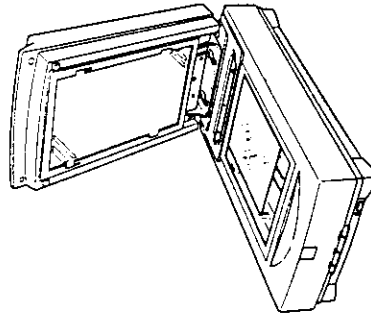


Then place the guide at the right-hand corner.



If the film size is 4" x 5", or a similar size film, insert the film in the other transparency guide and place it the same as you would place the small transparency guide.

If the film is larger than the guides, put it directly on the table.



4. Close the unit. If the reflective document mat is in place, remove it from the transparency unit.

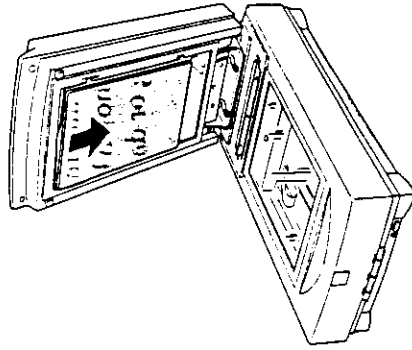
Note:
Make sure the unit is completely closed. If it is not closed, an option error results and you cannot scan the document.

Scanning normal (reflective) documents

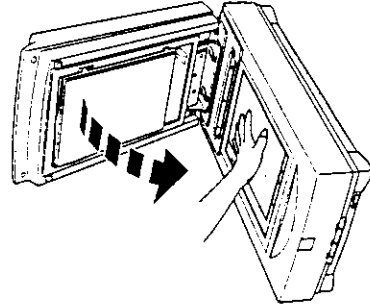
When you return to scanning normal reflective documents, you should always insert the reflective document mat included with this unit. Also, make sure you remove the transparency guide from the scanner's document table.

Insert the reflective document mat as described below.

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



3. Position the reflective document and close the unit.



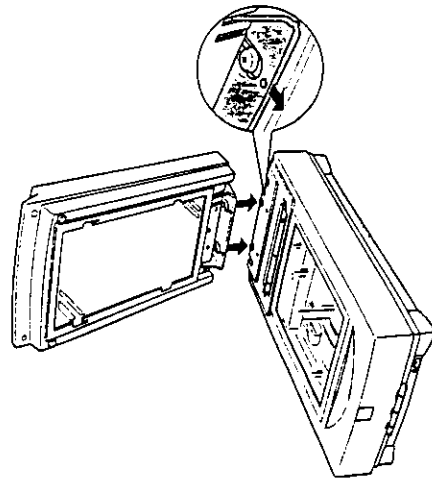
Note:

- ☐ When transporting the scanner, you should remove the transparency unit and reattach the shipping screw.
- ☐ If the unit's lamp assembly is not in its home position, you cannot attach the shipping screw. 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. Then turn off the scanner and remove the transparency unit.

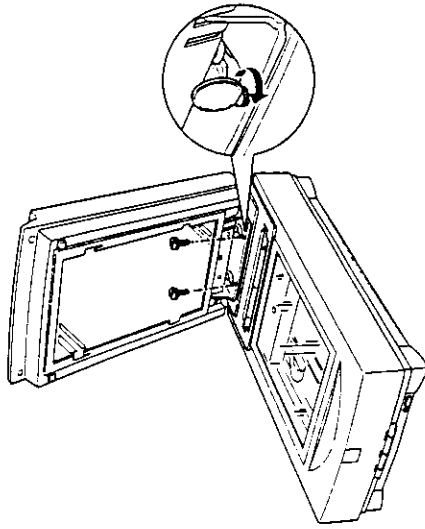
Installing the transparency unit

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

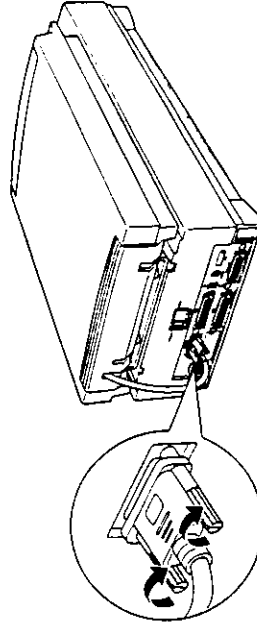
1. Make sure the scanner is turned off and unplug the power cable from the scanner.
2. Remove the document cover from the scanner by holding the cover behind the hinge and lifting the back of the cover straight up. (See page 2-6)
3. The scanner comes with two installation screws attached; slide the mounting slots on the transparency unit forward underneath these two screws.



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

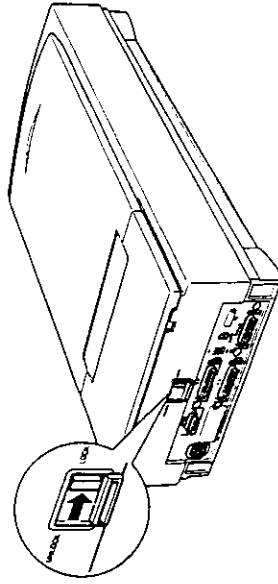


5. Close the transparency unit.
6. Connect the transparency unit's connector to the option connector on the scanner.



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:

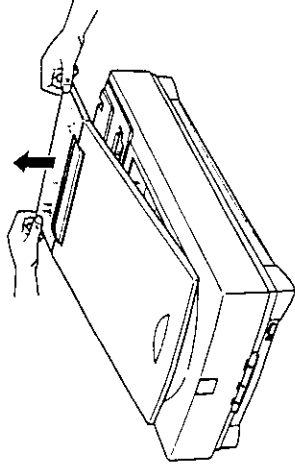
If the scanner is broken, the carriage may not automatically return to the home position. If it does not, raise the front of the scanner and hold it up until the carriage comes to rest at the back of the scanner. Then set the transportation lock lever to LOCK.

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Removing the Document Cover

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.



Note:

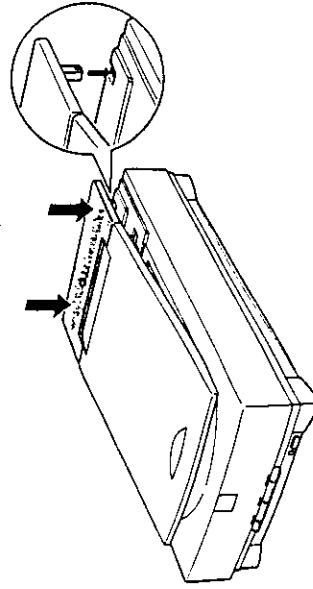
When scanning with the cover removed, make sure you cover any exposed areas of the document table to prevent interference from external light.



Caution:

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

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.

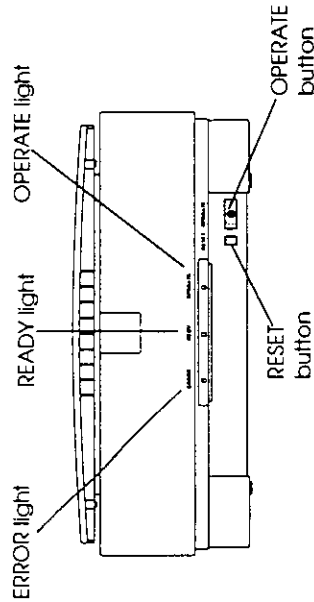
Accelerator boards

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 will need 24-bit color, also called true color or millions of colors, to make the highest quality image reproductions.

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. This button may not work if two computers are connected to the scanner and the computer with the bidirectional parallel interface is not turned on.

Scanner errors

If an error occurs, the scanner stops operating and the READY and ERROR lights show the type of error. See page 1-12, "Problems and Solutions," for details.

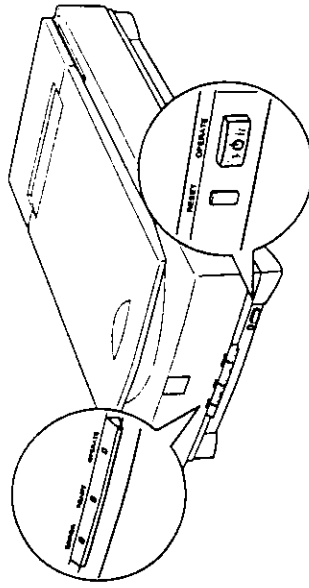
READY light	ERROR light	Error type
On	On	Command error
Off	Flashing	Interface error
Flashing	Flashing	Fatal error
Off	Off	Option error

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.



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 flush against the document table.

Make the brightness setting in your software darker.

The image is too dark.

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

Straight lines in the image are jagged.

The document may be placed at an angle on the document table. Align 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 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 software manual.)

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 the explanation of moiré in the *Color Guide*.

Colors on your monitor are different from those in the original image.

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 software and computer manuals.)

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 the user's manual for the software. Then read Chapter 2, "Scanner Basics," before your first scan.

Problems and Solutions

The problems you may have while using the scanner often involve the operation of your software and computer. Problems fall into the following major categories:

- ☐ Incorrect setup of the interface
- ☐ Inappropriate selection of the 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.

When 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.

When this error occurs, check the interface connection. Then push the RESET button or turn the scanner off and back on to reset it.

Fatal error

This indicates one of the following problems:

- ☐ One or more fluorescent lamps needs to be replaced.
- ☐ The transportation lock lever is not released.
- ☐ 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 released and check any installed options; then push the RESET button. If the scanner still does not operate properly, try turning the scanner off and then back on. If the scanner still does not operate properly, or if this error occurs repeatedly, consult your dealer.

For some PCs, you must first install a SCSI board in your computer. Then follow the directions below to connect your scanner and 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 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 the previous device.

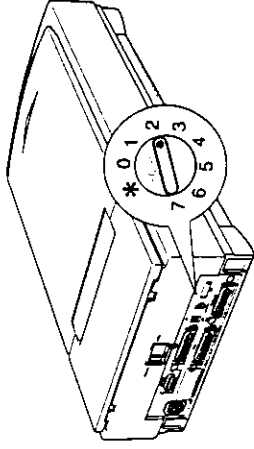
Each device has a SCSI ID number: the computer is usually number 7, and each of the other devices must have a different number between 0 and 6. Also, the first device and the last device in the chain (not including the computer) must have a terminator. No other device can have a terminator or if a terminator does exist, it must be turned off. The scanner has two 50-pin SCSI connectors and a built-in terminator that can be turned on or off.

If you connect the scanner directly to the Macintosh, you need 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). If you connect the scanner to another SCSI device, use a SCSI cable with 50-pin connectors on both ends.

SCSI ID number setting

The factory-set SCSI ID of the scanner is 2. The computer is usually ID number 7. If you are going to add the scanner to a system in which one of your SCSI devices already has a SCSI ID of 2, change the ID number of the scanner to an unused number as described below.

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



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



Caution:

Do not set the SCSI ID to an ID 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 GT-9000 scanner, set the dial to the position marked * to select GT-9000 Emulation mode. In GT-9000 Emulation mode, the scanner's SCSI ID number is 2. If one of your other SCSI devices is already assigned ID number 2, change that device's number to an unused number.

Plugging in the Scanner

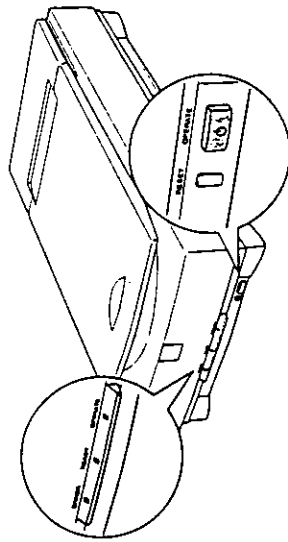
1. Connect the power cable to the power inlet on the rear of the scanner and plug the other end into a properly grounded outlet as shown below.



Caution:

There are several versions of this scanner designed for different voltages, and it is not possible to change the 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 the scanner off.



Caution:

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

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 is initializing, the fluorescent lamps on the carriage flash. 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 you have released the transportation lock lever, then turn it on again.

Connecting the Scanner to Your Computer

Your scanner has both a bidirectional parallel interface and a SCSI interface. You can connect both kinds of interface cables to the scanner at the same time. The scanner switches automatically to the appropriate interface.

Computer types

- ☐ For 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.

- 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.

Chapter 1

Setting Up the Scanner

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- The EPSON Scan! II scanner utility and EPSON TWAIN let you take full advantage of your scanner's advanced features.
- Software control of all scanner functions. Software commands are backward compatible with the EPSON GT-9000 color image scanner.

Options

The following optional items are available to expand the versatility of your scanner. For detailed information on the use of these options, see the guides that come with the options.

Bidirectional Parallel Interface Board (B80818*)

This board provides parallel connection between the scanner and IBM® PC/AT or IBM-compatible computers. Setup and installation of this board are fully described in the manual that comes with the board. An interface cable must be purchased separately.

Automatic Document Feeder (B813001)

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.

Transparency Unit (B813072)

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

SCSI System Cable (25-pin to 50-pin) (B860081)

This cable provides connection between a SCSI device and an Apple® Macintosh® computer.

SCSI Peripheral Cable (50-pin to 50-pin) (B860091)

This cable provides connection between two SCSI devices in a daisy chain.

Interface Cables

For the parallel interface, you need to have a suitable interface cable to connect the scanner to your computer. Make sure you choose a shielded cable.

How to Use 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 contains detailed information about options, and the Appendix provides technical information about your scanner.

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.

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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 or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures.

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

WARNING

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

For Canadian Users

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.