

EPSON
Film Scanner
FilmScan 200

User's Guide

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According to ISO/IEC Guide 22 and EN 45014
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Declares that the Product:

Product Name: Film scanner
Model: G621A, G621B

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:
EN60950

March, 1997

M. Hamamoto
President of EPSON EUROPE B.V.

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EPSON®

Film Scanner

FilmScan 200



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User's Guide

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Safety Instructions

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 scanner's openings. Do not insert objects into the openings, except as described in this manual.
- 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 use a damaged or frayed power cord.
- If you use an extension cord with the scanner, make sure the total ampere rating of all devices plugged into the extension cord does not exceed the cord's ampere rating. Also, make sure the total ampere rating of all devices plugged into the wall outlet does not exceed the wall outlet's ampere rating.
- Except as specifically explained in this user's guide, do not attempt to service the scanner yourself.

- ❑ Unplug the scanner and refer servicing to qualified service personnel under the following conditions:

If the power cord or plug is damaged; if liquid has entered the scanner; if the scanner has been dropped or the 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.

For United Kingdom Users

Use of options

Epson (UK) Limited shall not be liable against any damages or problems arising from the use of any options other than those designated as Original EPSON Products or EPSON Approved Products by Epson (UK) Limited.

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

If you have to fit a plug:

As the colours of the mains lead of this appliance may not match coloured markings used to identify the terminals in a plug, please 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 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.

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Features

The EPSON FilmScan 200 offers the following features:

- ❑ **Parallel model**-built-in bidirectional interface, compatible with Microsoft® Windows® 95 and 3.1x.

SCSI model-built-in SCSI interface, compatible with Microsoft Windows 95, 3.1x, NT® 3.5x/4.0, and Apple® Macintosh® systems.

- ❑ Full color or grayscale (varying shades of gray, from black to white) scanning. You can scan full color (16 million colors), 256 color, or grayscale images from 35 mm negatives and positives.
- ❑ You can scan 35 mm negatives and positives, as well as mounted 35 mm slides. In addition, you can scan Advanced Photo System™ images using the optional cartridge holder.
- ❑ Compact size. It has a smaller and narrower foot print than most scanners.
- ❑ EPSON TWAIN lets you take full advantage of your scanner's advanced features; you can change the captured color images for output device, modify visual effects (exposure, gamma, and sharpness setting), and control the captured image resolution from 50 to 4800 dpi.

For Windows-based systems

- ❑ IBM[®] compatible PC with a 486 or Pentium processor
- ❑ Microsoft Windows 95 or Windows 3.1x, for the parallel interface model

Microsoft Windows 95, Windows 3.1x, or NT 3.5x or later for the SCSI interface model

- ❑ To use the parallel interface model, a bidirectional parallel interface board must be installed in your computer. Because some interface boards may not be fully compatible with your EPSON FilmScan 200, the EPSON bidirectional parallel interface board packed with your scanner is recommended.

To use the SCSI interface model, a SCSI interface board must be installed in your computer.

- ❑ At least 16MB of RAM (32MB recommended)
- ❑ VGA, Super VGA, or better display adapter and color monitor 640 × 480 screen resolution (800 × 600 or higher recommended), and 256-color (65,000-color or higher recommended)

Note:

When scanning, the required amount of free hard disk space is twice the size of the image data file.

For Macintosh-based systems

- ❑ 68000 series or Power PC processor
- ❑ System 7.1 or later
- ❑ At least 16MB of RAM (32MB recommended)

At least 3MB of available memory for scanning 35 mm film, and 6MB of available memory for scanning the Advanced Photo System cartridge film.

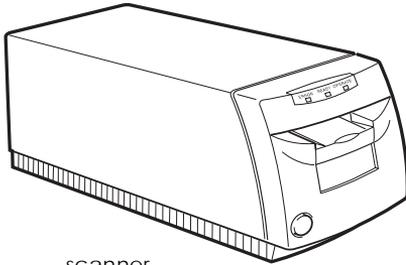
- ❑ Color monitor, 640 × 480 screen resolution (832 × 624 or higher recommended), and 256-color (32,000-color or higher recommended)

Note:

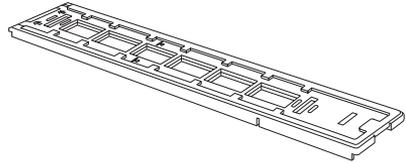
When scanning, the required amount of free hard disk space is twice the size of the image data file.

Unpacking the Scanner

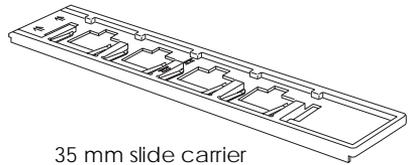
Make sure you have all the parts shown below.



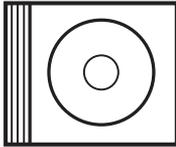
scanner



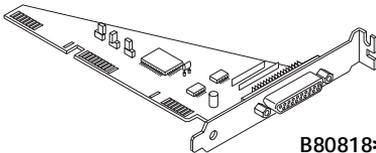
35 mm negative and positive carrier



35 mm slide carrier



CD-ROM and/or floppy disks (media type and quantity vary depending on where you purchase the scanner).



B80818*

Bidirectional parallel interface board (parallel interface model only).



power cord

Note:

- A SCSI interface board and/or SCSI cable may be included with the SCSI interface model depending on where you purchased the scanner.
- A parallel interface cable may be included with the parallel interface model depending on where you purchased the scanner.

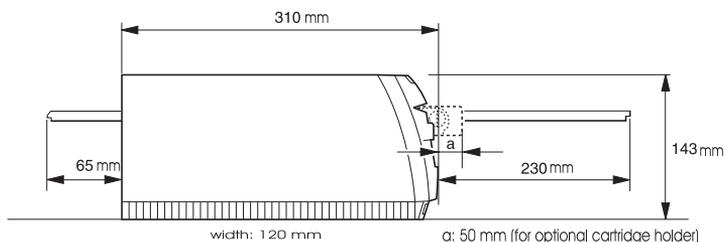
In some locations, the power cord comes attached to the scanner. The shape of the AC plug varies by country; be sure the plug included is the right shape for your location.

Remove all protective materials packed with your scanner before you set it up and turn on the power. Save all packaging and protective materials in case you need to transport the scanner later.

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 in front of and behind the scanner so that the film carrier can move fully forward and backward while scanning the images.



- 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.

Getting to Know the Scanner

After you unpack your scanner, take a few minutes to learn about its features, as shown below.

Front

READY light

On when the scanner is ready to scan. Flashes to indicate that an error has occurred. See "Error indicators" in Chapter 7 for more information.

OPERATE light

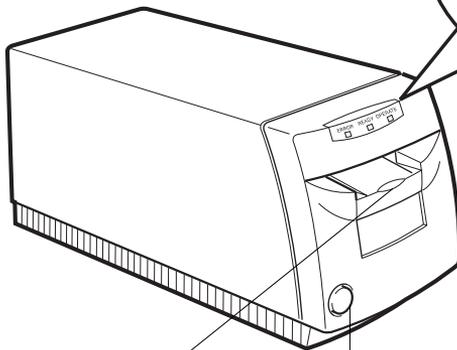
On when the scanner is turned on.

ERROR light

Flashing or on if an error occurs.

OPERATE button

Turns on or off the scanner.



Carrier slot and scanner door

Insert a 35 mm film carrier or the optional cartridge holder into this slot. Do not insert other objects.

RESET button

Restarts the scanner.

Button

Press this button and push down the scanner door before inserting the optional cartridge holder into the scanner. Be sure to push down the scanner door again to close the door.

Back

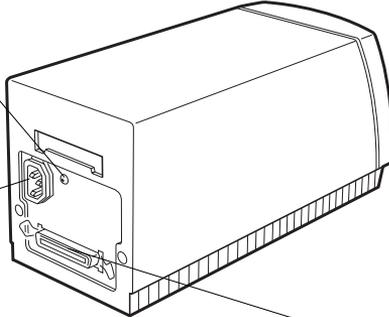
Parallel interface model

Ground connector

Connect the ground wire here if your interface cable has one.

AC inlet

Connect the power cord here.



Parallel interface connector

Connect the parallel interface cable here.

SCSI interface model

Terminator switch

Use this to turn the SCSI terminator on or off.

SCSI ID rotary dial

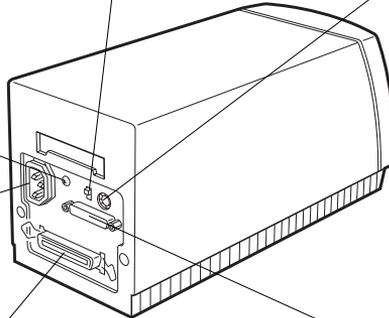
Set the SCSI ID here.

Ground connector

Connect the ground wire here if your interface cable has one.

AC inlet

Connect the power cord here.



50-pin SCSI connector

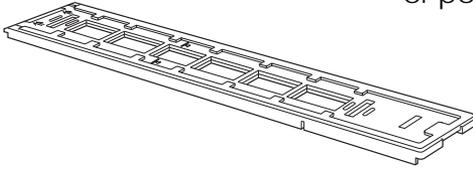
Connect the 50-pin end of a SCSI cable here.

25-pin SCSI connector

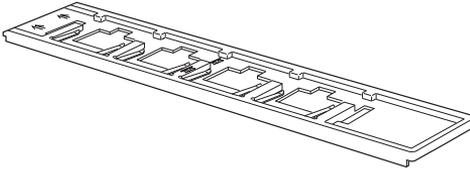
Connect the 25-pin end of a SCSI cable here.

Film carrier

For 35 mm negatives
or positives

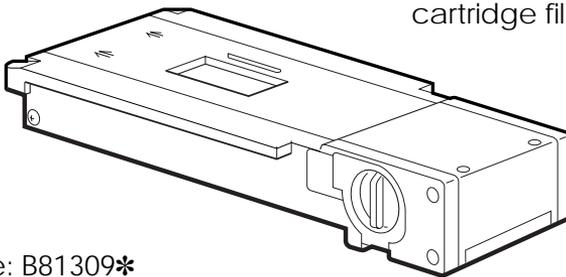


For 35 mm slides



Cartridge holder (option)

For Advanced Photo System
cartridge film



Code: B81309*

Chapter 2

Connecting EPSON FilmScan 200 to Your Computer

2

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Connecting the Parallel Interface Model

Compatible operating systems

You can connect the EPSON FilmScan 200 (parallel interface model) to a PC running the Windows 95 or 3.1 operating system.

Note:

EPSON FilmScan 200 (parallel interface model) is incompatible with Windows NT and Macintosh.

Installing the parallel interface board

EPSON FilmScan 200 (parallel interface model) requires a bidirectional interface in your computer and a standard shielded, twisted-pair parallel interface cable.

Check your computer's specifications to see if its built-in parallel interface is bidirectional or not. If it is not bidirectional or if your computer does not have an available bidirectional parallel interface, install the interface board packed with your scanner. You also may need to change jumper settings on the board so the settings do not conflict with your computer's built-in parallel interface. To install the bidirectional interface board, see the user's guide that came with the interface board.

Note:

- Use of the EPSON Bidirectional Parallel Interface Board (B80818*) packed with your scanner is recommended.*
- Remember the I/O address of the parallel interface board. You will need it when you install the scanner software later.*

Connecting the scanner to your PC

Follow the steps below to connect the EPSON FilmScan 200 (parallel interface model) to your PC.

Note:

Use a standard shielded, twisted-pair parallel interface cable.

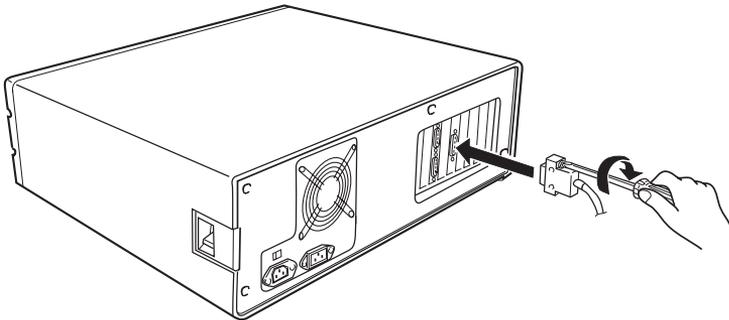
1. Make sure that both the scanner and computer are turned off and unplugged from any power source.



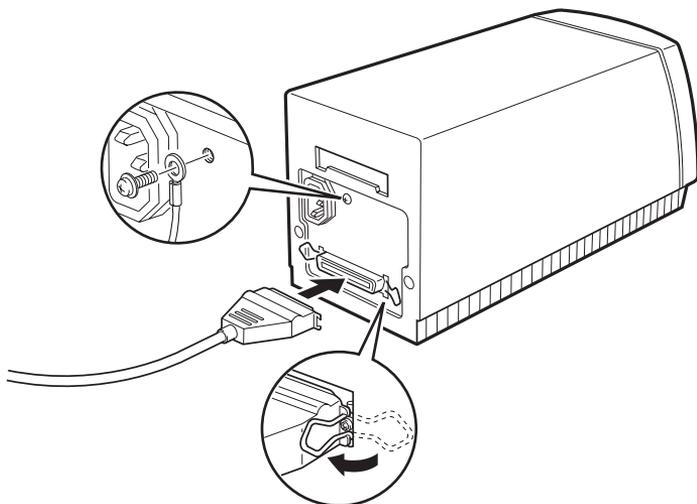
Caution:

Do not connect the scanner and computer while they are turned on; otherwise damage may occur.

2. Connect the 25-pin end of the cable to the computer. Then tighten the screws on the sides of the connector. Connect the ground wire if your interface cable has one.



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



See Chapter 3 for instructions on installing the scanner software. You must install the scanner software before using your scanner.

Connecting the SCSI Interface Model

Compatible operating systems

You can connect the EPSON FilmScan 200 (SCSI interface model) to a Macintosh or a PC running Windows 95, 3.1, or NT.

If your PC does not have a SCSI board installed, you need to install one according to the directions that come with the SCSI board. If your PC already has a SCSI board, connect the scanner as described in the next section.

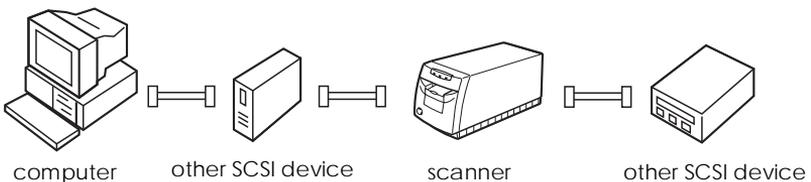
Note:

If you use Windows 95 or NT, use the SCSI driver included in Windows 95 or NT (see your system documentation for instructions) or the driver described in the SCSI board installation documentation. If you use Windows 3.1, use the driver packed with the SCSI board as described in the SCSI board installation documentation.

All Macintosh computers have SCSI ports; you do not need to install a SCSI board in a Macintosh. Follow the directions below to set up and connect your scanner and computer.

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.

**Note:**

Before purchasing a SCSI cable or setting up your SCSI daisy chain, be sure your SCSI cable(s) has the right combination of 50-pin and 25-pin connectors. The combination you need may vary depending on the maker of your SCSI device and SCSI interface board.

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 a 25-pin and a 50-pin SCSI connector and a built-in terminator that can be turned on or off.

Setting the SCSI ID number

The scanner's default SCSI ID number 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 using the table below as a guide.

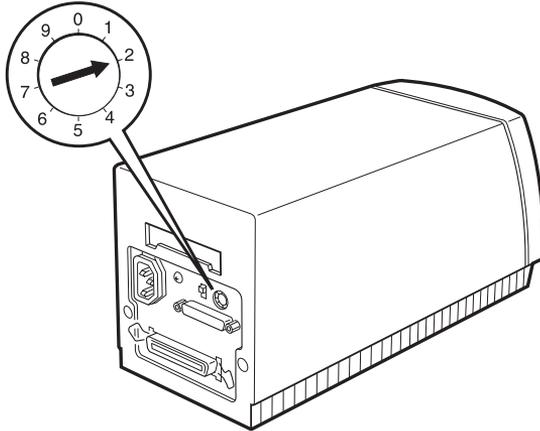
ID	Availability	Description
0	Not recommended	Usually used for hard disk
1	Not recommended	Usually used for hard disk
2		Factory setting of the scanner
3		Not available if your Macintosh has a built-in CD-ROM
4		
5		
6		
7	Not available for Macintosh	Always used for the Macintosh itself
	May not be available for Windows	Usually used for a PC's host adapter
8	Not available	Never selected*
9	Not available	Never selected*

*Otherwise the scanner does not work properly.

If you need to change the SCSI ID, locate the SCSI ID rotary dial on the rear of the scanner. Then turn the dial number to the desired number.

**Caution:**

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



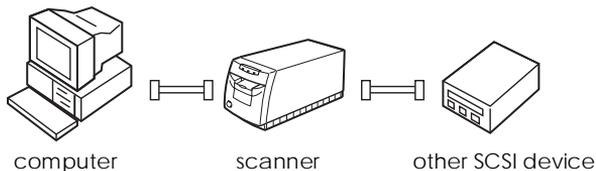
Setting the terminator switch

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

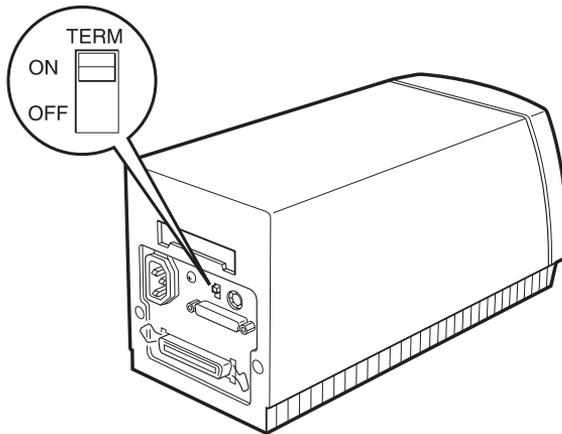
Note:

Do not use an external terminator.

The factory setting of the terminator switch is on. If the scanner is in the middle of a daisy chain as shown below, turn the terminator switch off.

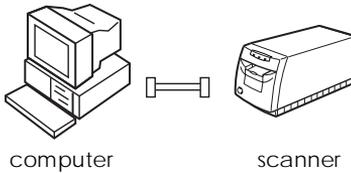


The terminator switch is located at the rear of the scanner.

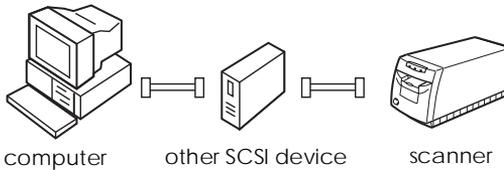


If the scanner is the only SCSI device you connect to your computer or if it is the last device in the daisy chain, leave the internal SCSI terminator turned on.

only the scanner is connected = terminator on



the scanner is the last device in the daisy chain = terminator on



Connecting the scanner to your computer or to another SCSI device

Follow the steps below to connect the EPSON FilmScan 200 (SCSI interface model) to your computer or another device.

Note:

The combination of 50-pin and 25-pin connectors you need may vary depending on the maker of your SCSI device and SCSI interface board.

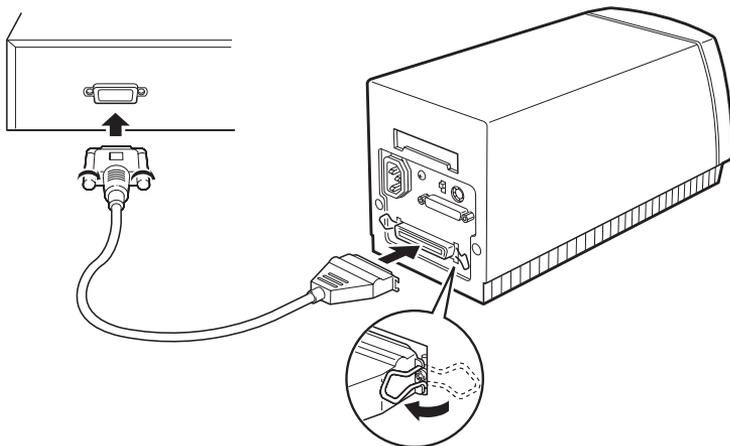
1. Make sure that the scanner, the computer, and all other SCSI devices are turned off and unplugged from any power source.



Caution:

Do not connect the scanner to the computer or other devices while they are turned on; otherwise damage may occur.

2. Connect one end of the SCSI cable to the scanner's SCSI connector; then squeeze the wire clips together until they lock in place, or tighten the screws on the sides of the connector.



An example using the scanner's 50-pin interface.

Note:

- ❑ *To connect the scanner to a SCSI device other than the computer, the length of cable in the daisy chain must be 6 meters or less; otherwise the system may not work properly.*
 - ❑ *To connect the scanner to a PC using SCSI-2, the length of the cable must be 3 meters or less.*
3. Connect the other end of the cable to the SCSI port of your computer or another SCSI device.
 4. Connect the power cables of your computer, scanner, and other external SCSI devices to a power supply.

Note:

Before turning on your system, be sure to read “Power-on sequence” below.

Power-on sequence

Keep the following in mind every 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 about 30 seconds; then turn on your computer. Otherwise the computer may not work properly.
- ❑ 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 around 30 seconds; then turn on the computer.
- ❑ You do not have to turn on unused SCSI devices even if they are in the middle of the daisy chain.

- ❑ If you use Windows 95, after you turn on the scanner and then turn on the computer, the following dialog box may appear. Simply select Do not install a driver (Windows will not prompt you again), then click OK.



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

- ❑ When you are finished using your system, turn off your computer first, then the scanner and other SCSI devices.
- ❑ While using your computer, do not turn off the SCSI device that is acting as the terminator; the terminator switch must be on.
- ❑ If you turn the scanner off and back on while using your computer, the scanner may not scan properly.

Chapter 3

Setting Up the Scanner Software

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Installing the Scanner Software in Your PC

After connecting the scanner to your computer, install the Windows-based scanner software. It is included on the scanner software CD-ROM shipped with your scanner. Your CD includes EPSON TWAIN and TWAIN-compliant scanning software. To install EPSON TWAIN in Windows 95, see the next page. To install EPSON TWAIN in Windows 3.1x or NT 3.5x, see page 3-8. To install EPSON TWAIN in Windows NT 4.0, see page 3-9. To install the software in your Macintosh, see page 3-10.

Note:

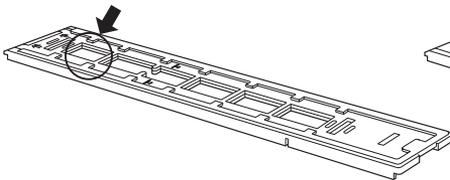
To install the application included on your CD, see the application user's guide.

Preparing the scanner before installing EPSON TWAIN

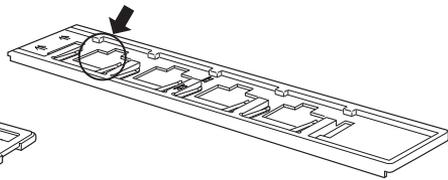
Turn on the scanner and load the film carrier containing the 35 mm strip film or 35 mm slides. Make sure that the READY light is on. You can test the connection after installing the EPSON TWAIN. You can use the film carrier for 35 mm strip film or slides. To load the film carrier, see "Loading 35 mm Negatives and Positives" or "Loading 35 mm Slides" in Chapter 4.

Note:

Set the 35 mm strip film or slides in the carrier so that at least the carrier's first frame is occupied, as shown below.



For 35 mm strip film



For 35 mm slides

Installing the software in Windows 95

Make sure that the film carrier contains film as described in the previous section and is loaded in the scanner; then follow the steps below to install the scanner software for Windows 95.

1. Turn on the computer. Start Windows 95.

If you use the EPSON FilmScan 200 (parallel interface model), proceed to step 2.

If you use the EPSON FilmScan 200 (SCSI interface model), either of the following dialog boxes may appear.

- If the following dialog box appears, select Do not install a driver (Windows will not prompt you again), then click OK. Proceed to step 2.



- ❑ If the following dialog box appears, click Next.



Then click Finish when the following dialog box appears.



2. Insert the scanner software CD shipped with your scanner in the CD-ROM drive.
3. Double-click the My Computer icon.
4. Double-click the CD-ROM drive icon. You see the EPSON folder.

5. Double-click the EPSON folder and double-click Disk 1. Then double-click the SETUP.EXE icon. The following dialog box appears.

Note:

If the folder contains a README file, double-click it and read it. This file contains the latest important information and any updates regarding the application.



6. Click OK. In the next dialog box, make sure that the correct directory name for your Windows system appears in the Path box.



- Click **OK**, and the EPSON TWAIN installation starts. Follow the on-screen instructions and when installation is completed, the EPSON Scanner Setup dialog box appears.



- Make sure that **BiD Parallel** is selected for the parallel model scanner, or **SCSI** is selected for the SCSI model scanner in the **Interface** pop-up list.
- For the parallel interface model**
Make sure that the port address setting matches the port address of the interface board as shown below. (Use the port address you wrote down when you installed the parallel interface board.)

Interface board	Port Id setting in the EPSON Scanner Setup dialog box
LPT1	Port 378
LPT2	Port 278

Note:

- You do not need to change the port address setting if you install the parallel interface board packed with your scanner without changing jumper settings.*
- For information on I/O port addresses, see the user's guide that came with the parallel interface board.*

For the SCSI interface model

If you connect the SCSI interface model, EPSON FilmScan 200 appears automatically. If it does not appear, see Chapter 7, “Troubleshooting.”

10. Make sure that the film carrier containing the 35 mm film is loaded in the scanner, and that there are no obstructions placed in the way of the slide path.
11. Click Test to check the connection. The scanner will slide the film carrier forward and back, and then an image from the film in the carrier appears if the connection is correct.

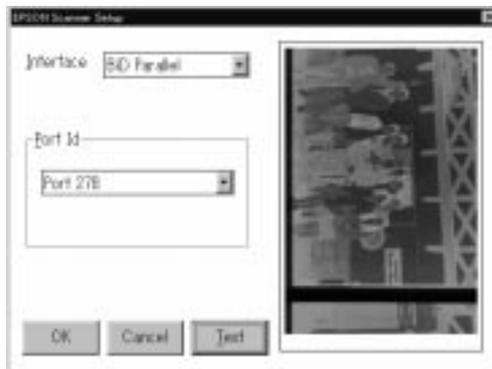
If no image appears, see Chapter 7, “Troubleshooting.”

Note:

The test image may be dark when using negative film; this is normal.

**Caution:**

Do not touch the carrier while testing is in progress; otherwise damage may occur.



12. Click OK to close the EPSON Scanner Setup dialog box. The program creates an EPSON Scanner Settings icon in the Control Panel, creates an EPSON Scanner group, and places the EPSON Screen Calibration icon in the EPSON Scanner group.

When you have finished the entire installation, perform the EPSON Screen Calibration as described on page 3-12.

Installing the software in Windows 3.1x or NT 3.5x

Make sure that the film carrier contains film as described on page 3-2 and is loaded in the scanner; then follow the steps below to install the software in Windows 3.1x or NT 3.5x:

1. Turn on the computer. Start Windows 3.1 or NT 3.5x.
2. Insert the scanner software CD shipped with your scanner in the CD-ROM drive.
3. Open File Manager, then click the CD-ROM drive.
4. Open the EPSON directory and the Disk 1 subdirectory; then double-click SETUP.EXE. Follow the instructions on the screen.

When you see the following EPSON TWAIN Setup dialog box, follow the steps on page 3-5 from step 6.



Installing the software in Windows NT 4.0

Make sure that the film carrier contains film as described on page 3-2 and is loaded in the scanner; then follow the steps below to install the scanner software for Windows NT 4.0.

1. Turn on the computer. Start Windows NT 4.0.
2. Insert the scanner software CD shipped with your scanner in the CD-ROM drive.
3. Double-click the My Computer icon.
4. Double-click the CD-ROM drive icon. You see the EPSON folder.
5. Double-click the EPSON folder and double-click Disk 1. Then double-click the SETUP.EXE icon. Follow the instructions on the screen.

Note:

If the folder contains a README file, double-click it and read it. This file contains the latest important information and any updates regarding the application.

When you see the following EPSON TWAIN Setup dialog box. Follow the steps on page 3-5 from step 6.



Installing the Scanner Software in Your Macintosh

After connecting the scanner to your Macintosh, install the Macintosh-based scanner software as described below. It is included on the scanner software CD-ROM shipped with your scanner. Your scanner software includes EPSON TWAIN and TWAIN-compliant scanning software. To install EPSON TWAIN in your PC, see page 3-2.

Note:

To install the application included on your CD, see the application user's guide.



Caution:

Turn off all virus protection programs before you install your scanner software.

Follow the steps below to install the scanner software.

1. Turn on the scanner; then turn on the computer.
2. Insert the EPSON scanner software CD shipped with your scanner in the CD-ROM drive.
3. Double-click the CD-ROM icon. You see the file folders that are contained on the CD.
4. Double-click the EPSON FS TWAIN Disk 1 folder.

5. Double-click the Install EPSON TWAIN icon to start the installation program.

Note:

Be sure to read the EPSON TWAIN README file, especially if you are also using an EPSON GT series scanner.



6. Click OK. The following dialog box appears:



7. Click Install. When installation finishes, the following dialog box appears:



8. Click Quit to complete the installation. When a dialog box prompts you to restart the computer, click Restart to restart your computer and to activate the new software.

When you have finished the entire installation, perform the EPSON Screen Calibration as described below.

Calibrating Your Screen

After you complete the software installation, use the EPSON Screen Calibration utility to optimize the image output for your screen.

Calibration is required because brightness levels, contrast, and other characteristics are somewhat different for each type of monitor. By calibrating your screen, you allow your software to generate images that precisely match your screen's characteristics.

1. Start up the calibration program.

If you use Windows 95/NT 4.0:

Double-click the EPSON Screen Calibration icon if the EPSON Scanner folder is open, or click Start, point to Programs and EPSON Scanner, and then click EPSON Screen Calibration.

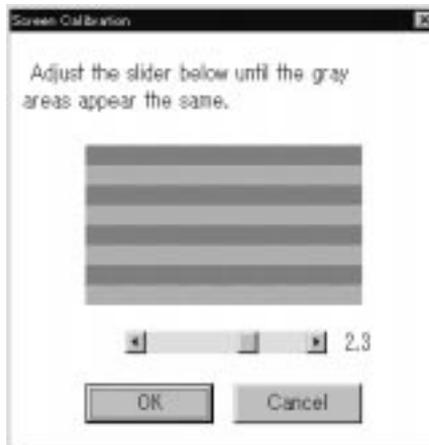
If you use Windows 3.1/NT 3.5x:

Double-click the EPSON Screen Calibration icon in the EPSON Scanner program group.

If you use Macintosh:

Double-click the EPSON Screen Calibration icon in the EPSON Calibration folder.

2. In the following window, move the slider to the right or left until the shades of gray of the two sets of horizontal stripes match.

**Note:**

View the screen from a slight distance. The gray stripes will not perfectly blend together; the object is to make the different tones match as much as possible.

3. Click OK to register the calibration setting.

The new settings are saved. You will not need to change the screen calibration again so long as you continue to use the same display.

Chapter 4

Scanning 35 mm Film Images

Understanding 35 mm Film	4-2
Supported film types	4-2
Base and emulsion sides	4-3
Loading 35 mm Negatives and Positives	4-3
Loading 35 mm Slides	4-7
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Removing 35 mm Film From the Carrier	4-20
Removing 35 mm strip film from the carrier	4-20
Removing 35 mm slides from the carrier	4-21



Understanding 35 mm Film

The scanner accepts over-the-counter 35 mm strip film (negative and positive) and 35 mm color slides as well as Advanced Photo System film. See Chapter 5 for information on Advanced Photo System film.

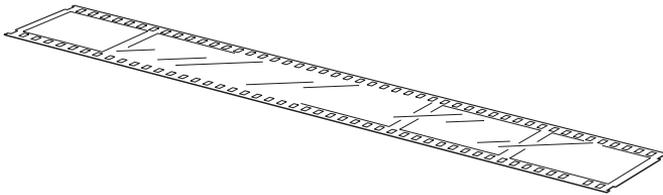
Supported film types

35 mm strip film (negative or positive)

The scanner accepts up to a 6-image length of standard 35 mm film. You can use either negative or positive film.

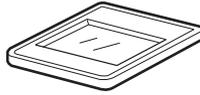
Negative film	Color tones are opposite of what they were in the original scene. Also, the frame border is brown. This is the standard film for generating prints.
---------------	---

Positive film	Includes color slide film. Color tones are the same as what they were in the original scene. The frame border is black.
---------------	---



35 mm slides

Each slide consists of a single image cut from a positive film strip and mounted in a plastic casing or other slide frame. Maximum allowable slide thickness is 2 mm.



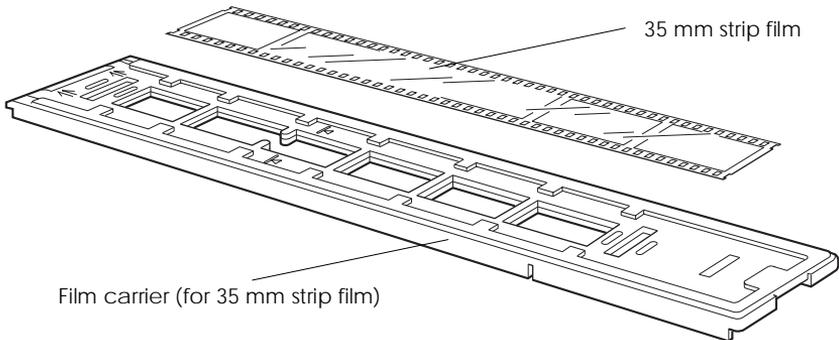
Base and emulsion sides

When loading film into the carrier, always load it so that the glossy, base side is facing up (the emulsion side should face down). The film manufacturer's name and film ID numbers are readable on the base side. Or when you look at the base side, the picture should appear in its correct orientation.

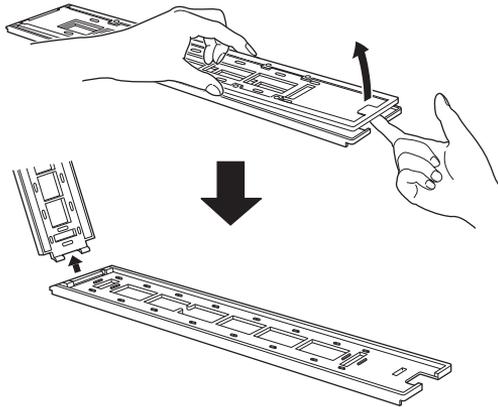
4

Loading 35 mm Negatives and Positives

To prepare 35 mm negative or positive strip film (strips of up to 6 images) for scanning, read this section.



1. Place the film carrier on a table or other stable surface, and take off the upper half. Hold the sides with one hand, and use the other hand to completely remove the upper half, as shown below.

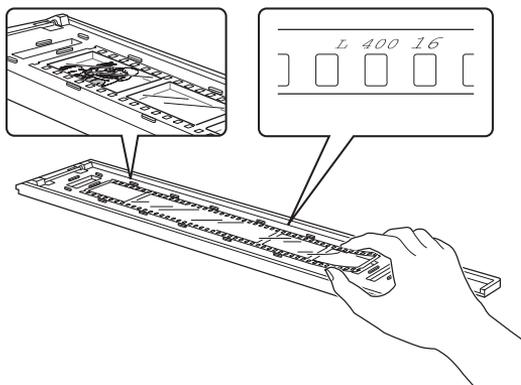


2. Load the film into the carrier between the small tabs, with the film's base side facing up. The film maker's name and film ID numbers are shown on the base side.



Caution:

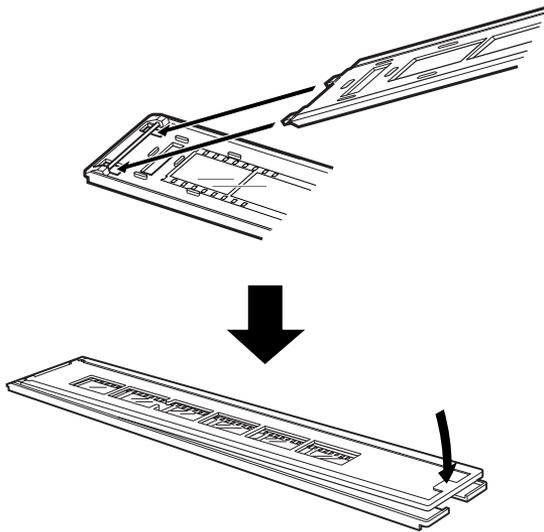
Hold the film at the edges, or else use gloves. Touching the film surface with bare hands can leave fingerprints or other traces on the film.



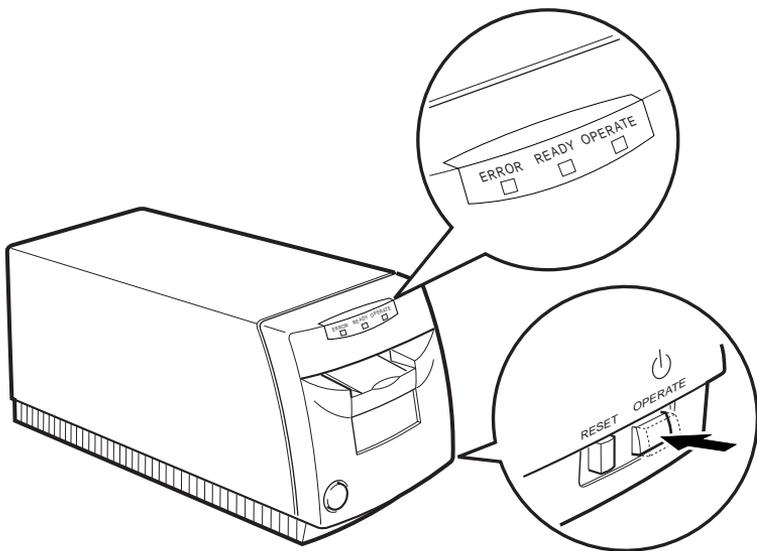
Note:

If you use a short film strip (less than 6 frames), load the strip so that it touches one end of the carrier or the other. Remember which end the film touches, so that you can easily select the correct frame to acquire from the scanner.

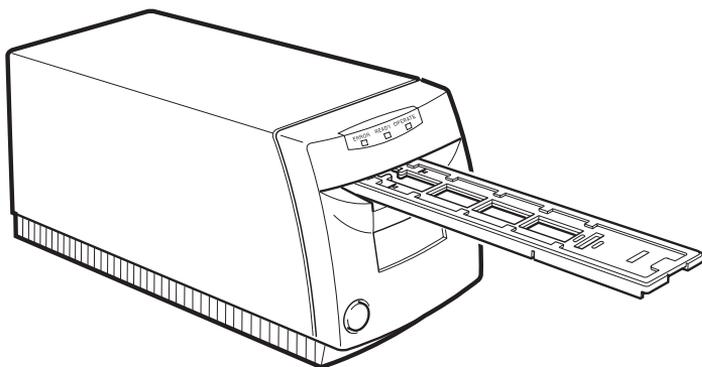
3. Make sure that film is loaded correctly, and then replace the top half of the carrier. Make sure it locks in place.



4. Turn on the scanner, if you haven't already, by pressing the OPERATE button. The READY light comes on after a few moments.

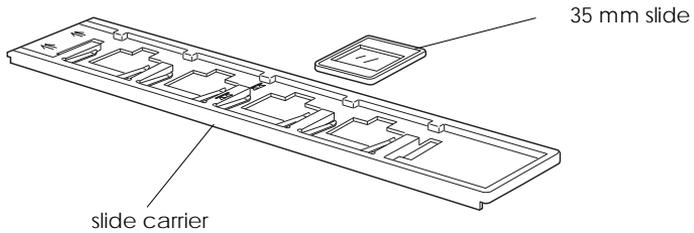


5. Make sure the READY light is on, then push the film carrier about half-way into the scanner as shown below. The scanner slides the carrier backward and forward, and when the READY light comes on again, the film is in the correct position.



Loading 35 mm Slides

To prepare 35 mm slides for scanning, read the following. The carrier can hold up to four slides.

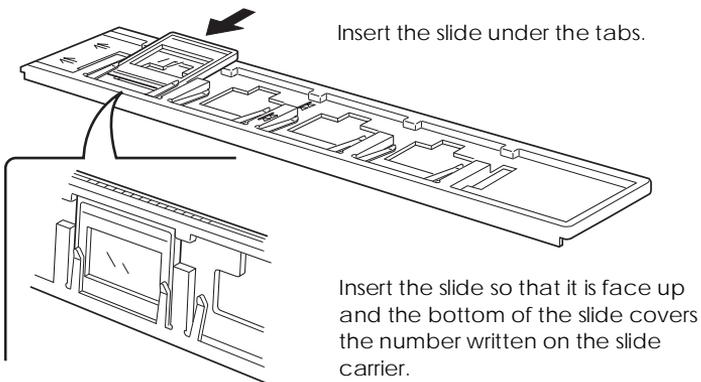


1. Hold the slide carrier so that the arrows face up, then insert your slide, face up, under one of the sets of tabs as shown below. When you look at the slide from this side of the carrier, the image in the slide should appear in its correct orientation.



Caution:

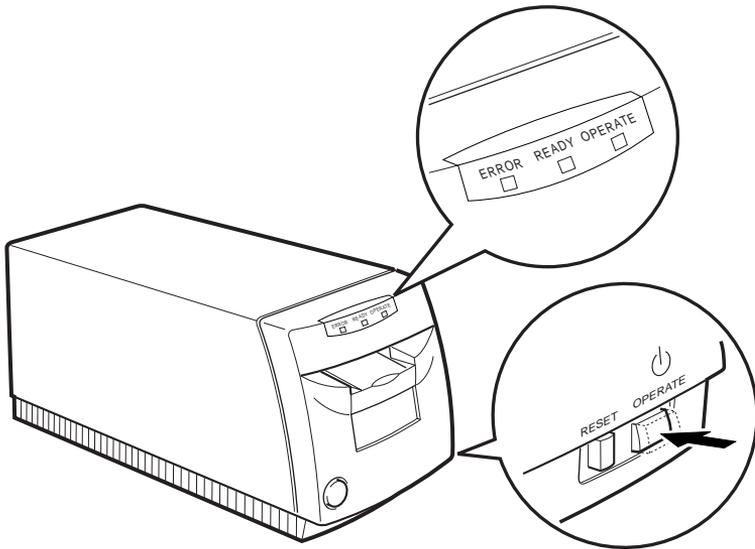
Hold a slide by its edges. Touching the film surface can leave fingerprints or other traces on the film.



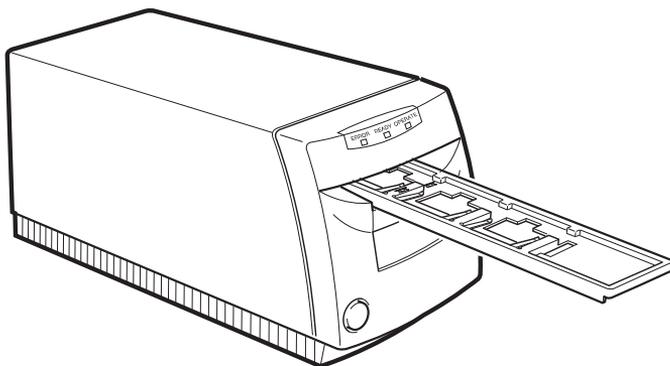
Note:

You can load slides into any or all of the slots. If you load less than four slides, remember which slots are filled, so that you can easily select the correct frame to acquire from the scanner.

2. Turn on the scanner, if you haven't already, by pressing the OPERATE button. The READY light comes on after a few moments.



3. Make sure the READY light is on, then load the film carrier about half-way into the scanner with the arrow marks first as shown below. The scanner slides the carrier backward and forward, and the film carrier is in the correct position when the READY light comes on again.



Capturing Images Using EPSON TWAIN

This section explains how to scan images from 35 mm strip film or slides. For instructions on scanning Advanced Photo System film, see Chapter 5.

Starting EPSON TWAIN

Your scanner uses EPSON TWAIN to scan images. You can scan images directly from the scanning software that comes with your scanner or from an application program that supports the TWAIN standard. This section describes how to access EPSON TWAIN from the PhotoEnhancer Special Fun Edition and Adobe® Photoshop®. To access it from another application, see the documentation that came with that application.

Note:

The EPSON TWAIN operating procedure is the same on both Windows and Macintosh platforms. Screen illustrations below are from Windows 95.

1. Load the film carrier containing the 35 mm film into the scanner as described earlier in this chapter. Make sure that the scanner's READY light is on.

Note:

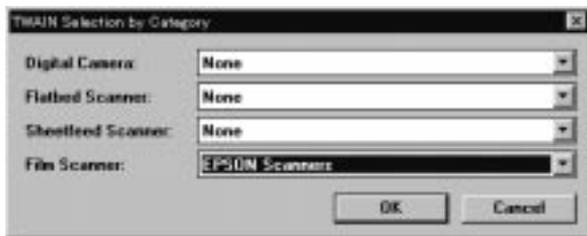
Before acquiring images from the 35 mm film strip, be sure that the scanner door is up. The scanner will not operate while the door is down. If the scanner door is down, press down and release it to close completely.

2. Make sure that your TWAIN-compliant application software is open. If you have other TWAIN drivers installed in your system, follow the steps below. If not, go directly to step 4.

Note:

For details on starting your application, see your application user's guide.

3. Select your EPSON film scanner as the TWAIN source before starting EPSON TWAIN. The methods shown below are for PhotoEnhancer Special Fun Edition and Photoshop. See your application user's guide for instructions on selecting the TWAIN source if necessary.
 - ❑ To use the PhotoEnhancer Special Fun Edition as your scanning application, click the Setup icon on the Photo Center menu in the PhotoEnhancer Express window. The following dialog box appears.



Select EPSON Scanners for Windows 3.1x-based applications or EPSON Scanners (32-bit) for Windows 95/NT-based applications as the Film Scanner setting. Select EPSON FilmScan 200 as the Film Scanner setting for Macintosh-based applications.

- ❑ To use Adobe Photoshop, click Acquire on the File menu. Then click Select TWAIN Source for Windows 3.1x or Macintosh-based applications, or click Select TWAIN Source_32 for Windows 95/NT-based applications. The following dialog box appears.



Select EPSON Scanners for Windows 3.1x, or select EPSON Scanners (32-bit) for Windows 95/NT. Select EPSON FilmScan 200 for Macintosh.

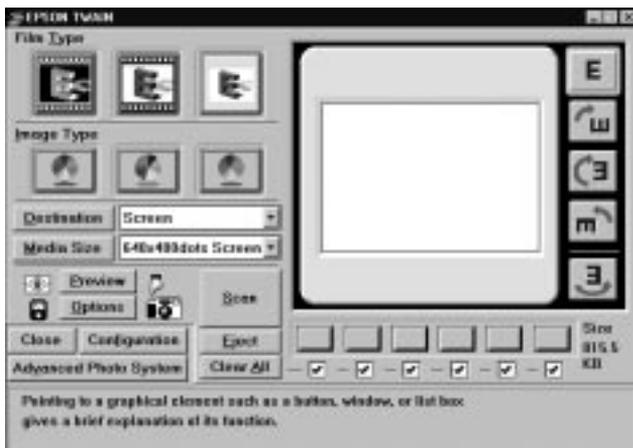
4. Start EPSON TWAIN as described below.

Note:

For details on opening EPSON TWAIN through your application, see your application user's guide.

- ❑ If you use the PhotoEnhancer Special Fun Edition, click the Film Scanner icon on the Photo Center menu in the PhotoEnhancer Express window.
- ❑ If you use Adobe Photoshop, click Acquire on the File menu; then choose TWAIN or TWAIN_32 depending on the setting you chose in step 3.

EPSON TWAIN window appears as shown below.

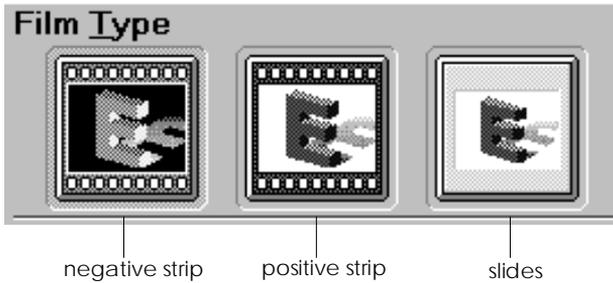


Scanning images

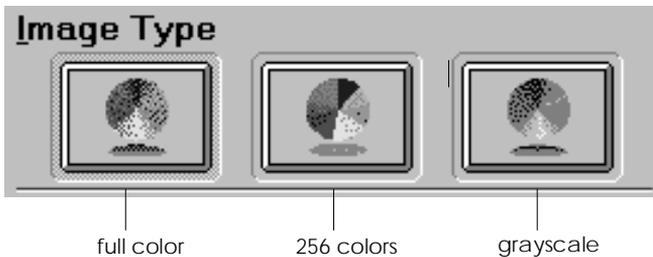
You are now ready to preview and scan your film images. Keep in mind that the lower part of the EPSON TWAIN window displays relevant help information that you can refer to for additional guidance.

1. Make sure that the film carrier containing film is loaded correctly in the scanner. Also, make sure the scanner is on and open EPSON TWAIN described in the previous section.

- Click the button corresponding to the type of film loaded in the scanner: negative strip film, positive strip film, or slides.



- Select the color scheme you want to use to acquire the image. You have three choices: full color (16 million colors), 256 colors, or grayscale (varying shades of gray, from black to white).



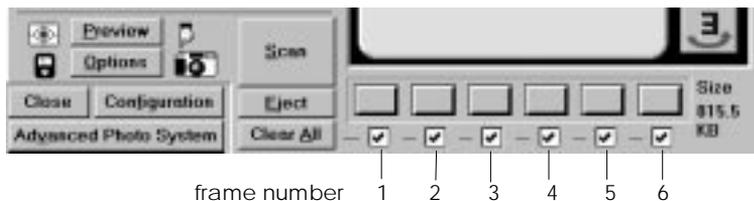
Note:

To use the full color option, you may need a video card, video driver, and display that support at least the following number of colors. Some application software can produce pseudo "full color" even if your display can only generate 256 colors. See your application user's guide for more details if necessary.

Windows: 65,000 colors (16-bit color)

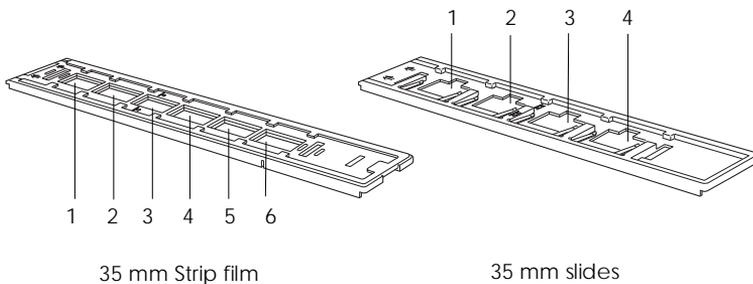
Macintosh: 32,000 colors

4. Select the frame (or frames) that you want to preview by clicking in the appropriate check box. A frame is selected if a check appears in the check box.



Note:

The numbers shown above directly relate to the numbered frames in the film carriers. To save time, keep this in mind when loading film in the carrier and when selecting frames in the software.



Note:

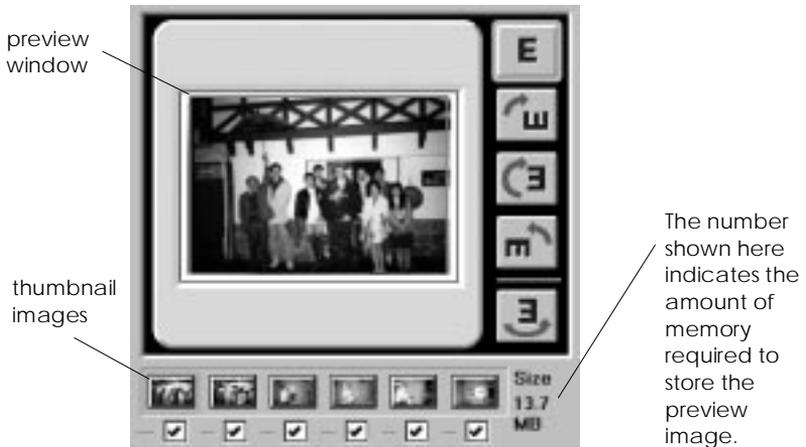
You can use the Clear All/Select All button to deselect or select all frames at once. The button name automatically switches each time you click it.

5. Make sure that there are no objects directly behind or in front of the scanner, and click Preview. The scanner acquires the images you selected. A preview image appears in the preview window and thumbnail images for all selected frames appear on the corresponding buttons, as shown below.



Caution:

Do not touch the carrier or move the scanner while it is operating; otherwise it may be damaged.



Note:

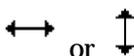
Be sure to preview before scanning; otherwise your scanned image may come out marred or distorted.

6. To view a different preview image, click the corresponding thumbnail image. The thumbnail image appears as a full preview in the preview window.

7. If necessary, crop or move the scan area of the preview image with the pointer, which turns into the following drawing symbols depending on where you point.



Appears in the center of the image. You can move the scan area by dragging (click and hold while moving the mouse) the hand over the preview image.



Appears at the edge of the image. You can move one edge at a time by dragging the double arrow.



Appears near the edge of the image. You can remake the scan area by dragging the cross-hairs. Then use the other drawing symbols to make small adjustments to the scan area if required.

Note:

- The scan area you set only effects the image shown in the preview window.*
 - Previews will generally include a portion of the film carrier itself, resulting in a white border (scan of the strip film carrier) or black border (scan of the slide carrier) around the film image. You may need to crop the scan area to remove this border.*
8. Adjust image quality, image rotation, and other image options as necessary. To make these settings, click Options, Configuration, or one of the image rotation buttons. For details on these settings, see Chapter 6, "Getting to Know More About EPSON TWAIN."

Note:

The settings you make only effect the image shown in the preview window.

- Select the destination device from the Destination pop-up list shown below. The software automatically adjusts the color correction and resolution settings to match the selected device.

Note:

Usually you do not have to change the resolution setting. If you want to change the resolution, see “Selecting a Destination Device and Media Size” in Chapter 6.



- Select the output size for the scanned image from the Media Size pop-up list. See page 6-6 for details.



Note:

If you choose Actual Size from the Media Size pop-up list, the scanner determines the size of the scanned image according to the actual film size.

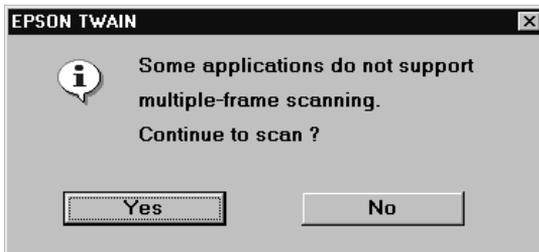
11. Select the image(s) you want to scan by clicking the appropriate check box(es). An image is selected if a check appears in the check box.
12. Make sure that there are no objects directly behind or in front of the scanner, and click the Scan button to acquire the selected image(s).



Caution:

Do not touch the carrier or move the scanner while it is operating; otherwise it may be damaged.

If you have selected more than one image for scanning, the following dialog box appears. If your application software does not support simultaneous scanning of multiple images, click No, and scan one image at a time. If your application supports multiple-image scanning, click Yes.



The scanned image(s) is displayed as a new file behind the EPSON TWAIN window. (You may need to move the TWAIN window to view the scanned image.)

13. Click Eject to eject the film carrier; the scanner pushes the carrier out. When the carrier stops moving, pull it the rest of the way out by hand.

If you want to begin scanning cartridge film after scanning 35 mm film, simply insert the film cartridge holder containing the cartridge film, then click the Advanced Photo System button. The EPSON TWAIN window for scanning cartridge film appears. For more information, see Chapter 5, “Scanning Images From Your Film Cartridge.”

Note:

EPSON TWAIN may automatically close when scanning is finished. If this happens, start EPSON TWAIN again.



Caution:

When you have finished scanning, be sure to take the film out and store it in an appropriate film storage bag. Do not leave film in the scanner, as internal scanner temperatures may eventually cause the film to degrade.

14. Click Close to exit EPSON TWAIN.

Saving the captured image file

Save your captured image file in your TWAIN-compliant software. A typical save procedure is described below. For detailed information, see your application user's guide.

1. Select Save or Save As on the File menu in your application.
2. Select the file format.

3. Enter a filename; then select the destination drive and directory.
4. Click OK or Save to save the image file.

Removing 35 mm Film From the Carrier

To remove the 35 mm film carrier from the scanner, click Eject; the scanner pushes the carrier out. When the carrier stops moving, pull it the rest of the way out by hand.

Removing 35 mm strip film from the carrier

1. Place the film carrier on a table or other stable surface and, using one hand to hold the carrier, remove the upper half.
2. Take the film out of the carrier.



Caution:

Hold the film at the edges, or else use gloves. Touching the film surface with bare hands can leave fingerprints or other traces on the film.

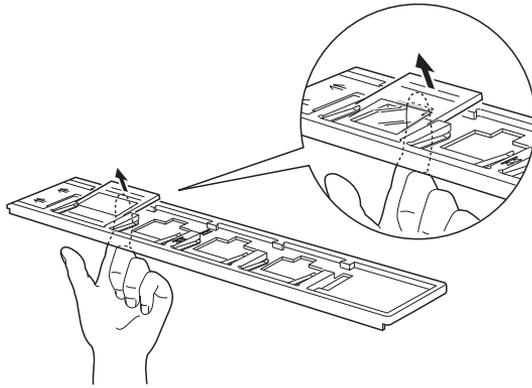
Removing 35 mm slides from the carrier

1. Push your finger through the bottom of the carrier and push the frame up.

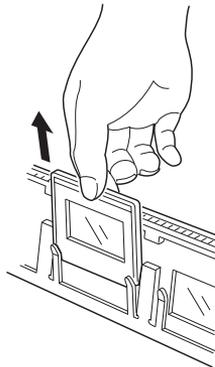


Caution:

Only touch the slide's frame area. Do not touch the film itself. Touching the film surface can leave fingerprints or other traces on the film.



2. Grasp the edge of the slide and pull it out gently in the direction shown below.



Chapter 5

Scanning Images From Your Film Cartridge

About the Advanced Photo System™	5-2
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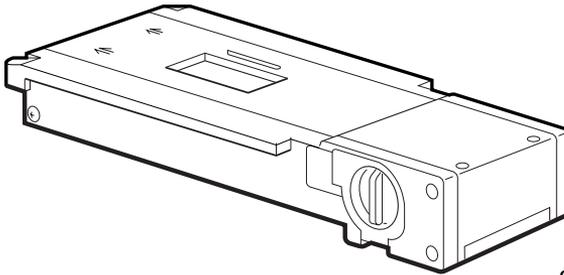


About the Advanced Photo System TM

Cameras and film that carry the mark shown below are compatible with the Advanced Photo System. Check for this mark when purchasing your equipment.



In order to load an Advanced Photo System film cartridge into the scanner, you will need the optional film cartridge holder shown below. It can be purchased from your dealer.

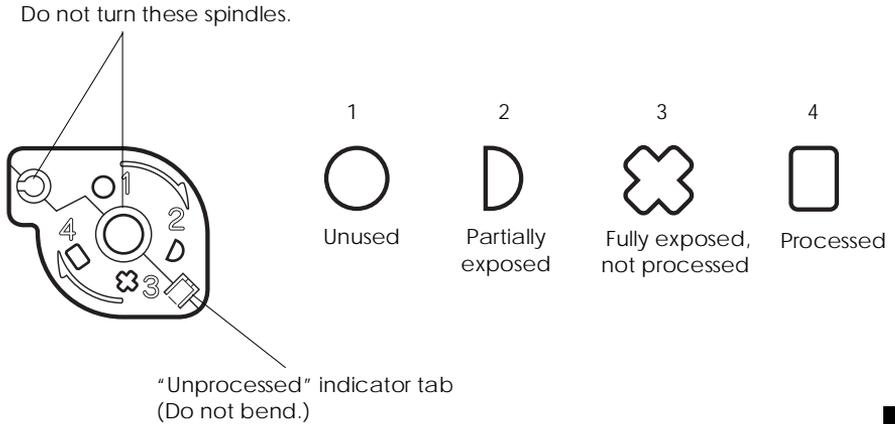


code:B81309*

Understanding film cartridges

- Do not load an unprocessed film cartridge into the scanner. Use fully processed cartridges only. Do not use force to load the cartridge, as this may cause damage to the film, the cartridge, or the holder.

- The side of the cartridge carries four symbols that indicate the film's status. The square symbol (symbol 4 below) indicates that the film has been processed. Do not load a cartridge into the scanner unless its square symbol is marked.



- ❑ The processing lab returns the processed film in its cartridge, together with an index sheet showing all of the images on the film. Store the index sheet in a safe place, as it will help you identify the images that you want to scan.
- ❑ Each cartridge has its own unique ID number. This same number also appears on the corresponding index sheet, so that there is no danger of mismatching your cartridges and index sheets.

Cartridge handling precautions

Executing a large number of scans on the same cartridge may cause wear on the cartridge, resulting in film damage or inability to unwind or rewind the film. Try to complete your scanning work with a minimum number of repetitions.

If it becomes impossible to unwind the film, the cartridge mechanism may be bad. You may need to replace the cartridge. Contact a photo development shop or processing lab. If you have loaded the cartridge into the scanner as described on page 7-20, but cannot rewind it, the cartridge holder may be defective. Contact your dealer.



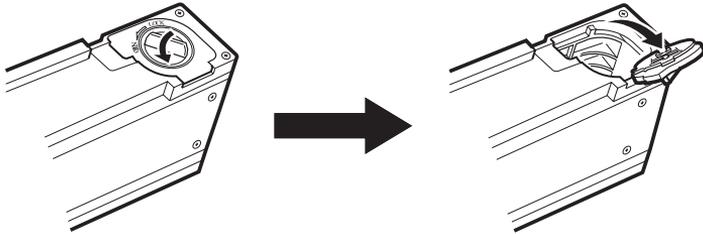
Caution:

- Never forcibly pull film out of the cartridge.*
- Never open the cartridge's light-blocking door (the cover over the film outlet).*
- Do not bend the "unprocessed" tab if the cartridge has not yet been processed. (A bent tab indicates that the film is processed.)*
- Never leave the cartridge in the scanner after you have finished scanning. Leaving the cartridge in the scanner may result in cartridge damage or film degradation.*
- Be sure to use the correct procedure when loading the cartridge into or taking it out of the cartridge holder. Never load an unprocessed cartridge into the holder.*
- Do not turn the spindles on the cartridge holder.*
- Do not allow water, sand, or other contaminants to enter the cartridge.*
- Handle the cartridge gently; it should not be dropped, shaken, or subjected to other strong impacts. Be careful to avoid excessive bending of the film.*

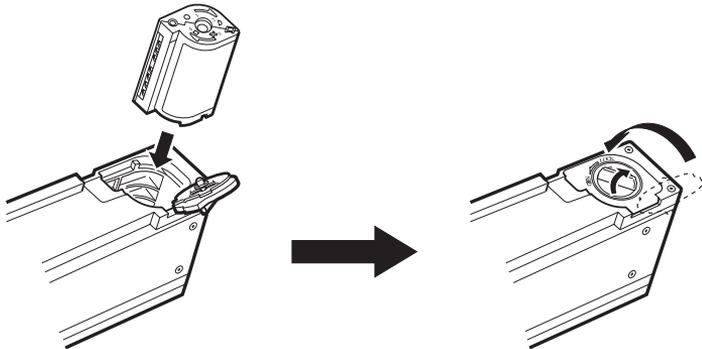
Loading Cartridge Film

To prepare Advanced Photo System film for scanning, read this section.

1. Turn the cartridge holder's knob to the OPEN position and open the cover.



2. Insert the film cartridge into the holder in the manner shown below. Then close the cover and turn the knob to the LOCK position.

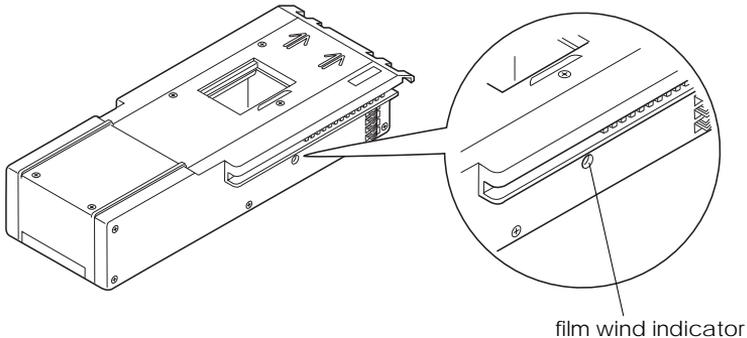


Caution:

Never attempt to load an unprocessed cartridge into the holder, and never press too hard when loading the cartridge into the holder, as this may cause damage to the cartridge, the film, or the holder.

3. Make sure that the film wind indicator is white.

The cartridge holder automatically checks the cartridge's winding mechanism when the cartridge is loaded, and the film wind indicator appears white if the cartridge is usable.



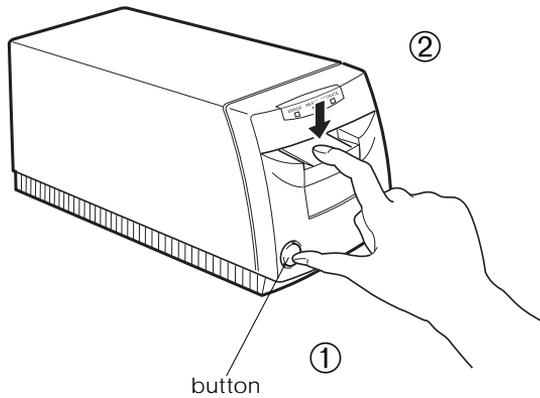
Caution:

If you find that the indicator is not white after loading film, there is a problem with the winding mechanism. Do not attempt to scan film in this cartridge; otherwise it may cause damage to the film. Turn the knob on the cartridge holder's cover to the OPEN position. Open the cover and remove the cartridge. Then contact your photo development shop or processing lab.

4. Turn on the scanner, if you haven't already, by pressing the OPERATE button. The READY light comes on after a few moments.
5. Press and hold the button on the front of the scanner while pushing the door down until it clicks into place.

Note:

The READY light turns off because the scanner automatically shuts down when the door is lowered.

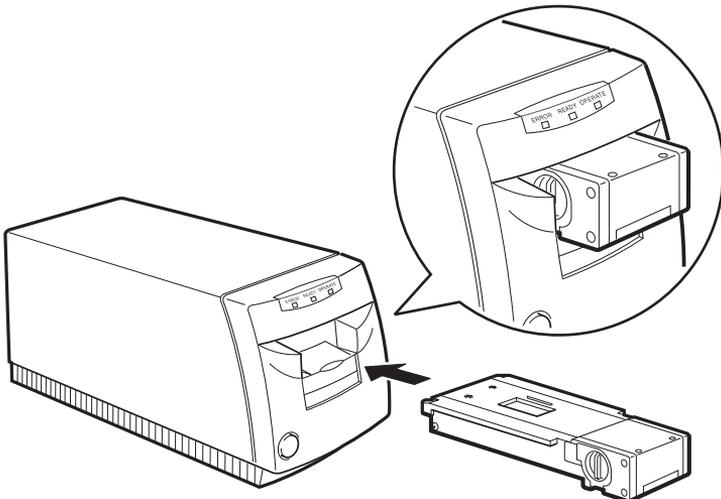


6. Insert the cartridge holder into the scanner with the arrow marks first as shown below.

The scanner automatically positions the cartridge in the correct place. The READY light comes on to indicate that the scanner is ready to proceed.

Note:

The film is still within the cartridge at this time and is still wound. As long as the film is wound, you can take the cartridge holder out of the scanner and remove or replace the film cartridge.



Capturing Images Using EPSON TWAIN

This section explains how to scan Advanced Photo System film images. For instructions on scanning 35 mm negatives and positives, see Chapter 4.

Starting EPSON TWAIN

Your scanner uses EPSON TWAIN to scan images. You can scan images directly from the scanning software that comes with your scanner or from an application program that supports the TWAIN standard. This section describes how to access EPSON TWAIN from the PhotoEnhancer Special Fun Edition and Adobe Photoshop. To access it from another application, see the documentation that came with that application.

Note:

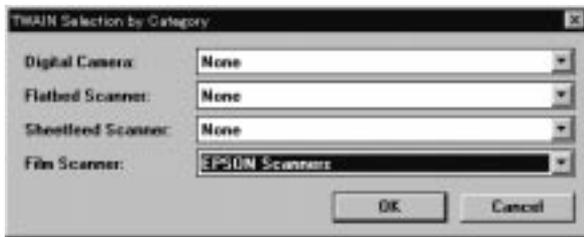
The EPSON TWAIN operating procedure is the same on both Windows and Macintosh platforms. Screen illustrations below are from Windows 95.

1. Load the optional cartridge holder containing the cartridge film into the scanner as described earlier in this chapter. Make sure that the scanner's READY light is on.
2. Make sure that your TWAIN-compliant application program is open. If you have other TWAIN drivers installed in your system, see step 3. If not, go directly to step 4.

Note:

For details on starting your application, see your application user's guide.

3. Select your EPSON film scanner as the TWAIN source before starting EPSON TWAIN. The methods shown below are for PhotoEnhancer Special Fun Edition and Photoshop. See your application user's guide for instructions on selecting the TWAIN source if necessary.
 - ❑ To use the PhotoEnhancer Special Fun Edition as your scanning application, click the Setup icon on the Photo Center menu in the PhotoEnhancer Express window. The following dialog box appears.



Select EPSON Scanners for Windows 3.1x-based applications or EPSON Scanners (32-bit) for Windows 95/NT-based applications as the Film Scanner setting. Select EPSON FilmScan 200 as the Film Scanner setting for Macintosh-based applications.

- ❑ To use Adobe Photoshop as your scanning application, click Acquire on the File menu. Then click Select TWAIN Source for Windows 3.1x or Macintosh-based applications, or click Select TWAIN Source_32 for Windows 95/NT-based applications. The following dialog box appears.



Select EPSON Scanners for Windows 3.1x, or select EPSON Scanners (32-bit) for Windows 95/NT. Select EPSON FilmScan 200 for Macintosh.

4. Start EPSON TWAIN as described below.

Note:

For details on opening EPSON TWAIN through your application, see your application user's guide.

- If you use the PhotoEnhancer Special Fun Edition software, click the Film Scanner icon in the PhotoEnhancer window.
- If you use Adobe Photoshop, click Acquire on the File menu; then choose TWAIN or TWAIN-32 depending on the setting you chose in step 3.

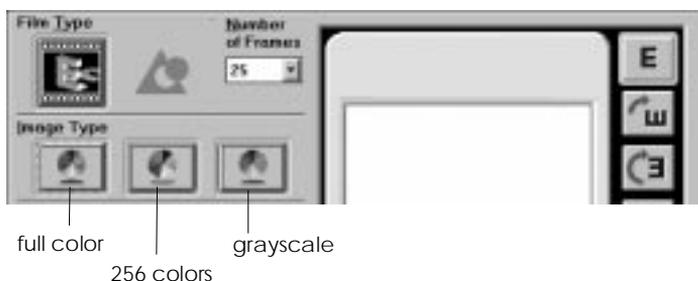
The EPSON TWAIN window appears as shown below.



Scanning images

You are now ready to preview and scan your film images. Keep in mind that the lower part of the EPSON TWAIN window displays relevant help information that you can refer to for additional guidance.

1. Make sure that the cartridge holder containing a film cartridge is loaded correctly in the scanner. Also, make sure the scanner is on and open EPSON TWAIN as described in the previous section.
2. Specify the number of images on the film, and select the color scheme: fill color, 256 colors, or grayscale (varying shades of gray, from black to white).



Note:

To use the full color option, you may need a video card, video driver, and display that support at least the following number of colors. Some application software can produce pseudo “full color” even if your display can only generate 256 colors. See your application user’s guide for more details if necessary.

Windows: 65,000 colors (16-bit color)

Macintosh: 32,000 colors

3. Select the frame (or frames) that you want to preview by clicking in the appropriate numbered check box. A frame is selected if a check appears in the check box.

Note:

The frame numbers under the check boxes correspond with the frame numbers that appear on the film's index sheet. To save time, keep this in mind when selecting frames in the software.



Rewinds five frames
Rewinds one frame

Advances one frame
Advances five frames

Note:

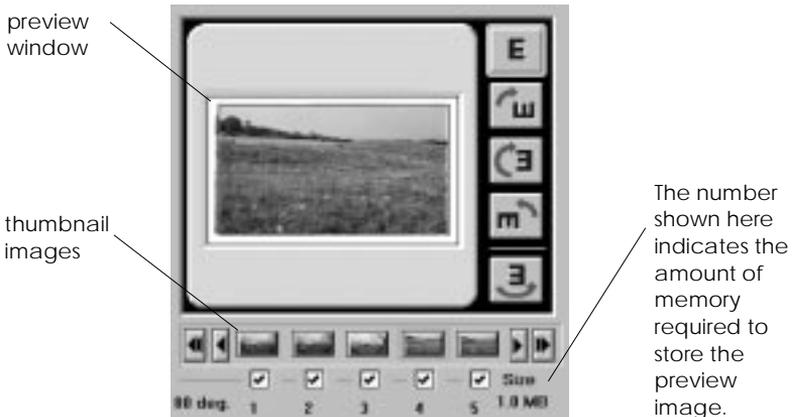
You can use the Clear All/Select All button to deselect or select all frames at once. The button name automatically switches each time you click it.

4. Click Preview. The scanner acquires the images you selected. A preview image appears in the preview window and thumbnail images for all selected frames appear on the corresponding buttons, as shown below.



Caution:

- ❑ *Do not touch the cartridge holder or move the scanner while the scanner is operating; otherwise it may be damaged.*
- ❑ *The cartridge film is unwound when you preview or scan images. Always click the Eject button to wind the film and eject the cartridge holder. You can pull the holder out of the scanner by hand; however the film will remain unwound within the holder. If the film is unwound in the holder, do not attempt to remove the cartridge from the holder; otherwise you may scratch or tear the film.*



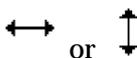
Note:

- ❑ *Be sure to preview images before scanning; otherwise your scanned image may come out marred or distorted.*
- ❑ *The preview image always appears at size H (HDTV format: 89 × 158 mm).*
- ❑ *If the film images appear upside-down on the screen, you can turn them right side up by clicking the Rotate all 180 deg. option. (Because not all cameras use the same cartridge loading direction, some cameras will produce images that initially appear upside down.)*

5. To view a different preview image, click the corresponding thumbnail image. The thumbnail image appears as a full preview in the preview window.
6. If necessary, crop or move the scan area of the preview image with the pointer, which turns into the following drawing symbols depending on where you point.



Appears in the center of the image. You can move the scan area by dragging (click and hold while moving the mouse) the hand over the preview image.



Appears at the edge of the image. You can move one edge at a time by dragging the double arrow.



Appears near the edge of the image. You can remake the scan area by dragging the cross-hairs. Then use the other drawing symbols to make small adjustments to the scan area if required.

Note:

- *The scan area you set only effects the image shown in the preview window.*
- *The initial previews will generally include a portion of the film carrier itself, resulting in a white border around the film image. You may need to crop the scan area to remove this border.*

- Adjust image quality, image rotation, and other image options, as necessary. To make these settings, click Options, Configuration, or one of the image rotation buttons. For detailed information on these settings, see Chapter 6, “Getting to Know More About EPSON TWAIN.”

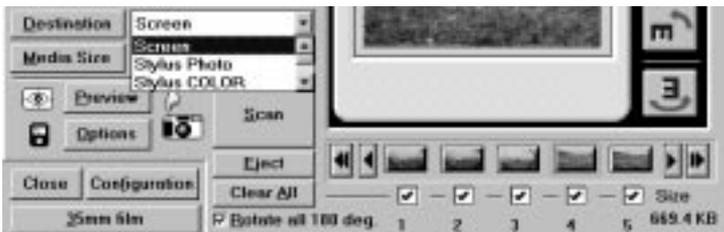
Note:

The settings you make only effect the image shown in the preview window.

- Select the destination device from the Destination pop-up list shown below. The driver automatically adjusts the color correction and resolution settings to match the selected device.

Note:

Usually, you do not have to change the resolution setting. If you want to change the resolution, see “Selecting a Destination Device and Media Size” in Chapter 6.



- Select the output size for the scanned image from the Media Size pop-up list. See page 6-6 for details.



Note:

If you choose Actual Size from the Media Size pop-up list, the scanner determines the size of the scanned image according to the actual film size.

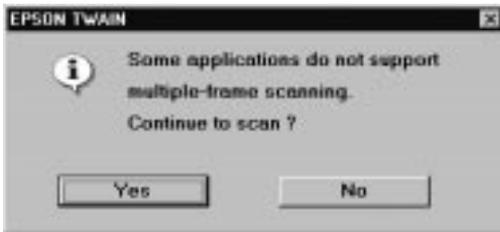
10. Select the image(s) you want to scan by clicking the appropriate check box(es). An image is selected if a check appears in the check box.
11. Click the Scan button.



Caution:

Do not touch the cartridge holder or move the scanner while the scanner is operating; otherwise it may be damaged.

If you have selected more than one image for scanning, the following dialog box appears. If your application software does not support simultaneous scanning of multiple images, click No, and scan one image at a time. If your application supports multiple-image scanning, click Yes.



The scanned image(s) is displayed as a new file behind the EPSON TWAIN window. (You may need to move the EPSON TWAIN window to view the scanned image.)

12. To remove the cartridge holder, always follow the instructions described below.

Removing the Advanced Photo System film cartridge holder

To rewind the film and remove the film cartridge holder, read the following steps:

Note:

EPSON TWAIN may automatically close when scanning is finished. If this happens, start EPSON TWAIN again.



Caution:

When you have finished scanning, be sure to take the film out and store it in an appropriate film storage bag. Do not leave film in the scanner, as internal scanner temperatures may eventually cause the film to degrade.

1. Click the Eject button. The scanner rewinds the film (this may take a moment), and then ejects the film cartridge holder.



Caution:

Always click the Eject button to eject the cartridge holder. You can pull the holder out of the scanner by hand; however the film will remain unwound within the holder. If the film is unwound in the holder, do not attempt to remove the cartridge from the holder; otherwise you may scratch or tear the film.

2. Take the cartridge holder out of the scanner, then press down and release the scanner door to close completely.



Caution:

While the scanner is not in use, close the scanner door to keep dust out of the scanner's internal mechanisms.

If you want to begin scanning 35 mm film after scanning cartridge film, simply load the film carrier containing the 35 mm film, then click the 35 mm film button. The EPSON TWAIN window for scanning 35 mm film appears. For more information on scanning 35 mm film, see Chapter 4, “Scanning 35 mm Film Images.”

3. Click Close to exit EPSON TWAIN.

Saving the captured image file

Save your captured image file in your TWAIN-compliant software. A typical save procedure is described below. For detailed information, see your application user's guide.

1. Select Save or New on the File menu in your application.
2. Select the file format.
3. Enter a filename; then select the destination drive and directory.
4. Click OK or Save to save the file.

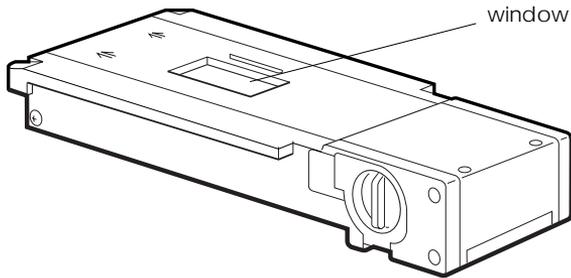
Taking the Film Cartridge Out of the Cartridge Holder

1. Make sure the film is wound in the holder. If the film is not wound, it will be visible through the window shown below.

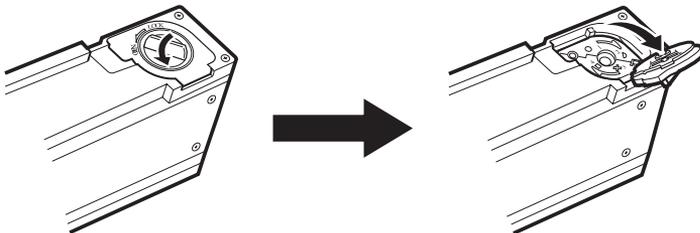


Caution:

Do not open the cover if you see film in the window. Otherwise you may scratch or tear the film. If film is wound in the cartridge holder, see “Winding film in the film cartridge holder” in Chapter 7.



2. Open the film cartridge cover by turning the knob on the cover to the OPEN position. Remove the cartridge.



Chapter 6

Getting to Know More About EPSON TWAIN

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Introduction

This section describes the buttons and other screen items shown in the main EPSON TWAIN window below. Most screen items are for both 35 mm film (positives, negatives, and slides) and Advanced Photo System film cartridges. For 35 mm film specific buttons, such as Film Type, see Chapter 4. For Advanced Photo System film cartridge specific settings and buttons, such as Number of Frames, see Chapter 5.



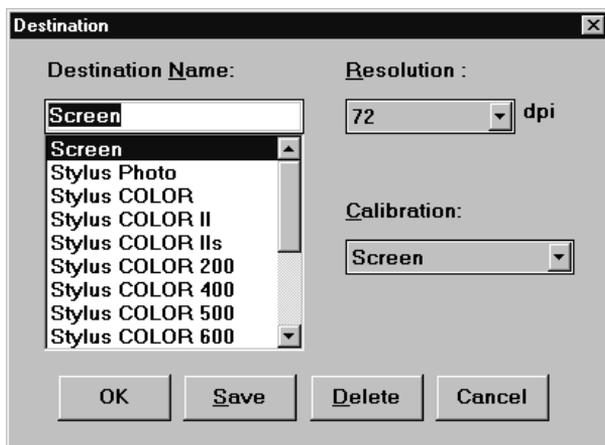
35 mm film EPSON TWAIN window

Selecting a Destination Device and Media Size

Read the following for details on selecting which device to send the scanned image file to, and see page 6-6 for information on selecting what size to reproduce the scanned image file at.

Adding Destination settings

Use the Destination dialog box to add new destination devices or to change the resolution and calibration settings for existing devices. To access this dialog box, click the Destination button in the EPSON TWAIN window. The Destination dialog box appears as shown below.



To add a new destination (output) device, enter the name of the new device in the Destination Name box by highlighting and then overwriting the name that is already displayed in the box. To make the Resolution and Calibration settings, select a predefined setting or highlight the setting that is displayed and overwrite it with your custom setting. Then click Save.

To modify the settings of an existing device, select that device from the Destination Name list, then select a different value or option in the Resolution and Calibration boxes, or highlight the value or option that is displayed and overwrite it with your custom entry.

Note:

- ❑ *You need to click the Save button; otherwise the new settings will be erased when you exit EPSON TWAIN.*
- ❑ *You will find your custom setting along with the predefined settings in the Destination pop-up list in the EPSON TWAIN window.*

To delete a setting, select the name of a setting from the Destination Name list and click Delete.

Destination Name

Displays the name of the selected output device. Predefined output devices have predetermined Resolution and Calibration settings. For more details about these settings, see the following. To add your own custom output device and settings to the Destination Name list, see the previous section.

Resolution

You can set the resolution for the scanned image file to any value between 50 and 4800 dpi. If you are directing your output to a printer, you should generally set the value to approximately 1/3 the printing resolution. If you are printing with an EPSON Stylus series printer, it is recommended that you leave the resolution setting at its default value.

Note:

This value does not set the actual scanning resolution. The scanner automatically selects the scanning resolution in accordance with the Resolution setting, Media Size setting, and the specified scanning area.

Calibration

Select the final destination setting (such as display or printer) for the scanned image from the Calibration list. Color correction and other, similar calibration adjustments are implemented according to the selection you make here. If the name of the printer you are using does not appear in the Calibration list, select Screen instead.

Note:

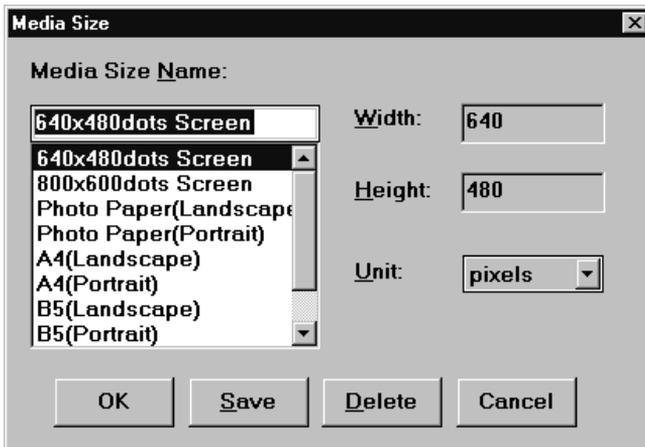
- ❑ *Calibration is ignored when you are scanning 35 mm film and the Pos. Film Destination Calibration option in the Configuration dialog box (Macintosh only) is set to Apple ColorSync (see page 6-16). In this case, the ColorSync feature controls the color correction.*
- ❑ *Because the Calibration setting optimizes image quality for a specific device, the quality of the image that appears on screen may decline.*

Buttons

- | | |
|--------|---|
| OK | Puts your new settings into effect for this session and closes the dialog box. |
| Save | Saves your new destination setting to the Destination Name list. You can choose your new setting the next time you open EPSON TWAIN. |
| Delete | Removes the currently selected device from the Destination Name list. If you then click OK, the device is deleted. However, if you click Cancel instead of OK, you cancel the deletion. |
| Cancel | Discards any settings you just made and closes the dialog box. |

Adding Media Size settings

Use the Media Size dialog box to add a new output size or to make detailed adjustments to a predefined setting. Media Size settings determine the output size of scanned images. EPSON TWAIN includes many predefined Media Size settings that match certain paper sizes. See the table on page 6-7 for details. To access this dialog box, click the Media Size button in the EPSON TWAIN window.



To add a new output size, enter the name of the new output size in the Media Size Name box by highlighting and then overwriting the name of a similar setting. To make the Width or Height settings, highlight the previous value and overwrite it with your custom setting. To make the Unit setting, click the arrow on the right of the setting and select your setting (you may have to scroll through the list). Click Save when you have finished making settings for your custom output size.

To modify an existing output size, select that setting from the Media Size Name list and make the Width, Height, and Unit settings as necessary.

Note:

- ❑ *You need to click the Save button; otherwise the new settings will be erased when you exit EPSON TWAIN.*
- ❑ *You will find your custom setting along with the predefined settings in the Media Size Name list in the EPSON TWAIN window.*

To delete a size setting, select the name of the setting from the Media Size Name list and then click Delete.

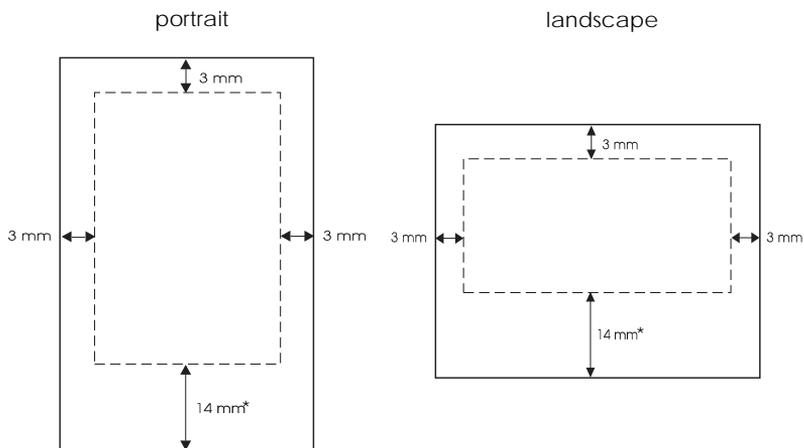
The following table shows the predefined size definitions.

Media Size settings	W × H		Dimensional unit
	Windows	Macintosh	
640 × 480 screen	640 × 480	640 × 480	Pixels
800 × 600 screen	800 × 600	800 × 600	Pixels
Photo Paper (Landscape)	6.0 × 4.0	6.0 × 4.0	inches
Photo Paper (Portrait)	4.0 × 6.0	4.0 × 6.0	inches
A4 landscape	29.1 × 19.3	29.1 × 19.2	cm
A4 portrait	20.4 × 28.0	20.4 × 27.9	cm
B5 landscape	25.1 × 16.5	25.1 × 16.4	cm
B5 portrait	17.6 × 24.0	17.6 × 23.9	cm
Letter (Landscape)	10.7 × 7.8	10.7 × 7.7	inches
Letter (Portrait)	8.2 × 10.3	8.2 × 10.2	inches

Note:

The Actual Size option that appears in the Media Size pop-up list in the EPSON TWAIN window does not appear in the Media Size Name list. For an explanation of the Actual Size option, see page 4-17 (for 35 mm film) or 5-16 (for cartridge film).

Factory-defined printable area on Photo Paper, A4, B5, and Letter are shown below.



* 15 mm for Macintosh.

Media Size Name

Displays the name of the selected output media. Predefined media sizes have predetermined Width, Height, and Unit settings. For more details about these settings, see the following. To add your own custom media size to the Media Size Name list, see page 6-6.

Width

The width for the selected Media Size setting is shown here. To change the value, highlight and overwrite it with a new value.

Height

The height for the selected Media Size setting is shown here. To change the value, highlight and overwrite it with a new value.

Unit

The unit of measurement for the selected Media Size setting is shown here: cm (centimeters), inches or pixels. If you make a custom output size setting, be sure to match the Unit setting with the kind of output you will produce; cm or inches for paper output and pixels for screen output.

Buttons

OK	Puts your new settings into effect for this session and closes the dialog box.
Save	Saves your new output size setting to the Media Size Name list. You can choose the setting the next time you open EPSON TWAIN.
Delete	Removes the currently selected output size from the Media Size Name list. If you then click OK, the output size is deleted. However, if you click Cancel instead of OK, you can cancel the deletion.
Cancel	Discards any settings you just made and closes the dialog box.

Adjusting the Quality of Scanned Images

This section explains how to adjust the quality of images captured by the scanner. EPSON TWAIN optimizes an image according to the image quality options described below.

Note:

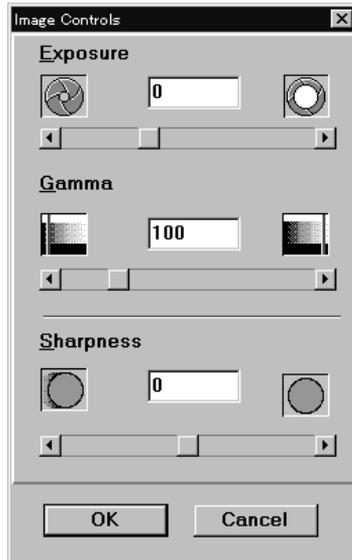
Be sure to perform the scanning process in this order; preview the image, make image quality settings, and then scan. Otherwise scanned images may not appear as expected.

Modifying visual effects

The following settings effect how EPSON TWAIN scans an image. To make these settings, click the Options button in the EPSON TWAIN window. The following dialog box appears:

Note:

The settings you make only effect the image shown in the preview window.



You can make these settings by moving the appropriate slider right or left and then releasing the slider, or by typing a new value in the appropriate box. You can view the effect of these changes in the preview image as you make these settings.

Exposure

Adjusts the image's brightness level with relatively slight effect on the overall contrast. Make the adjustment by moving the slider or by entering a new numerical value directly into the box. Positive values produce brighter images; negative values produce darker images.



negative value



0



positive value

Gamma

Adjusts the image's density (sometimes referred to as contrast). This allows you to adjust the image's mid-range brightness level while leaving the brighter and darker areas of the image relatively unchanged. Make the adjustment by moving the slider or by entering a new numerical value directly into the box. Higher values produce higher brightness.



negative value



0



positive value

Sharpness

Use this feature to strengthen or obscure the outlines of objects within the image. Make the adjustment by moving the slider or by entering a new numerical value directly into the box. Positive values add emphasis, while negative values make the outlines less clear.



negative value



0



positive value

Buttons

- | | |
|--------|--|
| OK | Puts your new settings into effect for this session and closes the dialog box. |
| Cancel | Discards any settings you just made and closes the dialog box. |

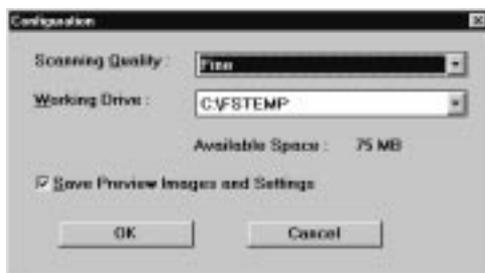
Configuring the scanning environment

Click the Configuration button in the EPSON TWAIN window to configure EPSON TWAIN settings such as scanning quality, positive film output calibration (Macintosh only), working drive (temp file), or whether preview images and settings are saved before exiting. The following dialog box appears:

Note:

The settings you make only effect the image shown in the preview window.

Windows:



Macintosh:



Scanning Quality

Determines the quality of your scan. The factory setting is Fine. If you change the setting while an image is shown in the preview window, the preview disappears. In this case, you need to click Preview to replace the image at the new quality level.

Normal

Scanning quality may be lower than that with the Fine setting, but scanning speed will almost always be faster. The Normal setting produces acceptable results when you are working with good-quality film images.

Fine

In most cases you should use the Fine setting. Always use the Fine setting when scanning from film images that are under- or overexposed, out of exposure, or of otherwise poor quality.

Pos. Film Destination Calibration (Macintosh only)

This setting appears only on Macintosh systems machines, and only if you are working with 35 mm positive film. It selects the color correction applied to preview images and final images obtained from 35 mm positives. (This setting has no effect on scans from cartridge film or 35 mm negative film.) Two options are available, as follows. The factory default setting is EPSON Calibration.

EPSON Calibration

Uses the EPSON proprietary calibration software. EPSON Calibration is a custom-designed profile that works with your scanner.

Apple ColorSync™

Uses Apple ColorSync 2.0. Select this setting to enable the ColorSync 2.0 calibration software. This setting disables the Calibration setting in the Destination dialog box. For more information about Apple ColorSync, see page 6-16.

Working Drive

Generally, there is no need to change the Working Drive setting. This setting selects the disk drive used for the following operations. The factory setting is (system boot drive) : \ FSTEMP or FSTEMP32 (for Windows 95 or NT). The drive must have at least 10MB of free space. If your boot drive does not have the required space, change the setting to a different drive.

Working Drive defines the drive and directory where preview images are saved when EPSON TWAIN closes if the Save Preview Image and Settings option is checked. See below for more information. This drive and directory are also used for temporarily saving data when carrying out image rotation or other memory-intensive operations.

Note:

- The FSTEMP or FSTEMP32 (for Windows 95 or NT) directory name is fixed; it cannot be changed.*
- You cannot select a floppy drive for your working drive. You may, however, select any other disk drive or non-disk storage medium.*

Save Preview Image and Settings

Selects whether EPSON TWAIN saves the preview images and certain settings before closing. If this box is checked (default setting), EPSON TWAIN will save the images and settings, and will automatically restore the images and settings the next time it opens.

Buttons

- | | |
|--------|--|
| OK | Puts your new settings into effect for this session and closes the dialog box. |
| Cancel | Discards any settings you just made and closes the dialog box. |

Understanding Apple ColorSync™

What is Apple ColorSync ?

Scanners, monitors, and printers use fundamentally different color representation systems (RGB for optical systems and CMYK for printing systems), with additional variations among manufacturers and machine models. Matching colors among the different devices may therefore require both skill and experience.

In answer to this problem, ColorSync provides automatic color matching among various devices. This technology allows even inexperienced operators to achieve good color matching.

The EPSON TWAIN interface on Macintosh machines supports the use of ColorSync 2.0. But note that in order to use this feature, your display (or printer) must also support it. If your display or printer does not provide this support, then you will need to select EPSON Calibration instead of Apple ColorSync.

Installing and using ColorSync 2.0

ColorSync 2.0 automatically installs together with EPSON TWAIN. However, for “custom” installations, you need to explicitly select the ColorSync component.

To use this feature, make sure you set the system profile for your monitor. To set your monitor profile, access the ColorSync System Profile utility through the Control Panel and click the Set Profile button. Select your monitor from the list of monitors that appears, and then click Select. Close the dialog box.

When you print captured images using the ColorSync feature, set the ColorSync feature in the printer driver. For details, see your printer's documentation.

ColorSync setup automatically installs EPSON scanner profiles into the System folder and selects the appropriate profile for your scanner. There is generally no need to make the selection yourself.

Rotating an Image

Click the buttons to the right of the preview window to rotate and/or invert the preview image.



Normal (This is the default setting.)

90° clockwise

180° clockwise

90° counterclockwise

Mirror image (right/left inversion). This setting can be combined with any of the other rotation settings above.

Chapter 7

Troubleshooting

Diagnosing a Problem	7-2
Error indicators	7-2
Testing the operation of the scanner	7-3
Problems and Solutions	7-5
Power supply	7-6
Film carrier and optional cartridge holder	7-7
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Winding film in the film cartridge holder	7-20

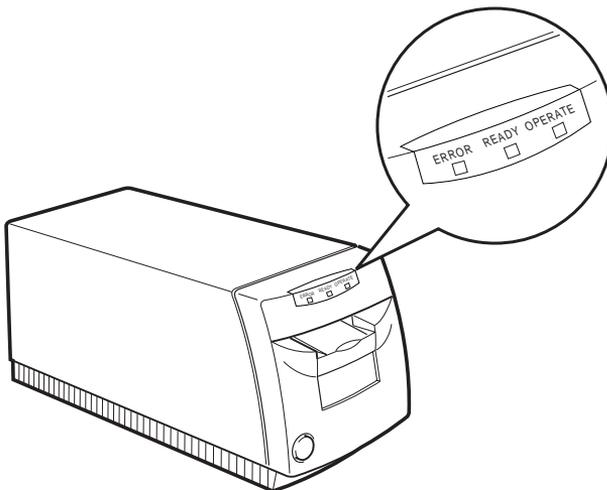
Diagnosing a Problem

Troubleshooting scanner problems is best handled in two easy steps: first diagnose the problem, then apply likely solutions until the problem is fixed. The information that you need to diagnose the most common problems is provided by the scanner's indicators. In addition, you can determine whether a problem lies with the scanner itself or with the computer by testing the operation of the scanner.

In "Problems and Solutions" later in this chapter you can find the causes and solutions to specific scanner problems. Use the information presented in this chapter to pinpoint the source of your problem, then apply the recommended solutions until the problem is solved.

Error indicators

You can identify many common scanner problems with the indicator lights on the front of the scanner. If your scanner stops working and the lights are on or flashing, use the following table of light patterns to diagnose the problem, then follow the recommended corrective measures.



State of lights		Problem and solution
ERROR	READY	Command error
○	○	Error occurred in software settings or in command sent to the scanner. Check your software settings and try scanning again. Resetting the scanner has no effect.
ERROR	READY	Communication error
◐	●	Error occurred in interface connection or settings. Check the interface connections as well as the port or SCSI ID settings, and then press the RESET button. If the error does not clear, turn off the scanner; after about 10 seconds, turn it back on. If the problem still persists, contact your dealer.
ERROR	READY	Operating error
●	●	You may have attempted to scan with no film carrier or cartridge holder in the scanner. Load a 35 mm film carrier or the optional Advanced Photo System film cartridge holder into the scanner; then scan again. Resetting the scanner has no effect.
ERROR	READY	Fatal error
◐	◐	Scanner light malfunction or internal failure occurred. Press the RESET button. If the error does not clear, turn off the scanner; after about 10 seconds, turn it back on. If the problem still persists, contact your dealer.

○ = on, ● = off, ◐ = flashing

Testing the operation of the scanner

Testing the scanner can help you determine whether the problem lies with the scanner or the computer.

To test the scanner, follow these steps:

1. Make sure both the scanner and computer are turned off.
2. Unlock the wire clips or loosen the screws on both sides of the scanner's interface connector, and remove the ground connector, if necessary. Then disconnect the cable from the scanner's connector.

3. Make sure that the scanner is securely plugged into the power source.
4. Turn on the scanner. After a few moments the READY light comes on.

If the READY and ERROR lights are flashing, there is a problem with the scanner. See page 7-3

5. Insert the 35 mm strip film carrier into the scanner. The scanner slides the carrier backward and forward, and the READY light goes off.

Note:

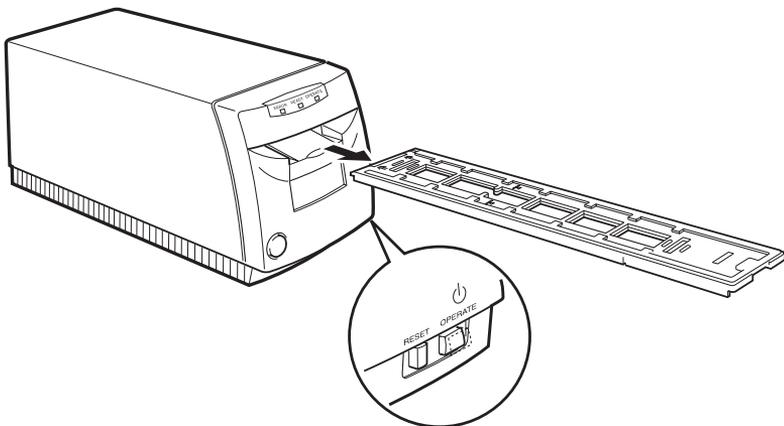
You do not have to load film in the film carrier.

6. When the READY light comes on, the scanner test is finished.

If the READY and ERROR lights are flashing, there is a problem with the scanner. See page 7-3.

If the scanner operates correctly, the problem lies elsewhere; such as the computer or interface cable.

7. Turn off the scanner and pull out the carrier from the front of the scanner by hand.



Problems and Solutions

This section divides scanner problems into four categories:

Power supply	page 7-6
Film carrier and optional cartridge holder . . .	page 7-7
EPSON TWAIN operation	page 7-8
Scanning	page 7-14

Go to the category for the type of problem you have and look for the description that most closely matches the problem. The most likely causes and solutions are listed first, so try them in the order that they are written until the problem is solved.



Caution:

If you experience one of the following problems, unplug the scanner immediately and call for service.

- The scanner becomes extremely hot (the scanner casing begins to deform).*
- The scanner emits fumes or a strange odor.*
- The ERROR light does not go off.*



Warning:

The scanner contains high-voltage circuitry. Never attempt to disassemble or repair the scanner yourself. Contact your dealer.

Power supply

The lights come on briefly, but then go off and stay off.

Cause	What to do
The scanner's voltage rating may not match the voltage of your electrical outlet.	Check the scanner's voltage rating and the outlets voltage rating. If the voltages do not match, unplug the scanner immediately and contact your dealer.



Warning:

Do not reconnect the power cord to an electrical outlet that does not have matching voltage.

The scanner does not work and the lights are off.

Cause	What to do
The power cord is not properly plugged into the electrical outlet.	Turn off the scanner, make sure the power cord is firmly plugged into the electrical outlet, and turn on the scanner. If the lights still don't come on, contact your dealer.
The scanner is turned off.	Press the OPERATE button to turn on the scanner. The OPERATE light will come on.
The electrical outlet is controlled by an outside switch or automatic timer.	Use a different outlet.
The outlet is out of order.	Plug another electrical device into the outlet to determine whether the outlet is working. If it is not, use a different outlet.

The READY light does not come on, even though the OPERATE light is on.

Cause	What to do
The scanner door may be open.	Press the scanner door down and release it to close completely.

Film carrier and optional cartridge holder

The scanner does not load the half-inserted film carrier or cartridge holder.

Cause	What to do
The scanner takes a few moments to warm up before loading the carrier or cartridge holder.	Leave the carrier or holder inserted in the scanner. After a while the scanner will move the carrier or holder to the proper position and the READY light will turn on.

Cartridge film remains unwound inside the Advanced Photo System cartridge holder.

Cause	What to do
You did not click the Eject button in EPSON TWAIN to eject the holder.	Reload the holder into the scanner. The scanner automatically rewinds the film (you will hear the rewinding sound). When the READY light comes on, rewinding is finished and you can pull the rewind holder out of the cartridge by hand.

If the film remains unwound even though you clicked the Eject button in EPSON TWAIN, the cartridge's winding mechanism or cartridge holder does not work properly.

Check the color of the indicator on the cartridge holder.

If the color is not white, the cartridge's winding mechanism is bad. Remove the cartridge from the holder, contact a photo shop that handles Advanced Photo System film.

If the indicator is white, the holder itself may be defective. Contact your dealer.

EPSON TWAIN operation

EPSON TWAIN cannot be installed.	
---	--

Cause	What to do
Your computer system may not meet the required installation conditions.	Confirm that your computer type and operating system match the requirements of your scanner. See "System Requirements" in Chapter 1.

EPSON FilmScan 200 does not appear in the Port list of the EPSON Scanner Setup dialog box when you connect the SCSI model to a PC.	
---	--

Cause	What to do
The interface cable is not connected properly.	Turn off the scanner and computer, then make sure the interface cable is firmly connected between the scanner and computer. See Chapter 2, "Connecting EPSON FilmScan 200 to Your Computer."

The scanner's SCSI ID conflicts with the ID for another device.

Change the SCSI ID number to an unused number as described in "SCSI connections" on page 2-5. Use your SCSI board's utility software to check the ID numbers of other connected SCSI devices.

The SCSI chain is not correctly terminated.

Check the connection sequence and set the termination as described in "SCSI connections" on page 2-5.

No image appears after you click Test in the EPSON Scanner Setup dialog box when using a PC.

Cause	What to do
--------------	-------------------

The scanner is off.	Turn on the scanner and load film into the scanner; the READY light comes on. Try again to make the settings in EPSON Scanner Setup dialog box. See "Installing the Scanner Software in Your PC" in Chapter 3.
---------------------	--

35 mm film is not set in the scanner.	Load film into the scanner, then click Test in the EPSON Scanner Setup dialog box. See "Installing the Scanner Software in Your PC" in Chapter 3.
---------------------------------------	---

The interface cable is not connected properly.	Turn off the scanner and your computer, then make sure the interface cable is firmly connected between the scanner and computer. See "Connecting the Scanner to Your PC" in Chapter 2.
--	--

The wrong interface cable is being used.	Use a cable that meets the requirements for the interface connection. See the interface board user's guide.
--	---

The interface board is not installed correctly.

Make sure that the board is installed correctly and securely.

For EPSON FilmScan 200 (parallel model) users:

The I/O port address of the parallel interface board is already taken by another device.

Change the I/O port address to an unused value. See your computer and parallel interface user's guides. Write down the I/O port address, as you will need to specify it when making the port settings in the EPSON Scanner Setup dialog box.

For EPSON FilmScan 200 (parallel model) users:

The interface board is not compatible with your scanner.

Install the EPSON bidirectional interface board that came with your scanner. See the interface board's documentation for instructions.

For EPSON FilmScan 200 (parallel model) users:

The I/O port address of the parallel interface board does not match the port address in EPSON TWAIN.

Check the I/O port address of the interface board, and change the I/O port address setting in the EPSON Scanner Setup dialog box to match the address of the interface board. See page 3-6 for information on port ID settings.

Note:

Even if the EPSON parallel interface board that came with your scanner is installed, you will need to change the I/O port address if you have changed its jumper setting. Write down the I/O port address, as you will need to specify it when making the port setting in the EPSON Scanner Setup dialog box.

For EPSON FilmScan 200 (SCSI model) users:

The computer was turned on before the scanner.

Turn off the scanner and your computer. Turn on the scanner; then turn on your computer. See "Power-on sequence" in Chapter 2.

For EPSON FilmScan 200 (SCSI model) users:

The SCSI driver is not installed properly.

Install the driver properly. See the SCSI board user's guide. Then check the board's operation using the utility software that came with the board.

For EPSON FilmScan 200 (SCSI model) users:

The scanner's SCSI ID conflicts with the ID for another device.

Change the SCSI ID number to an unused number as described in "SCSI connections" on page 2-5. Use your SCSI board's utility software to check the ID numbers of other connected SCSI devices.

For EPSON FilmScan 200 (SCSI model) users:

The SCSI chain is not correctly terminated.

Check the connection sequence and set the termination as described in "SCSI connections" on page 2-5.

EPSON TWAIN does not start.	
------------------------------------	--

Cause	What to do
The interface cable is not connected properly.	Turn off the scanner and your computer, then make sure the interface cable is securely connected between the scanner and computer. See Chapter 2, "Connecting EPSON FilmScan 200 to Your Computer."
The wrong interface cable is connected.	Use a cable that meets the requirements for the interface connection. See the interface board user's guide.
The scanner is off.	Turn on the scanner, then start EPSON TWAIN.

Note:

If your scanner is connected by a SCSI cable, be sure to turn on the scanner before you turn on your computer.

EPSON TWAIN is not selected properly.

From your application's File menu, click Select Source (or a similar command) and make sure that EPSON Scanners for Windows 3.1x, EPSON Scanners (32-bit) for Windows 95/NT, or EPSON FilmScan 200 for Macintosh is selected. See "Capturing Images Using EPSON TWAIN" in Chapter 4 (for 35 mm film) or Chapter 5 (for cartridge film).

Your scanner port is not properly selected in the EPSON Scanner Setup dialog box in Windows.

If you have installed another TWAIN driver besides EPSON TWAIN, you need to choose the port for EPSON FilmScan 200 in the EPSON Scanner Setup dialog box. To choose the port, open the EPSON Scanner Setup dialog box from the Control Panel; then choose the port for your scanner. For more details, see "Installing the Scanner Software in Your PC" in Chapter 3.

The interface board is not installed properly.

Check that the board is installed correctly and securely. See the user's guide that comes with the interface board.

For EPSON FilmScan 200 (Parallel model) users:

The I/O port address of the parallel interface board is already taken by another device.

Change the I/O port address to an unused value. See your computer and parallel interface user's guides. Write down the I/O port address, as you will need to specify it when making the port settings in the EPSON Scanner Setup dialog box.

For EPSON FilmScan 200 (parallel model) users:

The interface board is not compatible with your scanner.

Install the EPSON bidirectional interface board that came with your scanner. See the interface board's documentation for instructions.

For EPSON FilmScan 200 (parallel model) users:

The I/O port address of the parallel interface board does not match the port address in EPSON TWAIN.

Check the I/O port address of the interface board, and change the I/O port address setting in the EPSON Scanner Setup dialog box to match the address of the interface board. See page 3-6 for information on port ID settings.

Note:

Even if the EPSON parallel interface board that came with your scanner is installed, you will need to change the I/O port address if you have changed its jumper setting. Write down the I/O port address, as you will need to specify it when making the port setting in the EPSON Scanner Setup dialog box.

For EPSON FilmScan 200 (SCSI model) users:

The computer was turned on before the scanner.

Turn off the scanner and your computer. Turn on the scanner; then turn on your computer. See "Power-on sequence" in Chapter 2.

For EPSON FilmScan 200 (SCSI model) users:

The SCSI driver is not installed properly.

Install the driver properly. See the SCSI board user's guide. Then check the board's operation using the utility software that came with the board.

For EPSON FilmScan 200 (SCSI model) users:

The scanner's SCSI ID conflicts with the ID for another device.

Change the SCSI ID number to an unused number as described in "SCSI connections" on page 2-5. Use your SCSI board's utility software to check the ID numbers of other connected SCSI devices.

For EPSON FilmScan 200 (SCSI model) users:

The SCSI chain is not correctly terminated.

Check the connection sequence and set the termination as described in "SCSI connections" on page 2-5.

Scanning

Image is completely black.

Cause	What to do
You may not have loaded film into the 35 mm carrier, or you may have scanned empty frames.	Load 35 mm film into the carrier as described in Chapter 4 and when scanning, make sure to select only those frames that contain film.

Image is inverted.

Cause	What to do
You may have loaded your 35 mm film in the wrong direction.	Reload the film in another direction and try scanning again. Also, see Chapter 4, "Scanning 35 mm Film Images."
If you are scanning cartridge film, the image direction depends on the camera's cartridge loading direction.	If the preview images are upside down, click the Rotate All 180 deg. check box in the EPSON TWAIN window.

Image is unclear or distorted.

Cause	What to do
You may have loaded your 35 mm film in the wrong direction.	Reload the film in another direction and try scanning again. Also, see Chapter 4, "Scanning 35 mm Film Images."
The scanner film was obstructed while scanning.	Scan again and make sure that nothing disturbs or bumps the film or scanner during scanning.
The 35 mm film is contaminated by dust.	Clean the film and try scanning again.

Image is dark, and there is little or no detail in the image.	
--	--

Cause	What to do
You haven't run the screen calibration program.	Calibrate the screen. See "Calibrating Your Screen" on page 3-13.
The monitor is not selected as the Destination setting in EPSON TWAIN.	Select Screen as the Destination setting in EPSON TWAIN to optimize screen display. See "Capturing Images Using EPSON TWAIN" in Chapter 4 (for scanning 35 mm film images) or Chapter 5 (for scanning cartridge film images).

Note:

If you have selected a printer for your final output, the colors displayed on your screen may not match the actual photo colors, however colors will reproduce correctly when the image is printed. Set the Destination setting to match the target device.

The EPSON TWAIN Color Scheme selection is not appropriate.	Set the value to match the number of colors supported by your display. Images will not look right if you select more colors than your display supports. See "Capturing Images Using EPSON TWAIN" in Chapter 4 (for scanning 35 mm film images) or Chapter 5 (for scanning cartridge film images).
--	---

Image colors are strange.

Cause

What to do

You did not preview the image before scanning it.

Always preview images before scanning them. See Chapter 4 (for scanning 35 mm film images) or Chapter 5 (for scanning cartridge film images).

The monitor is not selected as the Destination setting in EPSON TWAIN.

Select Screen as the Destination setting in EPSON TWAIN for optimal screen display of your images. See “Capturing Images Using EPSON TWAIN” in Chapter 4 (for scanning 35 mm film images) or Chapter 5 (for scanning cartridge film images).

Note:

If you have selected a printer for your final output, the colors displayed on your screen may not match the actual photo colors, however colors will reproduce correctly when the image is printed. Set the Destination setting to match the target device.

Your monitor's color setting is not correct.

If your monitor includes a color-adjustment feature, try adjusting the color so that the image more closely matches the photo. See the monitor user's guide.

The EPSON TWAIN Color Scheme selection does not match the number of colors supported by your display.

Set the value to match the number of colors supported by your display. Images will not look right if you select more colors than your display supports. See “Capturing Images Using EPSON TWAIN” in Chapter 4 (for scanning 35 mm film images) or Chapter 5 (for scanning cartridge film images).

The image appears too large on the screen.	
---	--

Cause	What to do
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The resolution you used for scanning does not match the resolution of your screen. Computer-screen resolution is generally between 70 and 90 dpi, while the resolution of a scanned image may be much higher. Some applications will enlarge the image so that all of its pixels appear on the screen --with higher resolutions producing a greater degree of enlargement.

Select Screen as the Destination setting in EPSON TWAIN for optimal screen displays. See “Capturing Images Using EPSON TWAIN” in Chapter 4 (for scanning 35 mm film images) or Chapter 5 (for scanning cartridge film images).

If you select a printer or other device as your output target, some applications enlarge the image when displaying it on the screen. The image will appear in the correct size when reproduced by the selected target device.

The image does not print out correctly.

Cause	What to do
There is a difference between the colors you see on the monitor and the colors produced by your printer.	Printed colors will not exactly match the colors on your monitor, since printers and monitors use different color systems: monitors use RGB (red, green, blue), while printers typically use CMYK (cyan, magenta, yellow and black).

The printer is not selected as the Destination setting in EPSON TWAIN.	Select the printer as the Destination setting in EPSON TWAIN and try scanning again. See “Capturing Images Using EPSON TWAIN” in Chapter 4 (for scanning 35 mm film images) or Chapter 5 (for scanning cartridge film images).
--	--

For best printing results, use image-editing software to enhance your images before printing. Also your printer driver may provide a color-correction feature that you can use to further control the printing results.

Note:

For more information about printing problems and their solutions, see your printer documentation.

Multiple images cannot be scanned at one time.

Cause	What to do
Some applications do not support the scanning of multiple images.	Scan one image at a time.

The film frame appears on the scanned image when using cartridge film.

Cause	What to do
The cartridge holder does not work correctly.	Preview the film cartridge image, and press the RESET button on the scanner. Scan the image again.

Previews of film cartridge images do not appear.

Cause	What to do
The cartridge's winding mechanism or the cartridge holder is not working correctly.	<p>Check the color of the indicator on the cartridge holder.</p> <p>If the color is not white, the cartridge's winding mechanism is bad. Remove the cartridge from the holder, contact a photo development shop that handles Advanced Photo System film.</p> <p>If the indicator is white, the holder itself may be defective. Contact your dealer.</p>

White banding or dots appear in the scanned images.

Cause	What to do
Dust or some other object may be on the cartridge film.	Take the cartridge to a photo development shop or processing lab and have the cartridge cleaned.

Winding film in the film cartridge holder

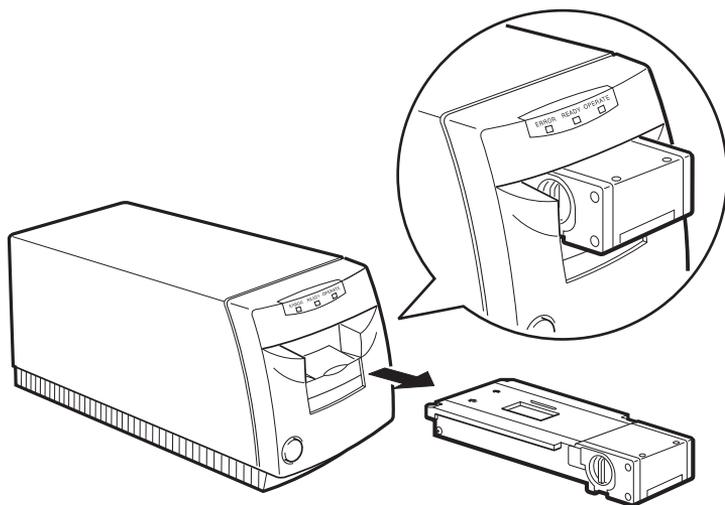
If you can see film in the window of the cartridge holder, then the film cartridge is unwound. Before you take the film cartridge out of the holder, follow the steps below to wind the film.



Caution:

Do not open the cartridge holder cover if film is unwound; otherwise you may scratch or tear the film.

1. Make sure that the scanner is turned on and the READY light is on.
2. Reload the film cartridge holder into the scanner. The scanner automatically rewinds the film (you will hear the sound of the rewinding), and the READY light comes on.
3. Pull out the cartridge holder from the front of the scanner by hand.



If you are unable to rewind the film in the cartridge holder, contact your dealer or a photo development lab.

Appendix

A

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Maintenance and Transportation

This section provides instructions for cleaning and transporting the scanner.

Cleaning the scanner

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

Before cleaning, unplug the power cord, then clean the outer case with mild detergent dissolved in water. If the scanner is stained with grease or some other hard-to-remove material, use a small amount of glass cleaner on a soft cloth.



Caution:

- Do not use a hard or abrasive brush to clean it.*
- Never use alcohol, thinner, or a 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.*



Warning:

The scanner contains high voltage circuitry. Never attempt to disassemble or repair the scanner yourself. Contact your dealer.

Transporting the scanner

1. If a film carrier or cartridge holder is loaded in the scanner, remove it as described below.



Caution:

Transporting the scanner with the film carrier or cartridge holder inside may result in equipment damage. Always remove the carrier or holder before transporting.

If the film carrier is loaded in the scanner, remove the carrier by pulling it straight out from the scanner.

If the film cartridge holder is loaded in the scanner, remove the cartridge holder by clicking the Eject button in the EPSON TWAIN window. Before removing the cartridge holder, see “Removing the Advanced Photo System film cartridge holder” on page 5-17.



Caution:

Make sure the film is completely wound in the cartridge before taking the cartridge out of the cartridge holder; otherwise you may scratch or tear the film when you open the cartridge holder cover.

2. Disconnect the power cord and the interface cable.
3. Attach the protective materials you removed when unpacking the scanner, and repack the scanner.
4. Keep the scanner level during transport.

Specifications

Mechanical

Scanner type	Color film scanner
Dimensions and weight	Width: 120 mm Depth: 310 mm Height: 143 mm Weight: 3 kg
Scanning method	Anchored reading head, carriage movement
Photoelectric device	Monochrome CCD line sensor
Source film types	35 mm strip film (color or monochrome, negatives or positives) 35 mm slides (color or monochrome, positives) in the mount (50.8 mm × 50.8 mm) with 2 mm maximum thickness Advanced Photo System film in a cartridge (optional cartridge holder is required) 15, 25, 40 frames type, fully exposed
35 mm film carrier	6-frame carrier for 35 mm strip film 4-frame mount for 35 mm slides
Reading area	35 mm film: 24 × 36 mm per frame 24 × 36 mm × 6 frames for 35 mm strip film 24 × 36 mm × 4 frames for 35 mm slides Cartridge film: 16 × 28 mm
Effective pixels	1128 × 1700 pixels (1200 dpi per frame) for 35 mm film 752 × 1322 pixels (1200 dpi per frame) for cartridge film
Scanning resolution	Main scanning 1200 dpi Sub scanning 2400 dpi
Printing resolution	50 to 4800 dpi
Scanning speed	15 ms/line (scanning positive film, not including data transfer time)

Color separation	By switching light sources (R,G,B)	
Reading sequence	Monochrome, color line sequence	
Brightness	5 levels	
Halftones	Input 10 bits, Output 8 bits (10 bits A/D)	
Output data	8 bits for monochrome images 8 bits per color for color images	
Interface	Bidirectional parallel or SCSI	
Light source	Noble gas fluorescent lamps	
Reliability	Main unit	10,000 previews 20,000 scans
	Cartridge holder	10,000 frame movements

Electrical

Input voltage range	120V Model	220-240V Model
Rated frequency range	50 to 60 Hz	50 to 60 Hz
Input frequency range	49.5 to 60.5 Hz	49.5 to 60.5 Hz
Rated current	0.4 A	0.22 A
Power consumption	30 W	30 W

This product is also designed for IT power system phase to phase voltage 220-240V.

Note:

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

Environmental

Temperature:	Operation: 5 to 35°C (40 to 95°F) Storage: -25 to 60°C (-13 to 140°F)
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Humidity:	Operation: 10 to 80% without condensation No more than 65% for cartridge film is recommended.
Operating conditions:	Storage: 10 to 85% without condensation Ordinary office or home conditions. Extreme dust should be avoided. Operation under direct sunlight or near a strong light source should be avoided.

Safety approvals

Safety standards:

U.S. model UL 1950, CSA C22.2 No.950

European model EN60950 (VDE and NEMKO)

EMC:

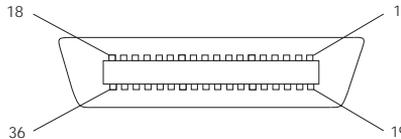
U.S. model FCC part 15 subpart B class B
CSA C108.8 class B

European model EN 55022 (CISPR Pub. 22) class B
EN 61000-3-2
EN 61000-3-3
EN 50082-1
IEC801-2
IEC801-3
IEC801-4

Australian model AS/NZS 3548 class B

Parallel interface

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 interface

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

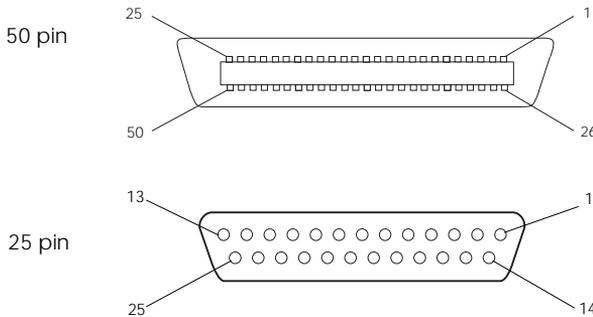
Electrical standard: ANSI X3.131-1986

ID Setting: Selectable from 0 to 7
(SCSI ID number for the EPSON FilmScan 200 is originally set to 2.)

Terminator: Internal terminator selectable
(enable/disable)

Connector type: D-SUB 25-pin and Centronics 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	<ul style="list-style-type: none"> * The scanner is turned on. * The scanner receives an $\overline{\text{INIT}}$ signal from the parallel interface: pin 31 goes LOW. * The scanner receives a SCSI Reset signal from the SCSI interface. * The RESET button is pressed.
Software initialization	<ul style="list-style-type: none"> * Software sends the ESC @ (initialize the scanner) command. * The scanner receives a SCSI Bus Device Message.

Contacting Customer Support

If your scanner is not operating properly and you cannot solve your problem with the troubleshooting information in this guide and online help, contact customer support services for assistance.

We will be able to help you much more quickly if you are able to give the exact information indicated below.

Serial number of your scanner:

(The serial number label is on the back of the scanner.)

Scanner model:

EPSON FilmScan 200 (parallel interface model) or

EPSON FilmScan 200 (SCSI interface model)

Brand and model of your computer:

Scanner software version:

(Click the About button on the Help menu in your application for the version number.)

Version of Windows (95, 3.1, NT, etc.):

Version of software applications you normally use with your scanner:

For United Kingdom and the Republic of Ireland users

If you purchased your scanner in the UK or the Republic of Ireland, Epson (UK) Limited provides a range of customer services and technical support.

Note:

For customers in the Republic of Ireland, please use the correct dialing codes when dialing the UK telephone numbers listed in the following sections. For example the Enquiry Desk fax number, 01442 227271, should be dialed as 0044 1442 227271 from the Republic of Ireland.

Enquiry Desk

The enquiry desk team can be contacted by calling 0800 220546 in the UK or 1 800 409132 from the Republic of Ireland, by faxing 01442 227271, and via the Internet at info@epson.co.uk. They can provide the following information:

- Information and literature on new EPSON products (also available from Faxon Epson)
- Where to purchase genuine EPSON consumables, accessories and options

Customer Support

Our Customer Support team can provide the following services:

- Technical information on installing, configuring, and operating your EPSON products
- Arranging for faulty EPSON products to be repaired within the warranty period

For information on contacting our Customer Support team, please see the Service and Support Information booklet that came with your EPSON product.

If this booklet is not available, details can be found on Faxon Epson faxback service, EPtec Bulletin Board Service or on EPSON's World Wide Web site. See below for details.

Faxon Epson

Contact Faxon Epson faxback service for:

- Literature and specifications on the latest EPSON products
- Support information including troubleshooting tips, switch settings and driver information

To use Faxon Epson, call 01442 227332 using a touch-tone phone. You will be asked to follow a simple routine to register your document request, and once you have entered your telephone and fax numbers, Faxon Epson will fax a copy of the document catalogue to your fax machine.

When you have found the documents that you need in the catalogue, call Faxon Epson again and enter the document ID numbers. The documents will be faxed to you automatically.

EPtec - Bulletin Board Service

Call the Epson Bulletin Board Service on 01442 227479 for the latest drivers and utilities. No membership is required. Make sure that your communications software is set to 8 data bits, 1 stop bit, no parity bit, ANSI terminal mode emulation and a modem speed of up to 28.8 Kbps. Downloading protocols supported include Xmodem, Ymodem and Zmodem. See the documentation that came with your communications software and modem for more information.

When you first connect to the Bulletin Board Service, you will be asked for your name, company name, phone number and a password (which you can invent yourself).

World Wide Web

If you can connect to the Internet and have a Web Browser, you can access EPSON's World Wide Web site at <http://www.epson.com>. Here you will find information on the latest EPSON products, software drivers, and answers to frequently asked questions.

For Australian users

EPSON Australia wishes to provide you with a high level of Customer Service. As well as this *User's Guide*, we provide the following sources for obtaining information:

EPSON FAXBACK

EPSON FAXBACK will fax you the latest specifications and pricing for most EPSON products offered in Australia. There is also technical information including details of the latest software and drivers available. Phone (02) 9903 9075 and the system will guide you through a number of choices before faxing the information to your fax machine.

EPSON Bulletin Board System

This is where you can download the latest software and drivers. Visit the BBS to check out the latest versions. If you have a modem, phone (02) 9417 5090.

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

Access the EPSON Australia World Wide Web pages. Worth taking your modem here for the occasional surf! You can get the same information as offered on the EPSON FAXBACK and the EPSON Bulletin Board plus more.

Your Dealer

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

EPSON Helpdesk

EPSON Helpdesk is provided as a final backup to make sure our clients have access to advice. Operators on the Helpdesk can aid you in diagnosing hardware and software problems. They can also advise you on the latest EPSON products and where the nearest dealer or service agent is located. Many types of queries are answered here.

Access to the Helpdesk is at no charge to purchasers of new products for the first 12 months of that product's life. After that period, a different phone number is used and charges are debited to your telephone account. The current charge rates are specified when you ring the chargeable support number. You are asked to signify your acceptance before any charges are incurred.

The Helpdesk numbers are:

first 12 months	(02) 9903 9040
after 12 months	1 902 263 192
fax number	(02) 9903 9189

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

For Singapore users

Contact the telephone and fax numbers below:

Phone: (065) 337-7911
Fax: (065) 334-1185

For Hong Kong users

To obtain technical support as well as other after-sales services, users are welcome to contact EPSON Hong Kong Limited.

Internet home page

EPSON Hong Kong has established a local home page in both Chinese and English on the Internet to provide users with the following information:

- Product information
- Answers to Frequently Asked Questions (FAQs)
- Latest versions of EPSON scanner drivers

Users can access our World Wide Web home page at:
<http://www.epson.com.hk>.

Electronic bulletin board system

An electronic bulletin board system (BBS) is also available to obtain scanner information and the latest versions of scanner drivers. You can log on to the following number for the BBS service:

BBS: (852) 2827-4244

Technical Support Hotline

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

Phone: (852) 2585-4399
Fax: (852) 2827-4383

For Philippines users

To obtain technical support as well as other after sales services, users are welcome to contact the EPSON Philippines Representative Office at the telephone and fax numbers below:

Phone:	(632) 813-6552
Fax:	(632) 813-6545
BBS:	(632) 814-0595

Glossary

35 mm slide

A single image of 35 mm positive film mounted in a frame.

35 mm strip film (negative or positive)

The scanner can load a 6-frame strip of standard 35 mm negative or positive film.

Negative film: White/black values are reversed. The film circumference is brown. This is the standard film for generating prints.

Positive film, Color-slide film: White/black values are the same as in the final image. The film circumference is black. This is the standard film used for producing 35 mm slides.

Advanced Photo System

New standard developed jointly by camera and film manufacturers in a variety of countries. The system utilizes a new type of cartridge, and offers a number of significant advantages over conventional 35 mm film systems.

Film remains in the same cartridge throughout its life. The cartridge is easy to load into the camera, and easy to handle after processing. Although you cannot view the processed film directly, the photofinisher returns an index sheet that shows all of the exposures on the film.

The film is smaller than 35 mm, allowing for smaller and lighter cameras.

You can select from among three print sizes (depending on camera support):

Size "C" (Classic: 89 × 127 mm), Size "H" (HDTV: 89 × 158 mm), and Size "P" (Panorama: 89 × 254 mm).

A magnetic coating on the back of the film stores photo information at the time a picture is taken and allows for data exchange among camera, film, and photofinishing equipment. This "IX" (Information Exchange) system helps ensure production of high-quality prints, allows for resetting of print type prior to development, and enables printing of captions on the back of the photo prints (if supported by the camera).

A load-protect mechanism prevents exposed film from being accidentally reloaded and re-exposed.

Base side

The side of the film from which you can read the manufacturer's name and the film ID numbers. The base side is glossier than the emulsion side.

Bidirectional parallel interface

The interface is "parallel" because it transfers eight bits of data simultaneously, and "bidirectional" because it supports data transfer in both directions (from computer to scanner, and from scanner to computer).

Color correction

Different output devices reproduce colors in various ways, so color correction, or color matching, is required. Most operating systems come with color correction software; ICM for Windows and ColorSync for Macintosh.

Emulsion side

The photosensitive side of the film -- consists of a photosensitive chemical layer (emulsion) that is applied to the base.

Gamma correction

Different output devices reproduce contrast values differently, so gamma correction (contrast adjustment) is required. This is also referred to as density correction.

Pixel

Computers and other digital devices produce an image as a collection of dots.

These dots on a screen are referred to as pixels (picture elements). Computers treat each pixel as a single set of data. The number of bits used to define each pixel determines the available number of colors and tones (i.e., the number of different appearances each pixel can take).

Primary colors

Devices read and represent all colors as some combination of three primary colors. Scanners and monitors use red, green, and blue (RGB), while printers use cyan, magenta, and yellow (CMY). Printers may also add black ink in order to get true black reproduction -- referred to as the CMYK system, where the "K" denotes black.

Resolution

Measurement of the definition of an image, in dots (or pixels) per inch (dpi). Higher resolutions provide greater detail. By matching the scan resolution to the resolution of the destination device (screen, printer, etc.), the scanner can fully utilize the capabilities of other devices.

Scan

The scanner "reads" an image by passing a sensor across the image and then moving slightly down the image. It repeats this process until the entire image has been read. The scanner must therefore control movements in two directions, the scan direction (the horizontal movement of the sensor as it reads the data), and the subscan direction (the vertical movement of the film).

SCSI

Small Computer System Interface -- Standard interface for connecting computers to peripheral devices such as hard disks and scanners. Devices connect together in a "daisy chain" configuration.

Tone

Film images include continuous (infinite) tonal variations between absolute dark and absolute light. Computers and other digital devices have finite tonal ranges, and must therefore break the true tonal range into 64, 256, or other certain tonal ranges.

TWAIN

Standard interface over which software applications can control the operation of scanners and other such imaging devices. All software applications bundled with your scanner comply with the TWAIN standard, and can therefore access your scanner through the EPSON TWAIN interface.

Zoom

Refers to enlargement or reduction of an image when reproducing it on the monitor or target device. The scanner zooms in on an image (enlarges it) by reading a greater number of pixels per unit area, or zooms out by reading a smaller number of pixels. The target device, because it has a fixed resolution (fixed number of dots per inch), responds to the greater or lesser number of dots by increasing or decreasing the size of the image.

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Film Scanner
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