

EPSON®

COLOR SCANNER

EXPRESSION® 1680

Color Graphics Scanner User's Guide

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Welcome

The EPSON Expression® 1680 is a 48-bit color, professional scanner designed to meet the needs of graphic arts professionals and business graphics users. Using EPSON's ColorTrue® II Imaging System, the scanner reproduces images with amazingly accurate detail and color. Your scanner can achieve up to 1600 × 3200 dpi hardware resolution with EPSON's proprietary Micro Step Drive™ technology, and is one of the fastest scanners in its class.

About Your Scanner

Your EPSON Expression 1680 scanner comes with these features:

- Superior image quality with remarkable 1600 × 3200 dpi hardware resolution
- 48-bit color and 3.6 Dmax optical density
- Easy-to-use scanner software with three scanning modes offering progressive levels of control over the scanned image
- Optional transparency unit, automatic document feeder, and IEEE 1394 FireWire® scanner interface card

Note: The transparency unit comes with the Professional and Professional FireWire models of the Expression 1680. The IEEE 1394 FireWire scanner interface card is preinstalled on the Professional FireWire model.

Getting More Information

There are several ways to learn more about your EPSON Expression 1680 scanner. In addition to the printed materials, help utilities and electronic manuals are available. Here's where to look for help:

- **EPSON Expression 1680 User's Guide**
Provides instructions on using EPSON Scan, including maintenance information and troubleshooting tips. You installed an HTML version of this manual on your computer when you installed the scanner software. See page 3 for instructions on viewing the on-screen manual.
- **On-Screen Help**
For more information about your EPSON Scan software, click the **Help** button. If you have the Professional or Professional FireWire model, most of the applications that come with your scanner include on-screen help.
- **Electronic Documents**
For Professional or Professional FireWire models, LaserSoft Imaging™ SilverFast®, Adobe® Photoshop Elements®, and MonacoEZcolor® include electronic manuals in Adobe Acrobat PDF format.

If none of these sources answers your questions, please see “Where To Get Help” on page 51.

Warnings, Cautions, Notes, and Tips

Please follow these guidelines as you read this manual:

Warning: Warnings must be followed carefully to avoid bodily injury.

Caution: Cautions must be observed to avoid damage to your equipment.

Note: Notes contain important information about your scanner.

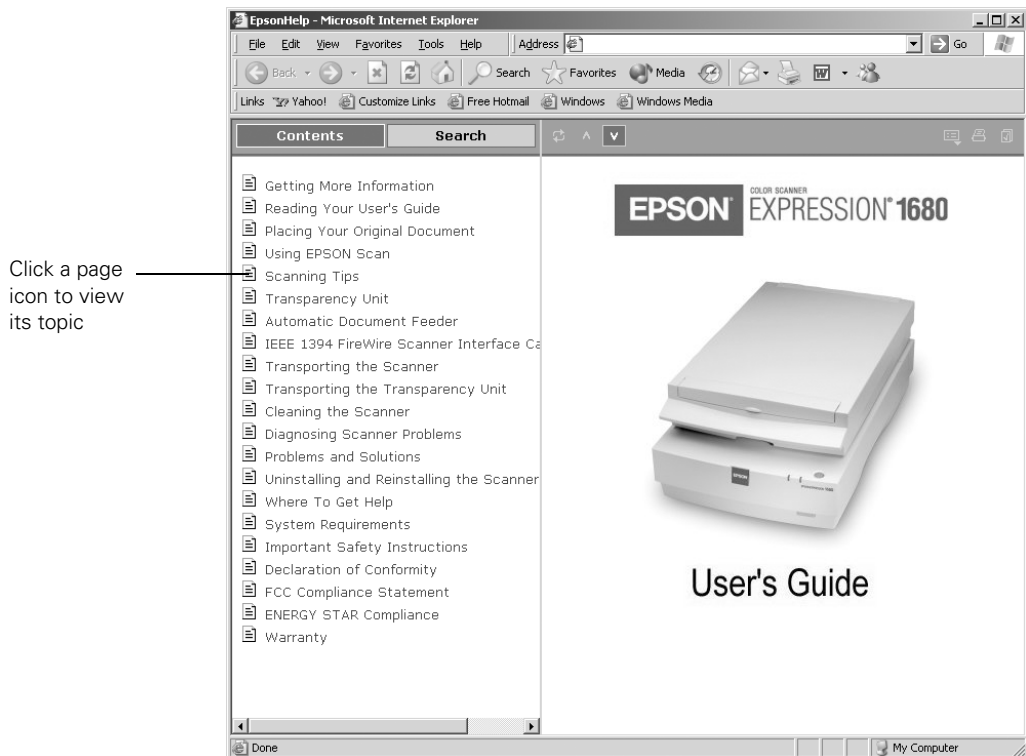
Tip: Tips contain additional hints for great scanning.

Viewing Your Electronic User's Guide

An electronic version of this *EPSON Expression 1680 User's Guide* was installed on your computer when you installed the scanner software. You must have a web browser (Netscape Navigator® or Microsoft® Internet Explorer, versions 3.0 or later) to view it.

To open the manual, double-click the Exp1680 User's Guide shortcut icon on your desktop.

Your browser opens and you see this window:



Click on one of the page icons on the left side of the screen to move to that topic in the manual.

Chapter 1

How To Scan

This chapter gives you step-by-step instructions for scanning with EPSON Scan. Follow the instructions here for:

- Placing your document on the scanner's document table
- Starting EPSON Scan
- Scanning with each of the three scanning modes
- Using the preview window to select the area of your image that you want to scan
- Selecting resolution, resizing images, and scanning color images

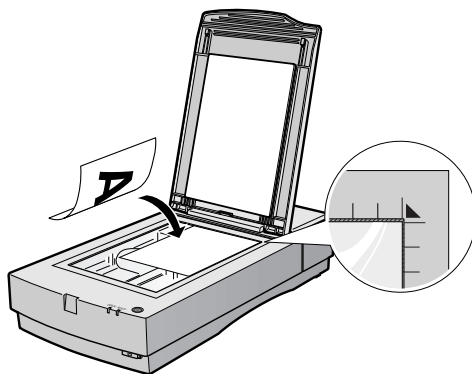
Placing Your Original Document

This section explains how to position a photo or single-page document for scanning.

If you're scanning film or slides, see "Using the Film Guides" on page 23 for instructions on placing your transparencies (you must have the transparency unit installed). If you're scanning a multi-page document using the optional automatic document feeder, see "Loading Paper in the Automatic Document Feeder" on page 31.

Note: If you have a Professional or Professional FireWire model of the EPSON Expression 1680, the transparency unit came with your scanner. Or you can order the transparency unit and automatic document feeder from EPSON. See page 19 for ordering information.

1. Raise the scanner cover and place your document face down on the document table. Align it with the scales along the upper right corner of the document table.



2. Close the document cover slowly. Be careful not to move the document.

Tip: If the edges of your document don't scan properly, move it in one-quarter inch from the edges of the document table.

You can remove the document cover if you need to scan a thick item—such as a photo in an album—that doesn't fit under the cover. Simply lift the back of the cover straight up. When you reattach the cover, line the rods up with the positioning holes and lower the cover into place.

Using EPSON Scan

EPSON Scan provides three scanning modes to give you progressive levels of control over your scanned image:

- **Home Mode:** Makes scanning quick and easy. It includes a simple interface, automatic image adjustments, and preset configurations for various types of scans.
- **Office Mode:** Includes a basic interface with practical scan settings designed for documents. Choose either this mode or Professional Mode to scan multi-page documents on the optional automatic document feeder (see page 28). You cannot use this mode to scan film or slides, and it is not recommended for photos.
- **Professional Mode:** Lets you manually configure advanced image settings, including the histogram setting, tone, color depth, balance, saturation, brightness, and contrast.

Starting Your Scan and Choosing a Mode

You can use the import or acquire function of a TWAIN-compliant application such as Adobe® Photoshop® to scan images directly into your application. Or you can scan to your hard drive by starting EPSON Scan from the Windows® Start menu, or the Macintosh® Apple® menu or Applications folder. You would then open the file in another application to print it or modify it for the screen or World Wide Web.

Follow these steps to start EPSON Scan and choose a scanning mode:

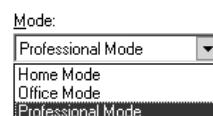
1. Choose the **Import** (or **Acquire**) option in your application and choose **EPSON Expression 1680**, or open EPSON Scan as follows:

- In Windows, click **Start > Programs or All Programs > EPSON Scan > EPSON Scan**.
- In Mac OS X, double-click the **EPSON Scan** icon in your Applications folder.
- In Mac OS 8.6 to 9.x, click **EPSON Scan** in the Apple menu.

Note: If you have multiple scanners installed, you are prompted to choose your scanner. Click **EPSON Expression 1680** and click **OK**.

2. Choose a mode from the Mode list at the top of the EPSON Scan dialog box.

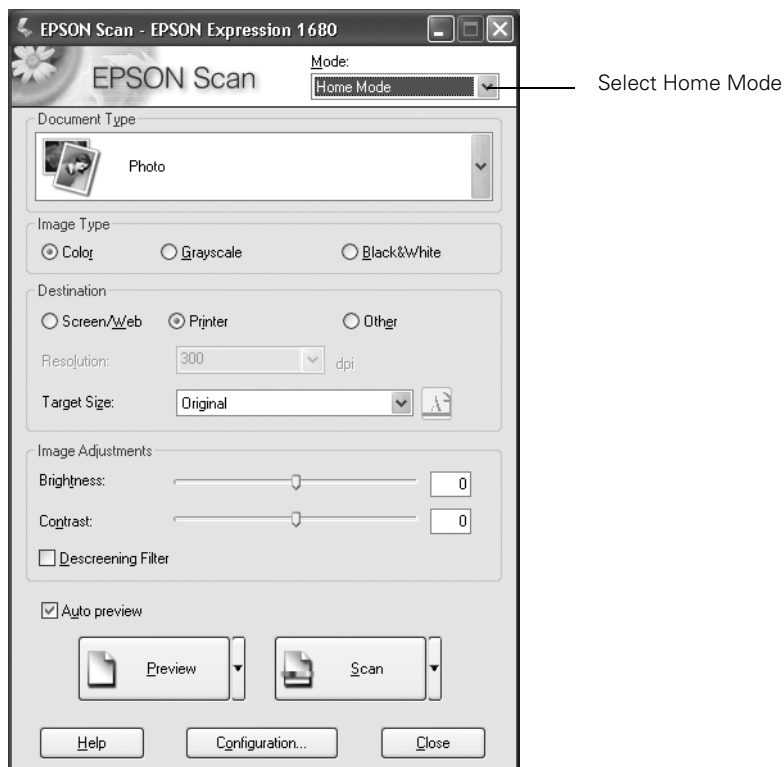
If you choose **Home Mode**, a preview scan opens automatically. (This is the default. If you don't want an automatic preview, deselect **Auto Preview** on the EPSON Scan dialog box.)




3. Continue with the instructions for your mode:
 - “Scanning With EPSON Scan in Home Mode” on page 8
 - “Scanning With EPSON Scan in Office Mode” on page 10
 - “Scanning With EPSON Scan in Professional Mode” on page 12

Scanning With EPSON Scan in Home Mode

1. Start EPSON Scan and choose **Home Mode** from the Mode menu (see page 7). You see this dialog box:



2. If you don't see an automatic preview of your scan, click **Preview**.
3. Click the  Auto Detect button in the preview window to automatically select your entire photo or document, or click and drag to create a scanning selection area (marquee). For more information on using marquees, see page 16.

Note: If the scanned image in the preview window has a blue box around it, you're previewing in thumbnail mode and won't be able to create a marquee. Click the arrow beside the **Preview** button in the EPSON Scan dialog box and select **Normal** from the pull-down menu. Then click the **Preview** button to preview in normal mode.

4. Choose a Document Type from the list.

Note: If you're scanning film, choose **Color Negative Film**, **B&W Negative Film**, or **Positive Film**. If you're scanning slides, choose **Positive Film**.

5. Choose an Image Type:

- **Color** for color photos or documents with color
- **Grayscale** for black-and-white photos or documents with grayscale images
- **Black&White** for plain text documents

6. Choose a Destination setting:

- **Printer** if you're printing the image
- **Screen/Web** if you will only view your image on the screen
- **Other** if you're shrinking or enlarging your image. Then choose the Target Size for your final scanned image.

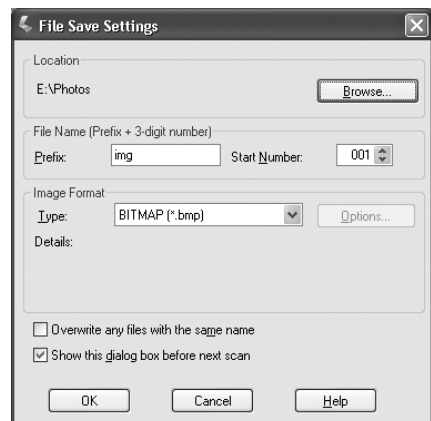
7. Select a Target Size if you want to specify any size other than that of the original document.

8. Adjust the Brightness and Contrast settings, if necessary.

9. If you're scanning printed materials, select **Descreening Filter** to reduce the moiré patterns in the image.

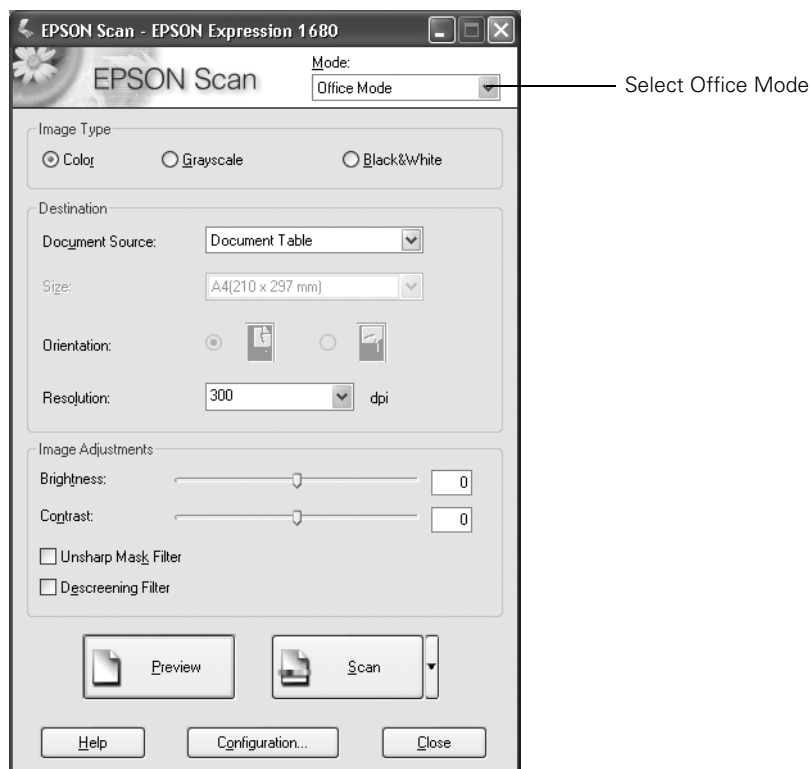
10. Click **Scan**.


- If you're scanning from an application, the image opens in your application window. Click **Close** to close the EPSON Scan window.
- If you're scanning to your hard drive, you see a File Save Settings window. Type a name for your file in the Prefix field, then choose an image type and click **OK**. (For more details, see the EPSON Scan on-screen Help.)



Scanning With EPSON Scan in Office Mode

1. Start EPSON Scan and choose **Office Mode** from the Mode menu (see page 7). You see this dialog box:



2. Click **Preview** to see a preview of your scan.
3. Click the  Auto Detect button in the preview window to automatically select your entire document, or click and drag in the preview window to create a scanning selection area (marquee). For more information on using marquees, see page 16.
4. Choose an Image Type:
 - **Color** for documents with color
 - **Grayscale** for documents with grayscale images
 - **Black&White** for plain text documents

5. Choose the Document Source:

- **Document Table** for documents placed on the scanner's document table (See page 5.)
- **ADF** for documents loaded in the optional automatic document feeder (You must have the automatic document feeder installed to see this option; see page 28.)
- **Auto Detect** to allow the scanner to automatically detect whether your document is on the document table or loaded in the automatic document feeder (You must have the automatic document feeder installed to see this option; see page 28.)

6. Select the Size of your document, or select **Auto Detect** in the Size list to let the scanner automatically detect the document size.

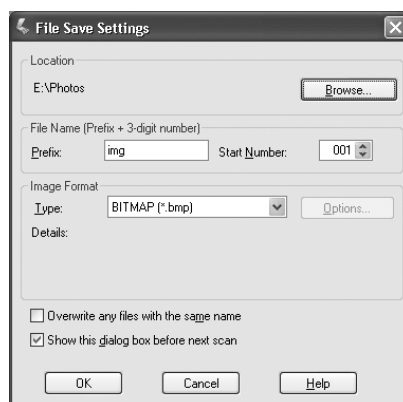
Note: The Orientation option is not functional for the Expression 1680.

7. Make any of these adjustments, as necessary:

- Select a resolution
- Adjust the Brightness and Contrast settings for your image
- If you're scanning printed materials, select **Descreening Filter** to reduce the moiré patterns in the image
- To sharpen the image, select **Unsharp Mask Filter**

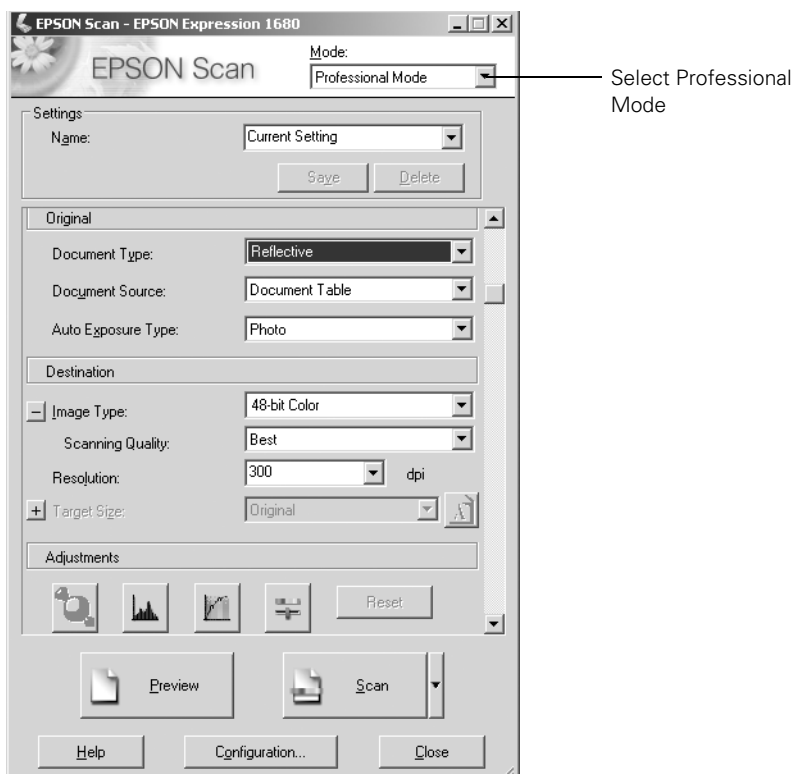
8. Click **Scan**.


- If you're scanning from an application, the image opens in your application window. Click **Close** to close the EPSON Scan window.
- If you're scanning to your hard drive, you see a File Save Settings window. Type a name for your file in the Prefix field, then choose an image type. (For more details, see the EPSON Scan on-screen Help.)



Scanning With EPSON Scan in Professional Mode

1. Start EPSON Scan and choose Professional Mode from the Mode menu (see page 7). You see this dialog box:



2. Click **Preview** to see a preview of your scan.
3. Click the  Auto Detect button in the preview window to automatically select your entire document, or click and drag in the preview window to create a scanning selection area (marquee). For more information on using marquees, see page 16.
4. Choose the Document Type:
 - **Reflective** for a photo or printed document
 - **Transparency** for film or slides (You must have the transparency unit installed to see this option; see page 20.) If you choose this option, go to step 6.


Note: The Document Type you select determines which options appear in the EPSON Scan dialog box.

5. If you chose **Reflective** as the Document Type, do the following:
 - Choose the Document Source: **Document Table**, or **ADF** for documents loaded in the optional automatic document feeder (see page 28).
 - Choose the Auto Exposure Type: **Photo** to optimize exposure for photos, or **Document** to optimize exposure for printed material.
6. If you chose **Transparency** as the Document Type, choose the Film Type: **Positive Film** (for slides and some film), **Color Negative Film**, or **B&W Negative Film**.
7. Either click **Scan** to complete your scan, or continue with the instructions in the next section to fine-tune it.


Using Professional Mode To Customize Your Scan

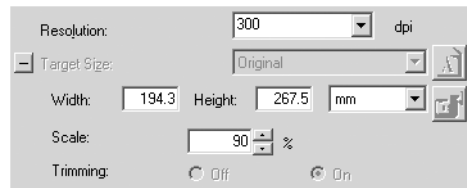
1. Choose a color depth setting from the Image Type menu:
 - 48-bit Color
 - 24-bit Color
 - Color Smoothing
 - 16-bit Grayscale
 - 8-bit Grayscale
 - Halftone
 - Black & White

Note: If you choose 48-bit Color, make sure your application supports 48-bit image files.


Click  to see more options, then choose **Best** or **Draft** for the Scanning Quality setting.


2. Choose a resolution setting (50 to 12800 dpi).


3. If you want to specify a Target Size for your scanned image other than the original size, select a size from the pull-down menu. You can also click  to see more options, then type in the width and height, or scale the image with a percentage. If Trimming is set to **On**, your image is cropped to fit your specified size. If it is **Off**, your image is sized to fit you specified size as closely as possible.




4. Use the Adjustment settings to modify your image as necessary. (You may have to use the scroll bar to see these options.)


 **Auto Adjust** – Click this button to let the software detect and analyze the image with the document settings you’ve specified to determine the optimum settings for your scan.

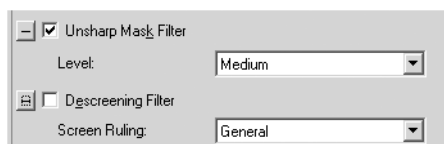
 **Histogram Adjustment** – Click this button to adjust the highlight, shadow, and gamma input levels.

 **Tone Correction** – Click this button to choose a preset tone curve for specific effects or to change the tone curve manually.


 **Image Adjustment** – Click this button to adjust the color balance, saturation, brightness, and contrast settings.

For any of the setting windows above, you can click **Reset** to go back to the default settings for your image. See the EPSON Scan on-screen help for more information about the Adjustment options.

5. If you want to sharpen the image, select the **Unsharp Mask Filter** option. Click  to see more options, then choose a Level to reduce or increase the effect.

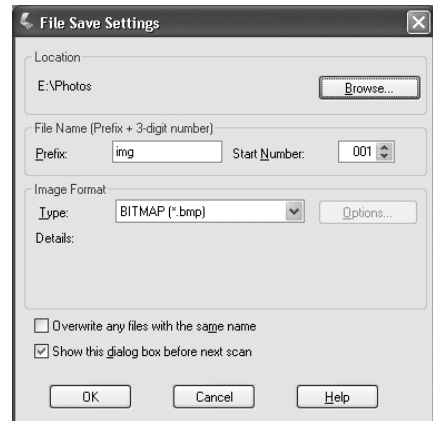


6. Select the **Descreening Filter** option to reduce the moiré patterns in the image.

To specify the source image you are scanning, click  to see more options, then choose the closest option to your source document in the Screen Ruling menu. (You may have to use the scroll bar to see this menu.)

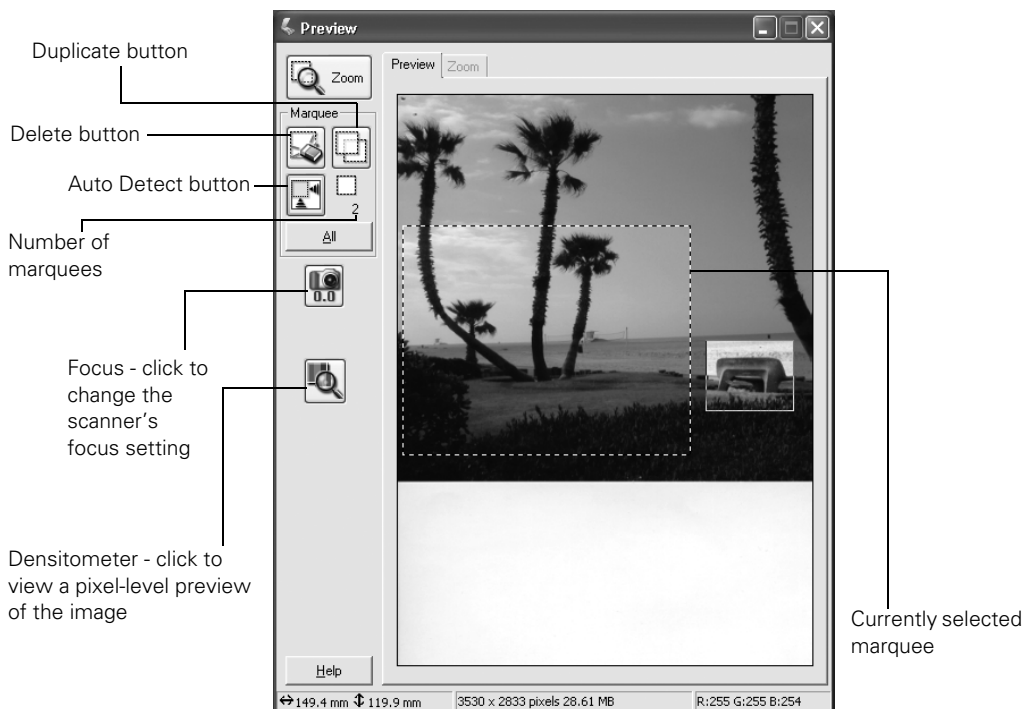
7. Click **Scan**.


- If you're scanning from an application, the image opens in your application window. Click **Close** to close the EPSON Scan window.
- If you're scanning to your hard drive, you see a File Save Settings window. Type a name for your file in the Prefix field, then choose an image type. (For more details, see the EPSON Scan on-screen Help.)






Selecting the Scanning Area in the Preview Window

The preview window lets you select the area of your image that you want to scan with a marquee (a frame that you draw around the previewed image). You can create up to 50 marquees at one time. The currently selected marquee has a moving, dotted line. EPSON Scan adjusts the image quality settings to optimize each selected area.



- To automatically create a marquee around the entire image (and cut out the document table area) click the  Auto Detect button.
- To select the area to scan, click and drag in the preview window. A marquee appears around the selection.
- To move the marquee, move the cursor to its center. When the cursor turns to a hand symbol, click and drag the marquee to a new position.
- To resize the marquee, move the cursor to an edge or corner of the dotted line. When the cursor turns into an arrow symbol, click and drag to resize the selection area.

- To zoom to the selected area, click the  **Zoom** button. If you have multiple marquees, the currently selected one appears in the Zoom preview.
- To erase a marquee, click the marquee and click the  **Delete** button.
- To create multiple marquees of the same dimensions, select one marquee, then click the  **Duplicate** button.
- To scan all marquees at once, click the **All** button.

Scanning Tips

Getting the best scan possible depends on several factors, including the quality of your original and the resolution you select. The better your original is, the better your scan will be. To get the best possible scan, keep the document table clean, and make sure the document is flat against the glass surface. You can make many corrections in your scanning software (EPSON Scan, or LaserSoft SilverFast if you have the Professional or Professional FireWire model of the scanner). For additional photo retouching, use an image editing program such as Adobe Photoshop Elements.

Selecting Resolution

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

For most images, use a scanning resolution that is approximately one third of your output resolution. For example, use a scanning resolution of 200 dpi if you want to print at 600 dpi. If you're scanning an image to view on-screen, choose a resolution of 96 dpi.

Follow the guidelines in this table for selecting a resolution:

Type of scan	Resolution
Photograph	300 dpi
Text with images	400 dpi
Film or slides	300 to 3200 dpi
Line art	300 to 3200 dpi
Image for web	96 to 150 dpi
Text for OCR	400 dpi
Newspaper	400 dpi
Magazine	300 dpi

Scaling (Resizing) Images

If you plan to enlarge your image, it's better to enlarge it by scanning at a higher resolution. If you change the image resolution or size in an application, you lose image quality. Keep this in mind when scanning small photos or film that you plan to enlarge.

Scanning Color Images

If the colors in your scanned image don't match those in your original document, try experimenting with the Document Type/Image Type settings and Image Adjustment settings to adjust the colors. Also, try selecting just the area that you want to scan with a marquee (see page 16). This will let the scanner software choose the optimum color and exposure settings for that part of the image. If there is a border around your image or if the document cover is in the scanning area, this may adjust the exposure and colors in your scan.

Chapter 2

Using Optional Equipment

There are three options available for the EPSON Expression 1680 color scanner:

- Transparency unit (B813182)
- Automatic document feeder (B813162)
- IEEE 1394 FireWire scanner interface card (B808342)

Note: If you have the Professional or Professional FireWire model of the EPSON Expression 1680, the transparency unit came with your scanner. If you have the Professional FireWire model, the IEEE 1394 FireWire scanner interface card was preinstalled in your scanner.

You can purchase supplies and accessories from the EPSON Store™ at (800) 873-7766, or visit www.epsonstore.com (U.S. sales only). In Canada, please call (800) 463-7766 for dealer referral.

Follow the instructions in this chapter for:

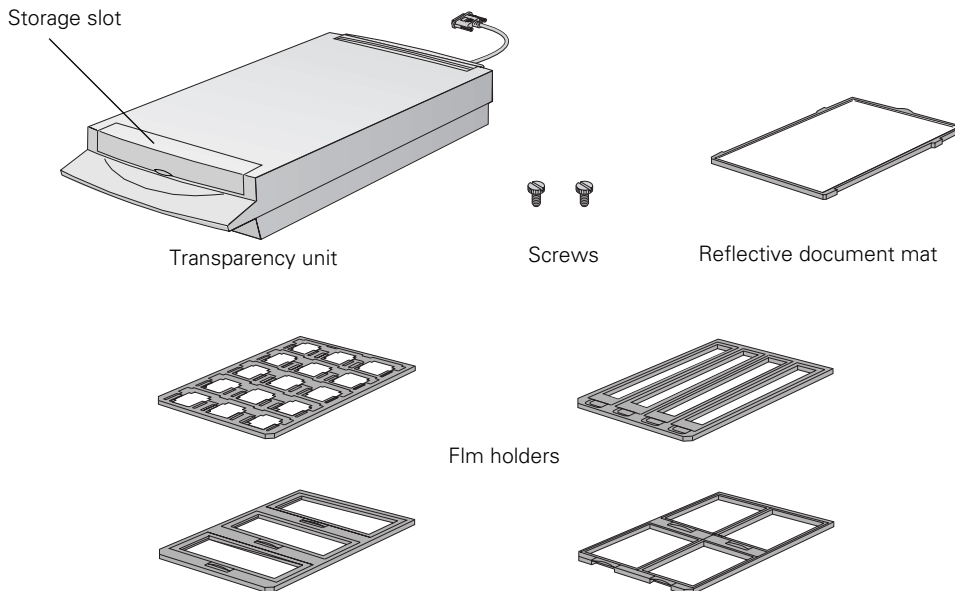
- Unpacking and installing the transparency unit
- Using the film guides
- Scanning reflective documents when the transparency unit is installed
- Unpacking and installing the automatic document feeder
- Loading paper in the automatic document feeder
- Fixing paper jams in the automatic document feeder
- Installing the IEEE 1394 FireWire scanner interface card

Transparency Unit

The transparency unit (B813182) allows you to scan transparent materials—35 mm slides, filmstrips, and film up to 8.5 × 11.7 inches (216 × 297 mm) in size. To switch between scanning transparent materials and normal reflective (paper) documents, simply insert or remove the reflective document mat that came with the scanner. For instructions on using the reflective document mat, see page 27.

Unpacking the Transparency Unit

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

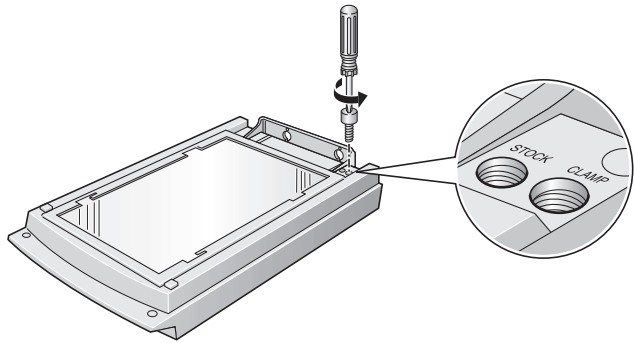


Note: Use the transparency unit's storage slot to store the reflective document mat. Don't store anything else in the storage slot.

Removing the Shipping Screw

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

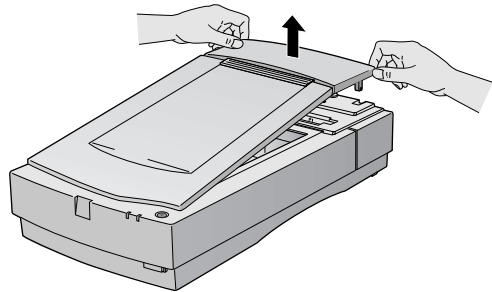
1. Turn the transparency unit so the glass side faces up.
2. Use a Phillips (cross head) screwdriver to remove the shipping screw from the hole labeled **CLAMP**, as shown at right.
3. Install the screw in the storage hole labeled **STOCK**.



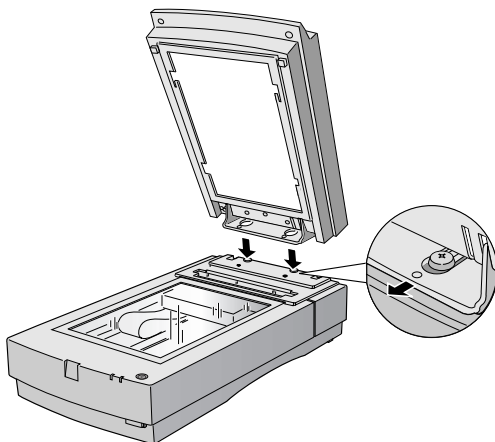
Caution: Before transporting the transparency unit, follow the procedures on page 36 to protect it from damage.

Installing the Transparency Unit

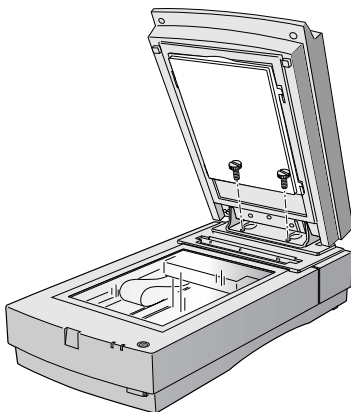
1. Make sure the scanner is turned off.
2. Remove the document cover by grasping the back of the document cover and easing the cover up.
3. Make sure the document table is clean and dust free.
4. Position the slots on the transparency unit's mounting bracket over the heads of the two mounting screws located at the back of the scanner.



5. Slide the transparency unit forward slightly until the two holes in front of these slots are aligned with the screw holes at the back of the scanner.

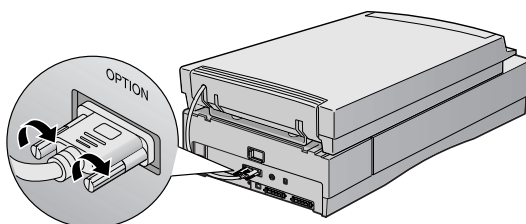


6. Insert the two installation screws that came with the transparency unit into the screw holes, then tighten the screws with a coin.



7. Gently close the transparency unit.
8. Connect the transparency unit cable to the **OPTION** connector at the back of the scanner. Tighten the attached screws.

See “Using EPSON Scan” on page 6 for scanning instructions.



Using the Film Guides

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

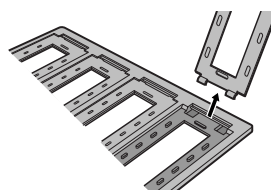
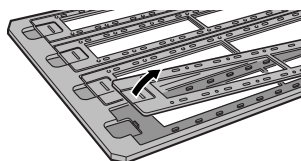
If the reflective document mat is installed (see page 27), be sure to remove it before scanning film or slides. Keep it in the transparency unit's storage slot when not in use.

Note: Make sure the transparency unit is completely closed before you scan, or an error will occur and you will be unable to scan.

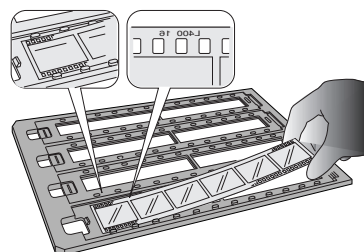
Loading 35mm film

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

1. Place the 35mm filmstrip guide on a flat surface and remove the cover from one of the strip holders.



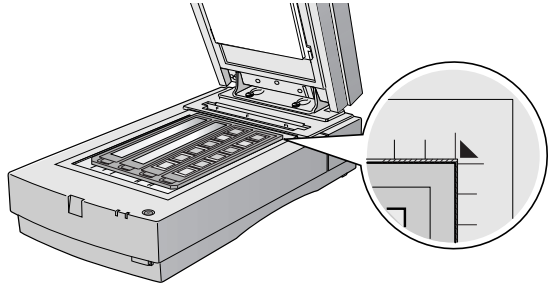
2. Insert a filmstrip in the holder with the shiny side face down and the film emulsion layer face up. Line up the sprocket holes on the filmstrip with the guide posts on the holder.
3. Replace the film cover and press down until it clicks.
4. Repeat steps 1 through 3 for all the film strips you scan.



5. Place the 35mm filmstrip guide on the document table, and align it with the ruled edges of the document table.
6. Close the TPU and begin scanning.

If you're using EPSON Scan, follow these guidelines:

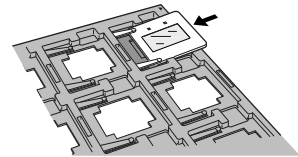
- Choose either **Home Mode** or **Professional Mode**.
- In Home Mode, choose the correct Document Type (**Color Negative Film**, **B&W Negative Film**, or **Positive Film**).
- In Professional Mode, select **Transparency** as your Document Type, then select the correct Film Type.



Loading 35mm slides

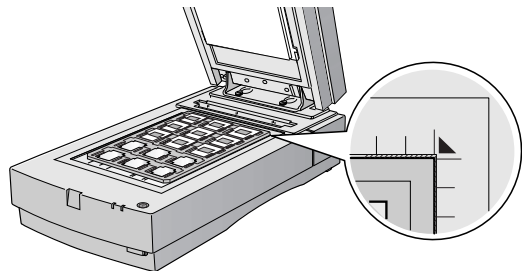
Follow these steps to load 35mm slides:

1. Load slides in the 35mm slide holder as shown. Make sure the glossy side of each slide faces down, and the film emulsion layer faces up.
2. Position the slide holder on the document table. Align the slide holder with the ruled edges of the document table.
3. Close the TPU and begin your scan.



If you're using EPSON Scan, follow these guidelines:

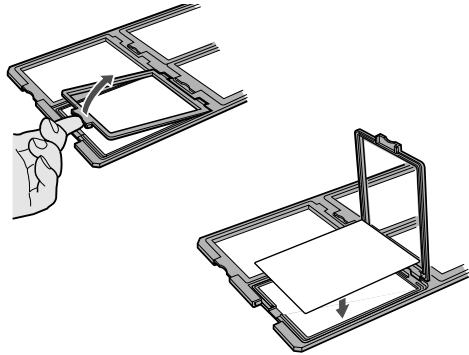
- Choose either **Home Mode** or **Professional Mode**.
- In Home Mode, choose **Positive Film** as your Document Type.
- In Professional Mode, choose **Transparency** as your Document Type and **Positive Film** the Film Type.



Loading 4 × 5-inch film

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

1. Place the 4 × 5-inch film guide on a flat surface and remove the cover from one of the film holders.
2. Insert the film in the film holder, making sure the glossy (smooth) side of the film faces down and the film emulsion layer faces up. Then close the cover.



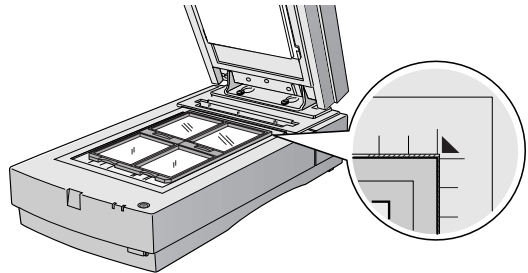
Note: Make sure that the film cover is completely closed, and that it holds the film taut without bowing. Bowing can cause distortions in the scanned image.

3. Repeat steps 1 and 2 for all the film you scan.
4. Place the 4 × 5-inch film guide on the document table. Align it with the ruled edges of the document table as shown.

5. Close the TPU and begin your scan.

If you're using EPSON Scan, follow these guidelines:

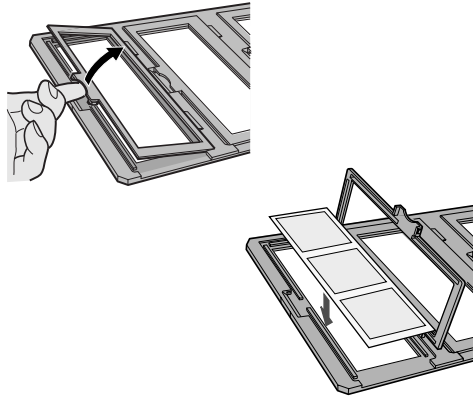
- Choose either **Home Mode** or **Professional Mode**.
- In Home Mode, choose the correct Document Type (**Positive Film**, **Color Negative Film**, or **B&W Negative Film**).
- In Professional Mode, select **Transparency** as your Document Type, then select the correct Film Type.



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

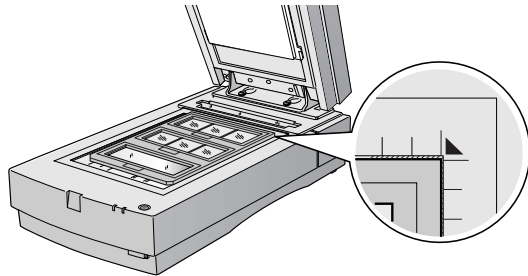
Follow these steps to load 120-size or 220-size format film:

1. Place the 120/220-size film guide on a flat surface and open the cover for one of the film holders.
2. Insert the film in the film holder, making sure the glossy (smooth) side of the film faces down, and the film emulsion layer faces up. Then close the cover.



Note: Make sure that the film cover is completely closed, and that it holds the film taut without bowing. Bowing can cause distortions in the scanned image.

3. Repeat steps 1 and 2 for all the film you scan.
4. Place the film guide on the document table. Align it with the ruled edges of the document table, as shown.
5. Close the TPU and begin your scan.



If you're using EPSON Scan, follow these guidelines:

- Choose either **Home Mode** or **Professional Mode**.
- In Home Mode, choose either **Positive Film**, **Color Negative Film** or **B&W Negative Film** as the Document Type.
- In Professional Mode, select **Transparency** as your Document Type, then select either **Positive Film**, **Color Negative Film** or **B&W Negative Film** as the Film Type.

Scanning Reflective Documents

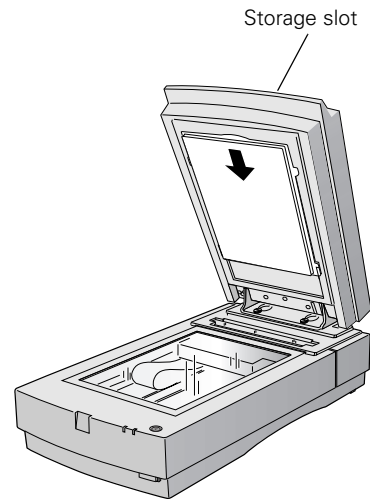
To scan reflective documents with the transparency unit installed, insert the reflective document mat included with the transparency unit.

1. If you've previously stored the reflective document mat, remove it from the transparency unit's storage slot.
2. Open the transparency unit. If there's a film guide on the document table, remove it.
3. Slide the mat into place, taking care to insert the tabs into the slots on the transparency unit.
4. Place your document face down on the document table and close the transparency unit.
5. Scan your document.

If you're using EPSON Scan, follow these guidelines:

- If you're scanning in Home Mode, choose the correct Document Type.
- In Professional Mode, select **Reflective** as your Document Type.

To remove the reflective document mat, slide it up and out of the slots on the transparency unit. For safe keeping, always store it in the transparency unit's storage slot.

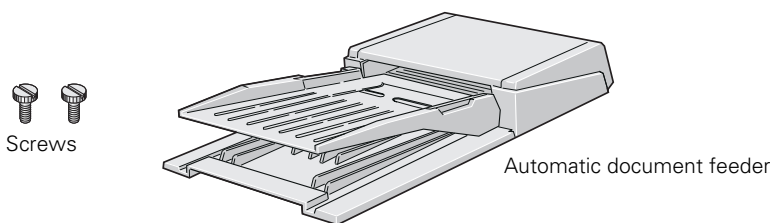


Automatic Document Feeder

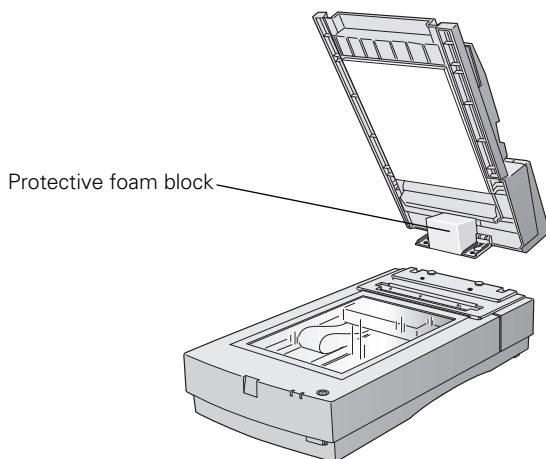
The automatic document feeder (B813162) allows you to load and scan documents of up to 30 pages.

Unpacking the Automatic Document Feeder

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



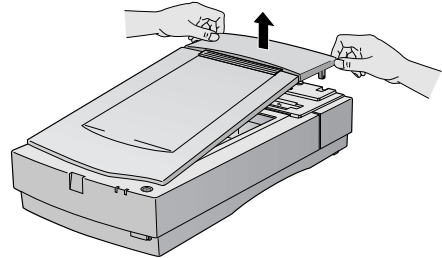
Caution: Don't remove the protective foam block from the automatic document feeder's mounting bracket until you've finished installing the unit.



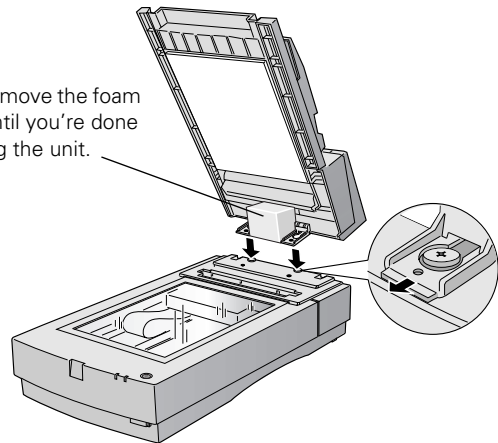
Installing the Automatic Document Feeder

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

1. Make sure your scanner is turned off.
2. Remove your scanner's document cover by grasping the back of the cover as shown and easing it straight up.
3. Make sure the document table is clean and dust free.
4. Position the automatic document feeder's mounting slots over the two mounting screws located at the back of the scanner.
5. Slide the automatic document feeder forward slightly until the two holes in front of these slots are aligned with the screw holes at the back of the scanner.

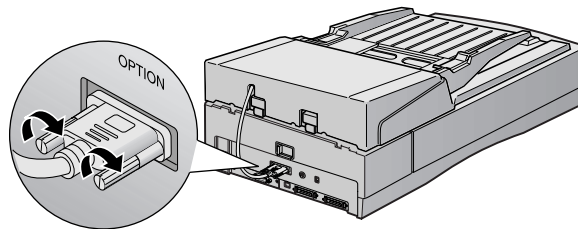
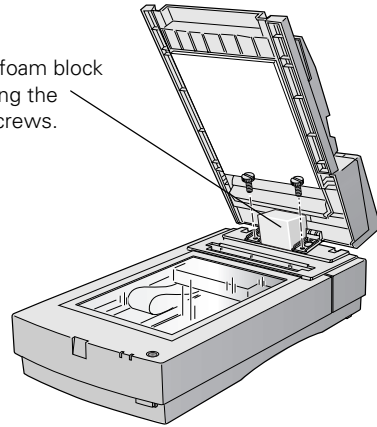


Don't remove the foam block until you're done installing the unit.



6. Insert the two installation screws that came with the automatic document feeder into the screw holes, then tighten the screws with a coin.
7. Remove the protective foam block from the automatic document feeder's mounting bracket, and then gently close the automatic document feeder.
8. Attach the automatic document feeder's cable to the scanner's **OPTION** connector. Tighten the screws.

Remove the foam block after tightening the installation screws.



9. Close the automatic document feeder.

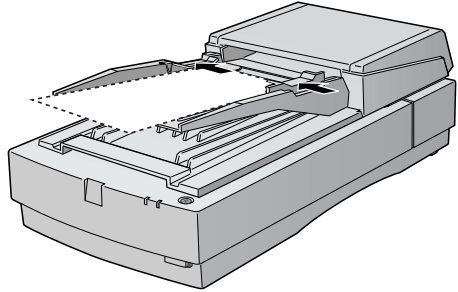
Loading Paper in the Automatic Document Feeder

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

Follow these steps to load paper:

1. Slide the automatic document feeder's left edge guide all the way to the left.
2. Insert your document face up in the automatic document feeder's tray.

Note: Don't push the paper into the feed path or the paper may jam.



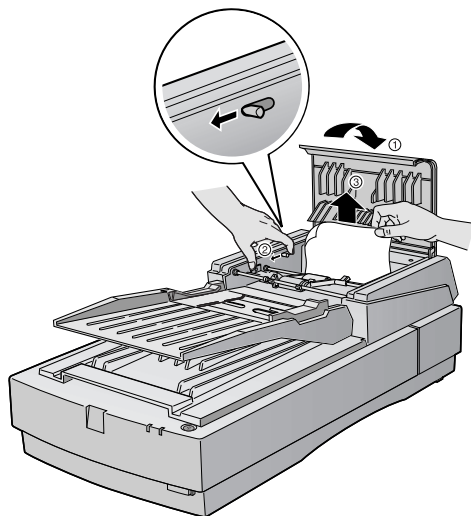
3. Move the right edge guide so it touches the right edge of your paper.
4. Scan your document. If you're using EPSON Scan, follow these guidelines:
 - Select either **Office Mode** or **Professional Mode** in the Mode box.
 - Select **ADF** as the Document Source.
 - If you want to scan only part of the document page, load the first page only. Click the **Preview** button. The first page is ejected. Adjust the marquee in the Preview area, then load your entire document. When you click **Scan**, the scanner scans the area defined by the marquee on each page.

Note: You can still load documents manually, if you want. Just lift the automatic document feeder and place the first sheet of your document face down on the document table. If you scan documents individually on the document table, select **Document Table** as the Document Source in EPSON Scan. Be sure to close the automatic document feeder before scanning. If you open it while scanning, you'll get an error.

Fixing Paper Jams

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

1. Open the automatic document feeder's cover to determine where the paper jam occurred.
2. Pull forward on the jam-release lever, and slowly pull the jammed paper out of the feeder mechanism. Be careful not to tear the paper.
3. After removing the jammed paper, close the document feeder cover. Make sure the **ERROR** light is off and the **READY** light isn't flashing before trying to scan.
4. If the error isn't cleared, turn your scanner off and then on again. Also, close EPSON Scan. Don't restart EPSON Scan until the green **READY** light stops flashing.



Note: If you attempt to preview or scan before the scanner is ready, EPSON Scan may stop responding. If this happens, restart your computer.

IEEE 1394 FireWire Scanner Interface Card

To use the IEEE 1394 FireWire scanner interface card (B808342), your system must have the following:

- Built-in IEEE 1394 FireWire port or IEEE 1394 FireWire PCI card (OHCI-compliant)
- Macintosh: OS 8.6 or later with FireWire Update 2.1 or later
- Windows: pre-installed version of Windows XP, 2000, or Me

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

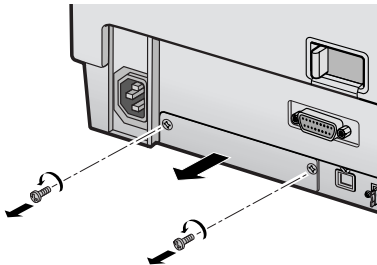
Note: If you have the Professional FireWire model of the Expression 1680, the card was preinstalled in your scanner.

Installing the Card in Your Scanner

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

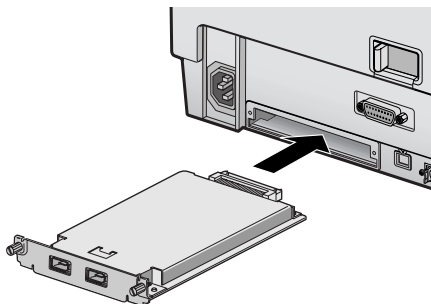
Caution: Static electricity can damage electronic components like the IEEE 1394 FireWire scanner interface card. To discharge static electricity, touch the scanner's metal frame before handling the card.

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



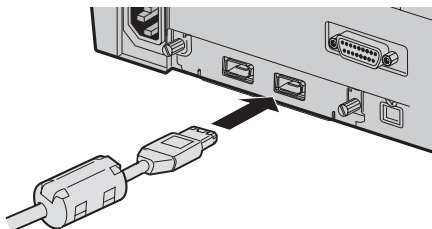
2. Turn the card over so that the component side is facing down, and insert it in the optional interface slot.
3. Push gently until the card is firmly seated.
4. Tighten the retaining screws and reconnect the scanner's cables.

Now you're ready to connect the scanner to your computer.



Connecting the Scanner to Your Computer

Plug one end of the IEEE 1394 cable into the IEEE 1394 port on the card, and the other end into an IEEE 1394 (FireWire) port on your computer.



Chapter 3

Maintenance

To protect your scanner and ensure optimum performance, follow the instructions in these sections:

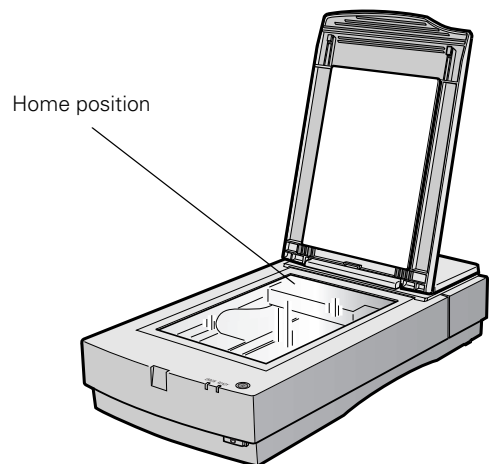
- Transporting the scanner
- Transporting the transparency unit
- Cleaning the scanner

Transporting the Scanner

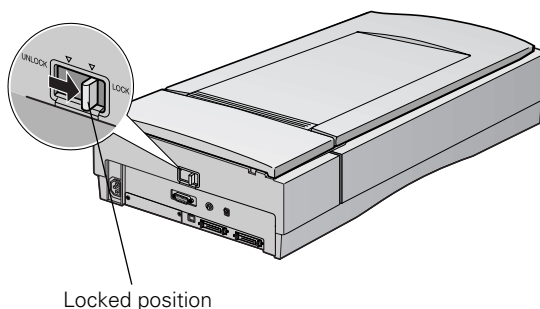
Always secure the carriage when you transport the scanner a long distance or store it for an extended time.

1. Make sure the transportation lock on the back of the scanner is in the **UNLOCK** position.
2. If you're using a transparency unit or automatic document feeder, remove it and replace the scanner cover.
3. Turn on the scanner and wait until the carriage moves to the home position, as shown. Then turn off the scanner.

Note: If the carriage doesn't automatically return to the home position, slowly raise the front of the scanner and let the carriage slide to the home position. The carriage won't move automatically to the home position if you have a transparency unit installed; you must remove the transparency unit first.



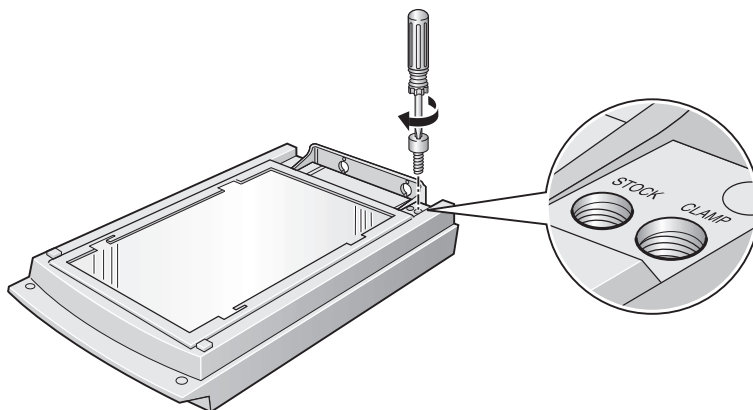
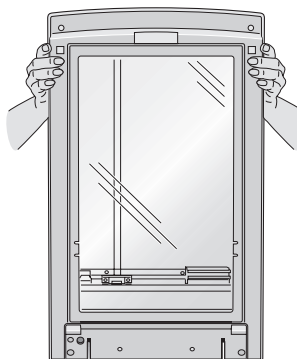
- Slide the transportation lock at the back of the scanner to the **LOCK** position.
- Tape the cover to the scanner.
- Use the scanner's original box, or a similar box with enough packaging material to prevent movement inside the box.



Transporting the Transparency Unit

If you have a transparency unit, prepare it for shipping as follows:


- Slowly raise the front of the transparency unit to allow the lamp assembly to slide to the back of the unit. Wait until the lamp assembly comes to rest.
- Reinstall the transparency unit's shipping screw in the hole marked **CLAMP**.



- Pack the transparency unit in its original box, or use a similar box with enough packaging material to prevent any movement inside the box.

Cleaning the Scanner

To keep your scanner operating at its best, clean it periodically.

1. Press the  power button to turn the scanner off, and unplug the power cord.
2. Use a soft, damp cloth and mild detergent to clean the outer case.

Caution: Don't let water get into the scanner.

3. Clean dust and smudges from the document table glass with a soft, dry cloth (a microfiber glass cleaning cloth is recommended). You can also use compressed air dust remover sprays. Dust on the glass can cause white spots to appear in your scanned image.

To remove grease, use pretreated lens/scanner wipes, or a small amount of glass cleaner on a soft cloth. Dry the document table glass afterwards.

4. Use a soft, dry cloth to remove dust from the narrow section of glass above the scanner's document table. If you're using a transparency unit, this area is used for white calibration before each scan.

Caution: Always unplug the scanner before cleaning.

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

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

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

Don't spray lubricants inside the scanner.

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

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

Chapter 4

Solving Problems

This chapter explains how to interpret the signals from your scanner's lights, and gives you the basics for diagnosing and solving scanner problems. It also tells you how to uninstall your software and how to contact EPSON.

See “Diagnosing Scanner Problems” in the next section to determine what the cause of your scanner problem might be. Then see these sections for solutions:

- Scanner Problems
- Software Problems
- Quality Problems
- Uninstalling and Reinstalling EPSON Scan
- Where To Get Help


Tip: It's a good idea to check EPSON's support web site periodically for possible updates to your scanner software. Visit <http://support.epson.com> and check the Drivers & Support section for your product to see if there is new software available, free of charge, for downloading to your computer. Download instructions are posted for your convenience.

Diagnosing Scanner Problems

You can diagnose some problems by checking the scanner's lights, as described in this section. If you don't find the answer here, see "Problems and Solutions" on page 41.

Checking the Scanner's Lights

Follow the guidelines below when you check your scanner's lights:

Light	Scanner Status
READY light is on or flashing.	The green READY light is on when the scanner is ready to scan. It flashes when scanning is in progress.
ERROR light is flashing; READY light is off.	There's a problem with your cable connection. Reconnect the cable to both the scanner and your computer, and then restart your computer. If this doesn't work, try using a different cable. If you have a USB connection, use the USB cable that came with your scanner. If you have a SCSI connection, always restart your computer after changing or reconnecting the cable.
ERROR and READY lights are both on.	The scanner has received an incorrect command from your scanning software. Try rescanning the document.
ERROR and READY lights are both off.	<p>Make sure your scanner is connected to a working outlet, then press the  power button. Restart your computer.</p> <p>If the green READY light doesn't come on, there may be a problem with either the transparency unit or automatic document feeder. Make sure your unit lies flat against the scanner. Then reconnect it to the OPTION connector on the back of the scanner. If you have a transparency unit, make sure you removed the shipping screw from the hole labeled CLAMP. Make sure your automatic document feeder has paper and there's no paper jam.</p>
ERROR and READY lights are both flashing.	Check that the transportation lock on the back of the scanner is set to UNLOCK . If not, unlock the scanner, then turn it off and back on again. Restart your computer. If this doesn't solve the problem, contact EPSON as described on page 51.

Problems and Solutions

Here are some troubleshooting tips if you're having trouble setting up your scanner, scanning, or getting the quality you want from your scans.

Scanner Problems

The READY light doesn't come on or flashes.

- The READY light flashes when scanning is in progress. If you are scanning a large file, wait for scanning to finish.
- Make sure the scanner power cord is securely plugged into the scanner and the power outlet, and that the scanner is on. If the scanner was unplugged or off, restart your computer before trying to scan.
- Check that the power outlet is working and provides sufficient power for the scanner.
- If you're using a transparency unit or automatic document feeder and both the READY and ERROR lights are off, make sure your installed option is closed (lying flat against the scanner). Reconnect your unit to the OPTION connector on the back of the scanner.
- Make sure your automatic document feeder isn't out of paper and doesn't have a paper jam.
- Make sure you removed the shipping screw from the hole labeled **CLAMP** in your transparency unit.
- Make sure the SCSI ID is set between 1 and 6. If you reset the SCSI ID switch on the back of the scanner, turn the scanner off and then on again. Then restart your computer.

You see an error message that there is no response from the scanner, or that you can't start EPSON Scan.

- Check your cable connections. If your cable is securely connected to both the scanner and computer, try another cable, then restart your computer.
- Make sure your scanner is on. If it was off, turn the scanner on first, then restart your computer before you try to scan.

- If you have a USB connection, use the cable that came with the scanner. If your scanner is connected to a USB hub, connect it directly to the computer's USB port.
- If you have a SCSI connection, turn off both your scanner and computer. Then turn on your scanner before you turn on the computer.
- If you have a SCSI connection, make sure your SCSI board is installed correctly. For Windows, check the Device Manager to make sure the SCSI board is listed.
- If the SCSI board is found, but not the scanner, check the terminator switch and SCSI ID switch on the back of the scanner. Make sure the SCSI ID doesn't conflict with another SCSI device. Unless the scanner is in the middle of a SCSI chain, the terminator switch should be set to **ON**.
- If you've replaced your SCSI board or changed the SCSI ID, you may need to uninstall and reinstall your scanner software. See the instructions beginning on page 49.
- Check for IRQ conflicts with built-in options.
- Mac OS 8.6 to 9.x users: if you have an IEEE 1394 FireWire connection, make sure the following Extensions are enabled in the Extensions Manager: **EPSON FW Scanner Enabler**, **EPSON FW Scanner Expert**, and **EPSON FW ScannerLib**.
- If you purchased the IEEE 1394 scanner interface card as an option, make sure that it is installed correctly. (See page 33.)
- If all else fails, uninstall and reinstall your software. See the instructions for uninstalling software beginning on page 49.

The scanner doesn't scan your image.

- Make sure the scanner is ready to scan. Wait until the **READY** light stops flashing and remains on.

If you attempt to preview or scan before the scanner is ready, EPSON Scan may stop responding. If this happens, restart your computer.

- Make sure the scanner's transportation lock is in the **UNLOCK** position.
- Windows users: check the Device Manager in the Windows Control Panel. If there is an **Unknown Device** icon, select it and click **Remove**.

- If you're using photo-editing software like Adobe Photoshop or Photoshop Elements, make sure you select **File > Import > EPSON Expression 1680** as your source. If you're using the SilverFast Plug-in with a program like Photoshop, select **File > Import > SilverFast (Epson Expr 1680)**.
- Make sure the SCSI ID switch on the back of the scanner is not set to the asterisk (*), and that it's set to a number that doesn't conflict with any other SCSI devices. If you reset the SCSI ID switch, turn the scanner off and then on again. Then restart your computer.
- Make sure you have enough memory to scan your image. If you're scanning a large image or scanning at a high resolution, close any unnecessary programs. For Mac OS 8.6 to 9.x, try increasing the memory of the host application. If your computer still doesn't have enough memory to process the image, try scanning at a lower resolution, or select part of the image to scan. If you still cannot scan, you may need to upgrade your RAM.
- If you have a ZIP drive, it may be interfering with your scanner. Disconnect your ZIP drive, restart your computer, then try scanning.

- If you're using the optional automatic document feeder, run EPSON Scan in Office Mode or Professional Mode, and select ADF as the Document Source. Also, make sure the original document is inserted face up.

When previewing a scan, you see a message that the document could not be located.

Make sure you've selected the correct Document Type in EPSON Scan.

Software Problems

EPSON Scan doesn't work properly.

- Make sure the system requirements are correct for your software. See the requirements beginning on page 57.
- Check your computer's memory. If you're running other software at the same time, using RAM resident programs, or have many device drivers, the computer may not have enough memory. (See your software and computer manuals.) If you're scanning a large image or scanning at a high resolution, your computer may not have enough memory to process the image.

- Check your software installation. Make sure that your software is correctly installed and set up. If all else fails, uninstall your software, then reinstall it.

You can't select ADF as the Document Source (Office Mode or Professional Mode).

Make sure the optional automatic document feeder is installed correctly and securely connected to the **OPTION** connector on the back of the scanner. If you need to reinstall or reconnect it, restart your computer afterward.

You can't select the correct Document Type for your film or slides.

Make sure the transparency unit is installed correctly and securely connected to the **OPTION** connector on the back of the scanner. If you need to reinstall or reconnect it, restart your computer afterward.

Quality Problems




The file size is too big.

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



Your scanned image is faint or has gaps.

- Check the brightness. Decrease the software or driver's brightness setting.
- Select **Professional Mode** and experiment with the  Image Adjustment setting.
- Check the condition of your original. If the document is damaged, dirty, or wrinkled, these imperfections will show up in your scan.
- Make sure the document is placed flat against the document table.



Your scanned image is blurred or distorted.

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



The edges of the document aren't scanned.

- Don't place your document right up against the edges of the document table. Allow a little space (about 2 mm).
- If colors are patchy or distorted at the edges of the image, the document may be too thick, or there may be outside light interfering with the scan.



Your image scans at an angle.

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

Straight lines in the image come out jagged.

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

A line of dots is missing from the image.

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

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

- Experiment with the Unsharp Mask Filter setting in EPSON Scan (not available in Home Mode).
- Make sure the Image Type setting is correct.
- Try different combinations of gamma and color settings in EPSON Scan. Click the Configuration button at the bottom of the window, then make any changes on the Color tab.

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

- Make the image size slightly smaller.
- In EPSON Scan, select the Descreening Filter checkbox in Home Mode or the Unsharp Mask checkbox in Professional or Office Mode.
- Use a transparent sheet between the document and the document table to defocus the image.
- Reposition the document on the document table. Try positioning the document at a slight angle.

The printed image is larger or smaller than the original.

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

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

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

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

- Make sure the document is face down on the document table.
- If you're using an automatic document feeder, make sure the original document is inserted face up.

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

- Make sure you've selected the correct Document Type in EPSON Scan.

- The scanner perceives the film guide's frame as white, which alters the exposure of the scanning area and makes the preview appear darker. To see the correct colors, do a zoom preview on an area toward the center of an image.
- If you see light vertical lines on the scanned image, the TPU calibration area (the small rectangle of glass above the document table) may contain dirt or dust. Clean the calibration area with a lint-free cloth.

Uninstalling and Reinstalling EPSON Scan

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


Follow the procedure below for uninstalling EPSON Scan on your system.

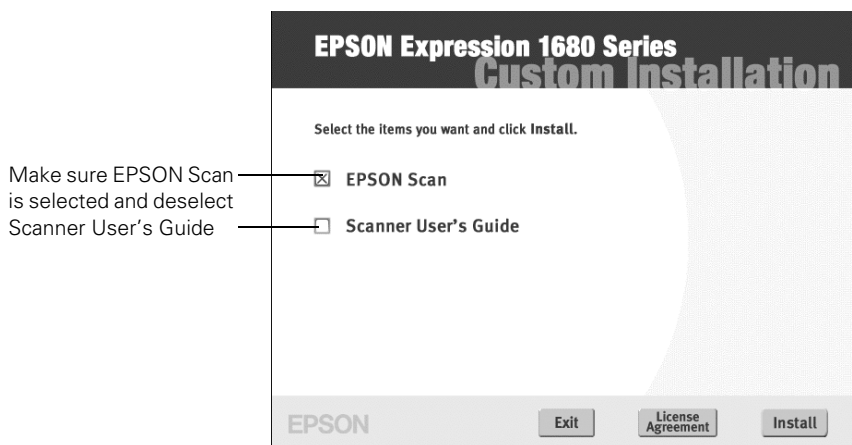
Windows

1. Double-click the Add or Remove Programs utility in the Windows Control Panel.
2. Select EPSON Scan, and click the **Change/Remove** (or **Add/Remove**) button.
3. Follow the on-screen instructions to remove the software.

See the *Start Here* sheet to reinstall your software.

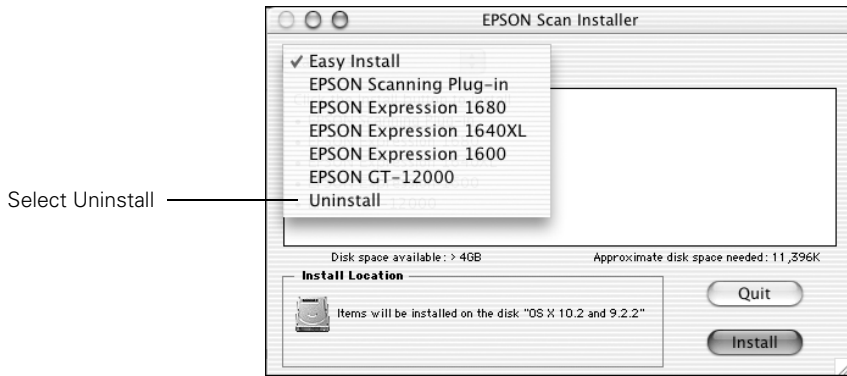
Macintosh

1. Insert the EPSON Expression 1680 CD-ROM in your drive. If necessary, double-click the CD-ROM icon to open the EPSON window.
2. Double-click . You see this screen:



3. Make sure that EPSON Scan is selected. If you don't want to uninstall the *User's Guide*, deselect the **Scanner User's Guide** checkbox.
4. Click **Install**.

5. If you're running OS X, enter your Administrator's name and password, if prompted.
6. When you see the license agreement, click **Accept**. You see this screen:



7. Select **Uninstall** from the Easy Install list. Then click **Uninstall**.
8. Follow the on-screen instructions to uninstall the software. When you're done, click **Quit** to close the EPSON Scan Installer screen.

See the *Start Here* sheet to reinstall your software.

Where To Get Help

If you are having problems with EPSON Scan or your scanner, see the contact information in the section below. If you have the Professional or Professional FireWire model of the scanner and are having problems with your bonus software, see page 52.

EPSON Technical Support

EPSON provides technical assistance 24 hours a day through the electronic support services and automated telephone services listed in the following table:

Service	Access
World Wide Web	From the Internet, you can reach EPSON Support at http://support.epson.com . At this site, you can download drivers and other files, look at product documentation, access troubleshooting information, and receive technical advice through e-mail.
Automated Telephone Services	A variety of automated help services are available 24 hours a day, seven days a week. To use these services, you must have a touch tone telephone and call (800) 922-8911 . Your EPSON SoundAdvice SM Express Code is 68720. Use it to select your scanner in SoundAdvice.

To speak to a technical support representative, dial (562) 276-4382 (U.S.) or (905) 709-3839 (Canada), 6 AM to 6 PM, Pacific Time, Monday through Friday. Toll or long distance charges may apply.

Before you call, please have the following information ready:

- Product name (EPSON Expression 1680)
- Product serial number (located on the back of scanner)
- Proof of purchase (such as a store receipt) and date of purchase
- Computer configuration
- Description of the problem

You can purchase supplies and accessories from the EPSON Store at (800) 873-7766, or visit www.epsonstore.com (U.S. sales only). In Canada, please call (800) 463-7766 for dealer referral.

Software Technical Support

If you have the Professional or Professional FireWire model, use the resources listed in the following table for help with your bonus software:

Software	Telephone	Fax	Online and E-mail
Adobe Photoshop Elements	(206) 675-6126 6:00 AM to 5:00 PM, Pacific Time, Monday through Friday (pay support)	—	www.adobe.com/support techdocs@adobe.com
LaserSoft Imaging SilverFast	(941) 383-7496 9:00 AM to 5:30 PM, Eastern Time, Monday through Friday (pay support)	(941) 387-7574	www.SilverFast.com support@SilverFast.com
Monaco Systems™ MonacoEZcolor	(978) 749-9944 9:00 AM to 5:00 PM, Eastern Time, Monday through Friday	—	www.monacosys.com/ support.html support@monacosys.com
ArcSoft™ Software Suite	(510) 440-9901 8:30 AM to 5:30 PM, Pacific Time, Monday through Friday	—	www.arcsoft.com/ techmain.htm support@arcsoft.com

Appendix A

Specifications

Scanner

General

Scanner type

Flatbed, color

Photoelectric device

Color MatrixCCD™ line sensor

Effective pixels

13600 × 18720 pixels (1600 dpi)

Optical density

3.6 Dmax

Color depth

48-bit internal/48-bit external

Grayscale depth

16-bit internal/16-bit external

Maximum document size

8.5 × 11.7 inches (216 × 297 mm)
A4 or Letter (the reading area can be
specified from your software)

Resolution

1600 dpi (optical)

Maximum hardware resolution*

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

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

Maximum interpolated resolution

12800 × 12800 dpi

Speed (1600 dpi, draft mode)

Color: 9.2 msec/line (approx.)

Grayscale: 3.1 msec/line (approx.)

Line Art: 3.1 msec/line (approx.)

Color separation

RGB color filters on CCD

Reading sequence

Monochrome: One-pass scanning

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

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

Zoom

50 to 200% in 1% increments

Command level

ESC/I-B8

FS

Pixel depth

16 bits per pixel (16 bits per pixel
input, 1 to 16 bits per pixel output)

Brightness

7 levels

Line art settings

Fixed threshold

TET (Text Enhancement Technology,
enable/disable selectable)

Digital halftoning

AAS (Auto Area Segmentation, enable/disable selectable)
3 error diffusion modes (A, B, and C)
4 dither patterns (A, B, C, and D) for bi-level and quad-level data
(2 downloadable dither patterns)

Gamma correction

2 types for CRT display
3 types for printer
1 type user-defined

Color correction

1 type for CRT display
3 types for printer (available in color byte sequence mode and color line sequence mode)
1 type user-defined

Interfaces

SCSI 2 (micro DB 50-pin connectors)
USB (Type B receptacle connector)
IEEE 1394 (FireWire), optional

Light source

Xenon gas cold cathode fluorescent lamp

Reliability

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

Dimensions

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

Weight

Approximately 18.7 lb (8.5 kg)

Electrical

Input voltage range

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

Rated frequency

50 to 60 Hz

Rated current

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

Power consumption

Operating: Approximately 30 W
Approximately 50 W with TPU or ADF unit
Standby: Approximately 10 W

Environmental

Temperature

Operating: 41 to 95 °F (5 to 35 °C)
50 to 89 °F (10 to 32 °C when using ADF)
Storage: -13 to 140 °F
(-25 to 60 °C)

Humidity (without condensation)

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

Operating conditions

Ordinary office or home conditions.
Avoid dust, direct sunlight, and proximity to strong light sources.

Safety Approvals

120 V model

Safety: UL 1950
CSA C22.2 No. 950
EMC FCC part 15 subpart B class B
CSA C108.8 class B

230 V model

Safety: EN 60950
EMC: EN 550022
(CISPR Pub 22) class B
AS/NZS 3548 class B

SCSI Interface

Interface type

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

Logic level

TTL-compatible

ID setting

Selectable from 1 to 6

Terminator

Internal terminator (enable/disable
selectable)

Connector type

Two micro DB 50-pin connectors

USB Interface

Interface type

Universal Serial Bus Specification
Revision 1.1

Electrical standard

Full speed mode (12Mb) of Universal
Serial Bus Specification Revision 1.1

Connector type

One receptacle (Type B)

IEEE 1394 FireWire

Interface type

IEEE 1394-1995 compatible

Data transfer method

Half-duplex Data/Strobe differential
serial

Synchronization method

Clock synchronization with DS-Link

Encoding/decoding

DS-Link

Logic level

3.3 V

Compatible connectors

IEEE 1394-1995 compatible

Power class

Power class code 100

No power supply from external sources

Fitted with a repeat function with bus
power

Environmental

Temperature

Operating: 41 to 95 °F
(5 to 35 °C)

Standby: -13 to 140 °F
(-25 to 60 °C)

Humidity (without condensation)

Operating: 10 to 80%

Standby: 10 to 85%

Option Interface Connector

Interface type

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

Output voltage

21.6 to 26.4 VDC

4.75 to 5.25 VDC

Output current

0.6 A (24 V)

0.3 A (5 V)

Initialization Methods

SCSI interface

Hardware: Initialized when the scanner
is turned on or the scanner
receives a SCSI Reset signal
from the SCSI interface

Software: Initialized when the
software sends the Esc @
(initialize the scanner
command), or the scanner
receives a SCSI Bus Device
message

USB interface

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

Transparency Unit (B813182)

General

Reliability

MCBF 100,000 cycles

Readable area

8.5 × 11.7 inches (216 × 297 mm)

Dimensions

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

Weight

Approximately 11 lb (6 kg)

Electrical

Input voltage

21.6 to 26.4 VDC
4.7 to 5.25 VDC

Rated current

1.6 A
0.1 A

Environmental

Temperature

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

Humidity (without condensation)

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

Automatic Document Feeder (B813162)

General

Paper input/output

Load face up; eject face down

Paper quantity

30 pages (55 g/m² paper, maximum total thickness under 0.24 inches [6 mm])

Reliability

100,000 sheets (load/eject MCBF)

Dimensions

Width: 12.2 inches (310 mm)
Depth: 20.9 inches (528 mm)
Height: 3.6 inches (92 mm)

Weight

Approximately 9.9 lb (4.5 kg)

Electrical

Input voltage

22.8 to 25.2 VDC
4.75 to 5.25 VDC

Input current

24 V: 0.6 A
5 V: 0.3 A

Environmental

Temperature

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

Humidity (without condensation)

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

Appendix B

Requirements and Notices

System Requirements

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

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

Windows

- A Microsoft® Windows-compatible PC with a Pentium®-equivalent processor, 233 MHz or faster recommended
- Preinstalled Windows XP, 98, Me, or 2000
- SCSI, USB, or FireWire IEEE 1394 (Windows XP, Me, or 2000 only) port; FireWire card must be OHCI-compliant
- 128MB RAM (256MB RAM recommended for all systems)
- 300MB available hard disk space
- CD-ROM drive
- VGA color monitor with 640 × 480 resolution (a color monitor with a resolution of 800 × 600 or higher recommended)
- 16-bit, 65K-color display adapter card (24-bit display adapter card with millions of colors recommended)

Macintosh

- Macintosh OS 8.6 to 9.x, or OS 10.1.2 to 10.2.x

Note: Check the Apple® web site for any updates to your operating system.

- Macintosh standard (built-in) SCSI or compatible PCI SCSI/SCSI 2 card, or USB interface; for IEEE 1394 FireWire connections, either a built-in IEEE 1394 FireWire port or an IEEE 1394 FireWire PCI card (FireWire card must be OHCI-compliant)
- 128MB RAM (256MB RAM recommended)
- 300MB available hard disk space
- CD-ROM drive
- VGA color monitor with 640 × 480 screen resolution (a color monitor with a resolution of 800 × 600 or higher recommended)
- 16-bit 65K-color display adapter card (24-bit display adapter card with millions of colors recommended)

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

Declaration of Conformity

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

We: EPSON AMERICA, INC.

Located at: MS 3-13
3840 Kilroy Airport Way
Long Beach, CA 90806-2469
Telephone: (562) 290-5254

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

Trade Name: EPSON
Type of Product: Image Scanner
Model: G780B
Product: EPSON Expression 1680

FCC Compliance Statement

For United States Users

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

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

Warning

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

For Canadian Users

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

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

ENERGY STAR Compliance

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



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

Warranty

Epson America, Inc. Limited Warranty

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

What EPSON Will Do To Correct Problems: Should your EPSON product prove defective during the warranty period, please bring the product securely packaged in its original container or an equivalent to your EPSON Dealer or EPSON Customer Care Center. You are responsible for all costs (shipping, insurance, travel time) in getting the product to the service location. EPSON will, at its option, repair or replace on an exchange basis the defective unit, without charge for parts or labor. When warranty service involves the exchange of the product or of a part, the item replaced becomes EPSON property. The replacement unit may be new or refurbished to the Epson standard of quality, and at Epson's option, the replacement may be another model of like kind and quality. Epson's liability for replacement of the covered product will not exceed the original retail selling price of the covered product. Exchange or replacement products or parts assume the remaining warranty period of the product covered by this limited warranty.

What This Warranty Does Not Cover: This warranty covers only normal use in the United States and Canada. This warranty does not cover damage to the EPSON product caused by parts or supplies not manufactured, distributed or certified by EPSON. This warranty does not cover third party parts, components or peripheral devices added to the EPSON product after its shipment from EPSON, e.g., dealer-added boards, chips or drives. This warranty is not transferable and will not apply to products

purchased from an end user. EPSON is not responsible for warranty service should the EPSON label or logo or the rating label or serial number be removed or should the product fail to be properly maintained or fail to function properly as a result of misuse, abuse, improper installation, neglect, improper shipping, damage caused by disasters such as fire, flood, and lightning, improper electrical current, software problems, interaction with non-EPSON products, or service other than by an EPSON Authorized Servicer. If a claimed defect cannot be identified or reproduced in service, you will be held responsible for costs incurred.

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

In Canada, warranties include both warranties and conditions.

Some jurisdictions do not allow limitations on how long an implied warranty lasts and some jurisdictions do not allow certain exclusions or limitations on damages, so the above limitations and exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from jurisdiction to jurisdiction.

To locate the EPSON Authorized Reseller or EPSON Customer Care Center nearest you call: (800) 922-8911 or write to: Epson America, Inc., P.O. Box 93012, Long Beach, CA 90809-3012.

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