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EX100 Multimedia Projector

User's Guide



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THE TRUSTED SOURCE FOR PROJECTOR LAMPS AND ACCESSORIES

Important Safety Information

WARNING: Never look into the projector lens when the lamp is turned on; the bright light can damage your eyes. Never let children look into the lens when it is on. Never open any cover on the projector, except the lamp and filter covers. Dangerous electrical voltages inside the projector can severely injure you. Except as specifically explained in this *User's Guide*, do not attempt to service this product yourself. Refer all servicing to qualified service personnel.

WARNING: The projector and its accessories come packaged in plastic bags. Keep plastic bags away from small children to avoid any risk of suffocation.

Caution: When you replace the lamp, never touch the new lamp with your bare hands; the invisible residue left by the oil on your hands may shorten the lamp life. Use a cloth or glove to handle the new lamp.

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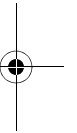
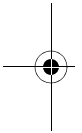
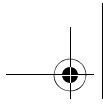
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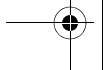
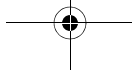
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W

Welcome

The EX100 is an easy-to-use projector that weighs less than 4 pounds (1.8 kilograms) and offers up to 2700 lumens of white and color light output (brightness). You can connect it to a wide range of computers and video sources.

Easy setup, control, and security:

- 5-second startup time and Instant Off[®] feature for fast setup and shut down
- Automatic digital keystone correction
- 1.2x optical zoom lens for flexible placement and positioning
- Security features include password, user's logo, and the ability to lock the projector buttons
- A/V mute slide to block the lens and save lamp life when you want to temporarily stop projecting



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Using Your Documentation

This book contains all the information you need to set up and use your projector. Please follow these guidelines as you read through it:

- Warnings must be followed carefully to avoid bodily injury.
- Cautions must be observed to avoid damage to your equipment.
- Notes contain important information about your projector.
- Tips contain additional projection hints.

Getting More Information

Need tips on giving presentations? Quick steps for setting up your projector? Here's where you can look for help:

- **Quick Setup sheet**
Gives you the instructions you need to get your projector up and running if you are connecting to a notebook, MacBook®, PowerBook®, or iBook® computer.
- **Projector kit**
Includes this *User's Guide*, your *Quick Setup* sheet, warranty brochures, and Epson PrivateLine® Support card. Keep the kit with your projector at all times.
- **Built-in help system**
Provides assistance for common problems. Available from the **Help** button on the projector or the remote control. See page 68 for details.
- **epson.com/support**
Download FAQs and e-mail your questions to Epson support.
- If you still need help after checking this *User's Guide* and the sources listed above, you can use the Epson PrivateLine Support service to get help fast. Call (800) 637-7661 and enter the PIN on the PrivateLine card. Or take advantage of Epson's automated support services 24 hours a day. See page 78 for more information.

- **presentersonline.com**
Includes a library of articles covering presentation tips, tricks, and technology. The site provides templates, clip art and sound clips, as well as Presenters Services to use on the road. Even more resources and services are available if you register to join the Presenters Club—and it's free.

Registration and Warranty

Your projector comes with a basic carry-in 2-year and 90-day lamp warranty. For details, see the warranty brochure included with your projector.

In addition, Epson offers free Extra CareSM Road Service. In the unlikely event of an equipment failure, you won't have to wait for your unit to be repaired. Instead, Epson will ship you a replacement unit anywhere in the United States or Canada, usually via overnight delivery. See the Extra Care Road Service brochure for details.

To register, simply fill out the registration card and mail it to Epson. Or register your product online using the projector CD or at this site: <http://www.epson.com/webreg>. Registering also lets you receive special updates on new accessories, products, and service.



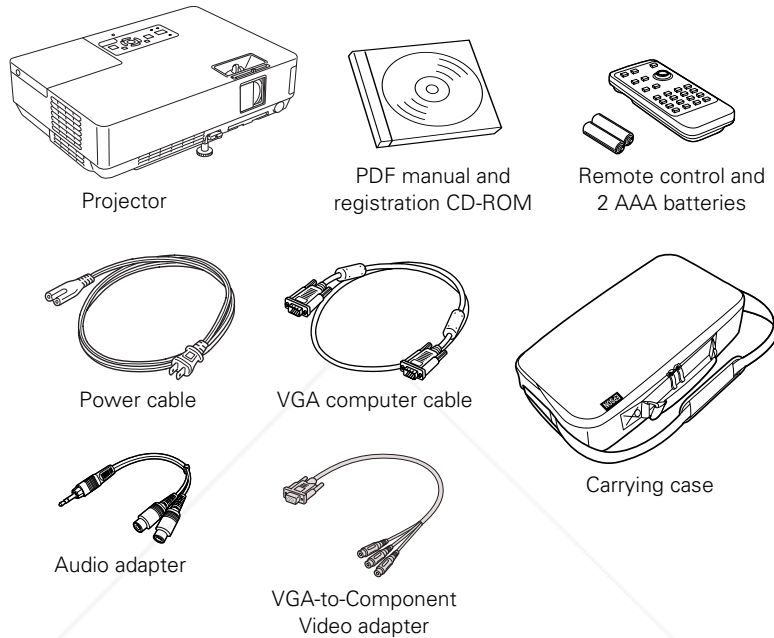
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Unpacking the Projector

After unpacking the projector, make sure you have all the parts shown below:



Save all packaging in case you need to ship the projector. Always use the original packaging (or the equivalent) when you need to send the projector to another location. If you are moving the projector by hand, use the carrying case. See page 11 for ordering information, and page 66 for transportation instructions.

Additional Components

Depending on how you plan to use the projector, you may need additional components:

- To receive an S-Video signal, you'll need an S-Video cable. One may be provided with your video equipment, or you can purchase one from Epson; see below.
- To receive a component video signal from a VCR or other video device, you'll need the VGA-to-Component Video adapter

included with your projector and a component video cable. Or you can use a VGA-to-Component Video cable. You can purchase one from Epson; see below.

Optional Accessories

To enhance your use of the projector, Epson provides the following optional accessories:

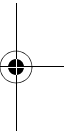
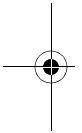
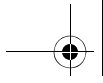
Product	Part number
Replacement lamp	V13H010L38
Air filter replacement set (2 filters)	V13H13408
Soft carrying case	143664
Simple soft carrying case	V12H001K60
Swiss Gear® backpack	ELPKS63
Wheeled soft case	ELPKS62
Soft shoulder case for projector and laptop	ELPKS61
ATA molded hardshell case	ELPKS58
Universal ceiling mount	ELPMBPJF
Advanced projector ceiling mount with precision gear	ELPMBPRG
High security projector ceiling mount	ELPMBATA
Adjustable suspended ceiling channel kit	ELPMBP01
False ceiling plate kit	ELPMBP02
Structural round ceiling plate	ELPMBP03
Adjustable extension column (pipe) 8"-11"	ELPMBC01
Kensington® security lock	ELPSL01
Duet™ portable projector screen	ELPSC80
50-inch portable screen (4:3 aspect ratio)	ELPSC06
60-inch portable pop-up screen (4:3 aspect ratio)	ELPSC07
80-inch portable pop-up screen (4:3 aspect ratio)	ELPSC08
VGA-to-Component Video cable	ELPKC19
S-Video cable	ELPSV01
Distribution amplifier	ELPDA01
Image presentation camera (ELPDC05)	V12H162020
DC-10s Document Camera	ELPDC10S

You can purchase screens, carrying cases, or other accessories from an Epson authorized reseller. To find the nearest reseller, call 800-GO-EPSON (800-463-7766). Or you can purchase online at www.epsonstore.com (U.S. sales) or www.epson.ca (Canadian sales).



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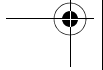
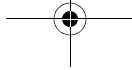


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1 *Displaying and Adjusting the Image*

Whether you're presenting from a computer or video equipment, you need to follow some basic steps to display your image on the screen.

Follow the guidelines in this chapter for:

- Positioning the projector
- Turning the projector on and selecting the image source
- Troubleshooting display problems
- Adjusting the image
- Turning off the projector

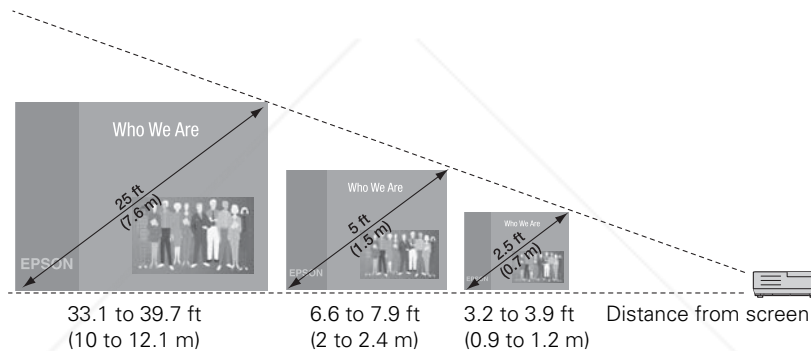
note

You can mount the projector on the ceiling, or place it behind a translucent screen for rear projection. See page 81 for details.

Positioning the Projector

If the projector isn't already installed in the room you're using, you'll probably want to place it on a table in front of the screen, as shown. This lets you stand in the front of the room, face the audience, and remain close enough to the equipment to be able to control it. Try to leave as much space as possible between the projector and the screen to get a good-size image.

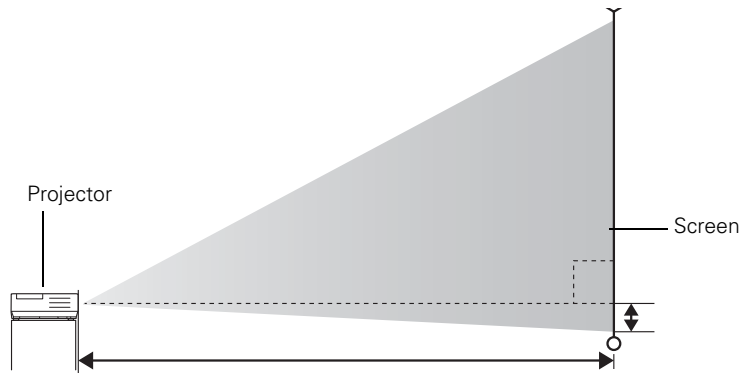
Use the figure below to help you determine placement. Image size increases with distance, but can vary depending on how you position the zoom ring and whether you've adjusted the image with other settings.



Also keep these considerations in mind:

- Place the projector on a sturdy, level surface.
- Make sure there is plenty of space for ventilation around and under the projector. Do not set the projector on top of anything that could block the vents under the projector.
- Make sure the projector is within 10 feet (3 meters) of a grounded electrical outlet or extension cord.

Ideally, you should place the projector directly in front of the center of the screen, facing it toward the screen squarely. The base of the lens should be at about the level of the bottom of the screen.



If you place the projector below screen level, you'll have to tilt it up by extending the front adjustable foot. This causes the image to become "keystone" shaped, but you can correct the distortion by pressing the buttons on the projector. See page 21 for detailed information about correcting the image shape.

For instructions on installing the projector in a permanent location, such as a theater or conference room, see page 81.

note

After positioning the projector, you may want to connect a Kensington MicroSaver® anti-theft device to the lock port on the projector. You can purchase this from Epson; see page 11.

Projecting the Image

Make sure your projector and other equipment are set up as described on page 33. Then follow the instructions below to start the projector and display an image.

Turning On the Projector

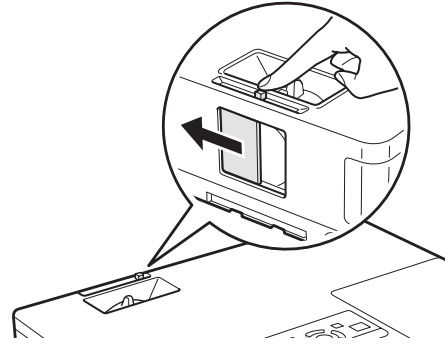
Turn on any connected computer or video equipment before starting the projector so it can automatically detect and display the image source. If you turn on the projector first, or have multiple pieces of connected equipment, you may have to select the image source manually (see page 17).

note

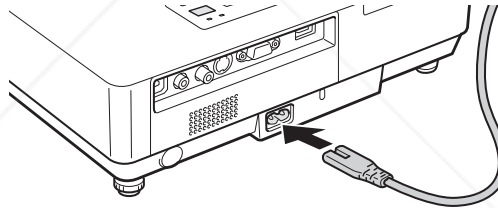
To shut down the projector, see page 23. Shutting down the projector correctly prevents premature lamp failure and possible damage from overheating.

Follow these steps to turn on the projector:

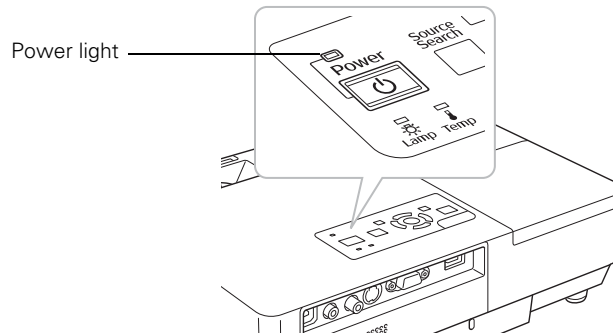
1. Open the A/V Mute slide (lens cover).



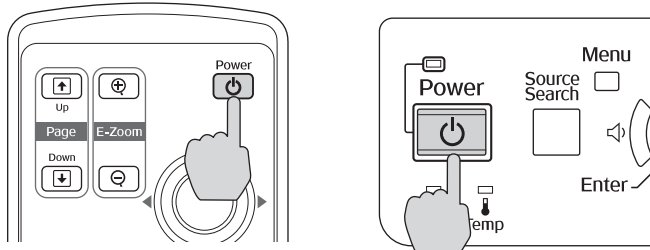
2. Plug one end of the power cable into the projector, and the other end into an electrical outlet.



The Power light turns orange.



3. Press the red **Power** button on the remote control or on top of the projector.



The projector beeps once and the **Power** light flashes green as the projector warms up, then an image begins to appear. When the **Power** light stops flashing and remains green, the projector is ready for use.

4. If you've connected a Windows®-based computer to the projector, you may see a New Hardware Wizard screen saying your computer has found a plug-and-play monitor; if so, click **Cancel**.
5. If you are prompted to enter a password, see page 51.

Selecting the Image Source

Selecting the image source lets you switch between images input from different pieces of connected equipment (such as a computer or DVD player).

If you don't see the image you want, press the **Source Search** button on the projector or the **Search** button on the remote control until you see the image you want to project.

You can also use the **Source** buttons on the remote control to switch between devices connected to the ports identified on each button. (The EX100 does not support EasyMP®.)

warning

Never look into the lens when the lamp is on. This can damage your eyes, and is especially dangerous for children.

note


To focus and adjust the image, see page 20. If a projected image fails to appear, see page 18 for help.

Troubleshooting Display Problems

Follow these guidelines if you're having trouble displaying an image.

You Can't Project an Image


If you don't see the image you are trying to project, try the following:

- Make sure the cables are connected correctly, as described beginning on page 33.
- Make sure the **Power** light is green and not flashing and the A/V Mute slide is open.
- If you've connected more than one computer and/or video source, you may need to press the **Source Search** button on the projector's control panel or **Search** button on the remote control to select the correct source. (Allow a few seconds for the projector to sync up after pressing the button.)
- If you're using a PC notebook, press the function key on your keyboard that lets you display on an external monitor. It may be labeled CRT/LCD or have an icon such as . You may have to hold down the Fn key while pressing it. Allow a few seconds for the projector to sync up after changing the setting.

The Projector and Notebook Don't Display the Same Image

If you're projecting from a notebook, and you can't see your image on the projection screen and on your computer at the same time, follow these guidelines.

If you're using a PC notebook:

- On most systems, there's a function key that lets you toggle between the LCD screen and the projector, or display on both at the same time. It may be labeled CRT/LCD or have an icon such as . You may have to hold down the Fn key while pressing it. Allow a few seconds for the projector to sync up after changing the setting.

note

Some notebooks cannot display the same resolution and/or aspect ratio on both the LCD screen and the projected image.

- If the function key doesn't permit you to display simultaneously on both screens, you should check your monitor settings to make sure both the LCD screen and the external monitor port are enabled.

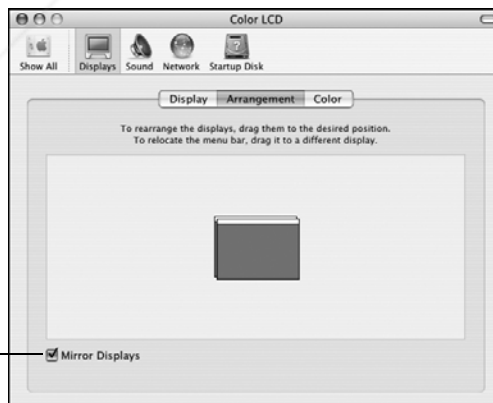
From the Control Panel, open the **Display** utility. In the Display Properties dialog box, click the **Settings** tab, then click **Advanced** (in Windows Vista®, click **Advance Settings**). The method for adjusting the settings varies by brand; you may need to click a **Monitor** tab, then make sure the external Monitor port is set as your primary display and/or enabled. See your computer's documentation or online help for details.

If you're using Mac OS X:

You may need to set up your system to display on the projector screen as well as the LCD screen. Follow these steps:

1. From the Apple® menu, select **System Preferences**, then select **Display** or **Displays**.
2. Click **Detect Displays**.
3. Make sure the **VGA Display** or **Color LCD** dialog box is selected.
4. Click the **Arrangement** or **Arrange** tab.

Make sure
Mirror Displays
is checked



5. Make sure the **Mirror Displays** checkbox is selected.

Adjusting the Image

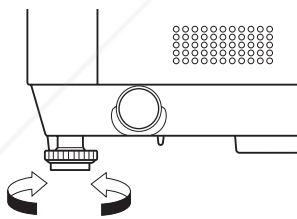
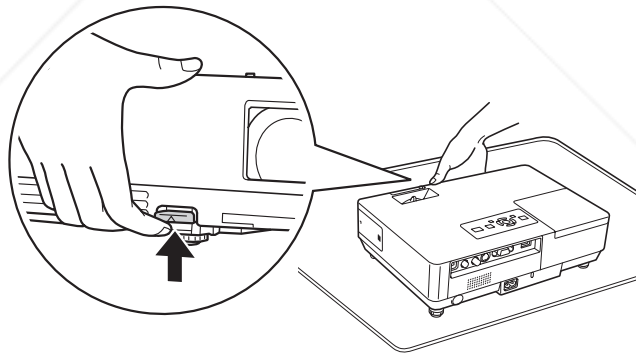
Once you see your image, you need to make certain adjustments:

- If the image is too high or too low, you can reposition it. See below.
- To focus or zoom your image, see page 21.
- If the image isn't square, see page 21.
- If a computer image displays incorrectly, see page 23.
- If you need to fine-tune the image and/or sound, see Chapter 4.

Adjusting the Height of Your Image

If the image is too low on the screen, you can use the front adjustable foot to raise it.

1. Stand behind the projector. Press the blue foot release lever up and lift the front of the projector.



Projector rear foot

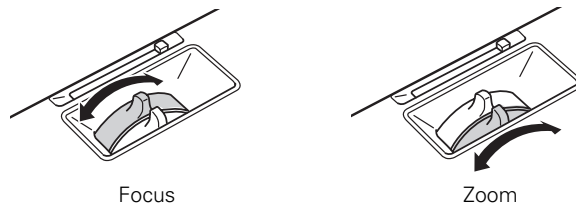
2. Once the image is positioned where you want it, release the lever to lock the foot in position.
3. If necessary, you can fine-tune the height or level the image by turning the projector's adjustable rear foot.

Raising the projector causes the image to distort or "keystone," but you can correct the shape as described on page 21.

Focusing and Zooming Your Image

Turn the focus ring on the projector to sharpen the image.

Turn the zoom ring on the projector to reduce or enlarge the image.

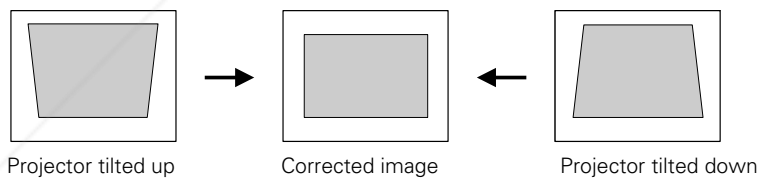


If the image still isn't large enough, you may need to move the projector farther away from the screen. You can also use the E-Zoom buttons on the remote control to zoom in on a portion of the image. See page 29 for instructions.

Adjusting the Image Shape

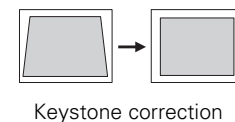
In most cases, you can maintain a square or rectangular image by placing the projector directly in front of the center of the screen with the base of the lens level with the bottom of the screen.

Even if the projector is slightly tilted (within a range of 30° up or down), the projector has an automatic keystone correction function that detects and corrects vertical keystone distortion.



It takes about one second after projection starts for the image to be corrected. During this time, a vertical keystone correction gauge appears on the screen.

If your image is still distorted, you can correct it using the Keystone buttons on the projector's control panel or the projector's Setting



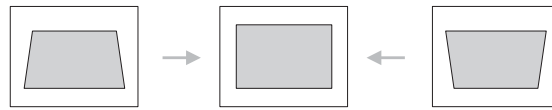
Using Keystone Correction

To adjust your image when it is wider on the top or bottom, do the following:

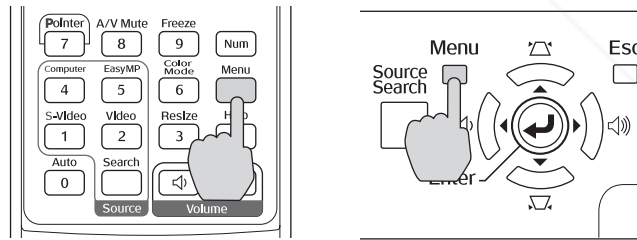
note


*The image will be slightly smaller after adjusting. If it's important to maintain the correct aspect ratio, use the menu system to perform keystone correction, then use the remote's **Resize** button to adjust the aspect ratio. See page 30.*

- Press one of the two triangular buttons on the projector's control panel, as shown below. Continue pressing the button until you are satisfied with the shape of the image.



- Or press the **Menu** button on the remote control or projector, select the **Setting** menu, and press **Enter**.

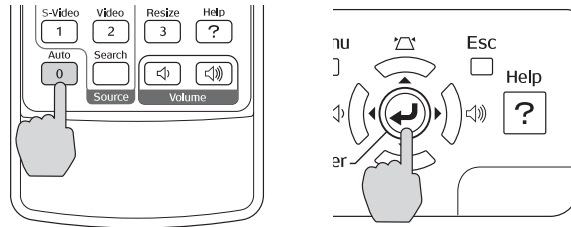


From the Setting menu, select **Keystone** and press **Enter**. Use the  pointer button on the remote control to adjust the keystone setting as needed.

If the image becomes uneven, decrease the sharpness setting. (See page 47.)

Correcting Computer Images

If you're connected to a computer and the image doesn't look right, press the **Auto** button on the remote control or the **Enter** button on the projector. This automatically resets the projector's tracking, sync, resolution, and position settings.



note

You must be projecting an image for this button to have any effect. The Auto button works only with computer images projected through the VGA port.

If the **Auto** button doesn't correct the problem, you may need to adjust the tracking or sync using the projector's **Signal** menu. See page 49 for more information.

Using the A/V Mute Slide

You can use the **A/V Mute** slide to temporarily turn off the image and sound when you want to redirect your audience's attention.

Shutting Down the Projector

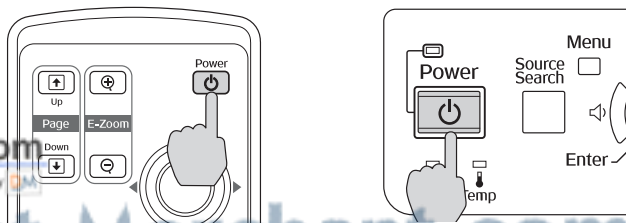
When you've finished using the projector, follow the recommended procedure to shut it down. This extends the life of the lamp and protects the projector from possible overheating.

1. Turn off any equipment plugged into the projector.
2. To turn off the projector, press the red **Power** button on the remote control or projector.


note

Lamp life results will vary depending on mode selected, environmental conditions, and usage.

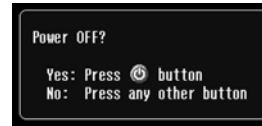
Turn off this product when not in use to prolong the life of the projector.




note


You can set the projector to automatically turn off the projector lamp and enter "sleep mode" when it has not received any signals for 30 minutes. This conserves electricity, cools the projector, and extends the life of the lamp. If you want to start projecting again, press the  Power button. If you are done using the projector, unplug the power cord. To enable sleep mode, see page 57.

You see a confirmation message. (If you don't want to turn it off, press any other button.)




- Press the  Power button again. The lamp turns off. When the projector beeps twice, you can unplug the power cord.

(If the projector is mounted on the ceiling, you will need to wait 20 seconds for the projector to cool down before you can unplug the power cord.)

If you want to turn the projector on again, make sure the orange light is not flashing, then press the  Power button.

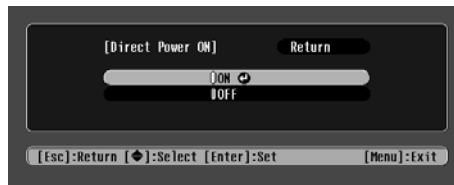
- If you extended the adjustable front foot, press up on the blue foot release lever to retract it.
- Close the A/V Mute slide.

Using the Direct Power On Function

The Direct Power On function enables faster setup. The projector will start up automatically when you plug it in; you won't have to press the  Power button.

Follow these steps to enable Direct Power On:

- Press the **Menu** button on the remote control and select the **Extended** menu.
- Choose **Operation** and press **Enter**.
- Choose **Direct Power On** and press **Enter**.



- Highlight **On** and press **Enter**.
- Press **Esc** or **Menu** to exit. The setting will take effect the next time you plug in the projector.

note

If a power outage occurs when Direct Power On is enabled and the projector is plugged in, the projector will start when the power is restored.

2

Using the Remote Control

The projector includes a number of tools to enhance your presentation. All of them can be accessed using the remote control, which lets you operate the projector from anywhere in the room—up to 20 feet (6 meters) away.

note

For information and resources to help you give the most professional presentation, be sure to visit presentersonline.com.

You can use the remote control to adjust the picture and sound (page 27) or as a pointer to highlight your presentation (page 32). You can also use it to adjust the color mode for various environments (page 30) or as a wireless mouse when projecting from a computer (page 31).

This chapter covers:

- Using the remote control
- Controlling the picture and sound
- Operating your computer with the remote control
- Highlighting your presentation

note

If a button is pressed longer than 30 seconds, the remote control stops operating to conserve power. When you release the button, normal operation resumes.

caution

When replacing batteries, take the following precautions:

- *Replace the batteries as soon as they run out. If the batteries leak, wipe away battery fluid with a soft cloth. If fluid gets on your hands, wash immediately.*
- *Do not expose batteries to heat or flame.*
- *Dispose of used batteries according to local regulations.*
- *Remove the batteries if you won't be using the projector for a long period of time.*

Using the Remote Control

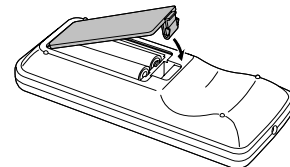
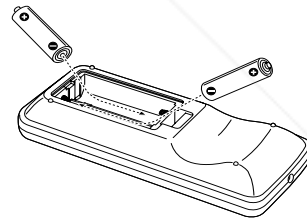
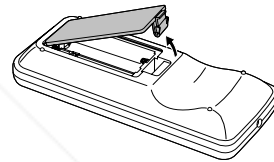
Follow these tips for using the remote control:

- Point the remote control at the front of the projector or at the screen.
- Stand within 20 feet (6 meters) of the projector.
- Avoid using the remote under bright fluorescent lamps or in direct sunlight, or the projector may not respond properly.

Replacing the Batteries

Replace the batteries as described below:

1. Turn the remote control over.
2. Press down on the tab on the battery cover as you lift the cover off.
3. Install two AAA batteries, inserting the + and – ends as shown.
4. Position the cover as shown, then press down until it snaps into place.



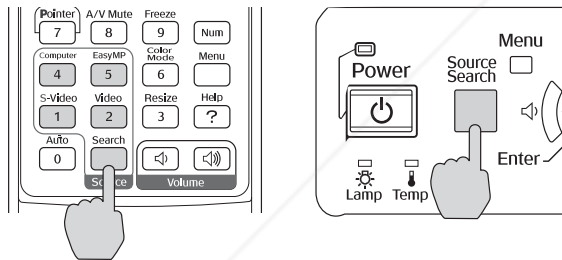
Controlling the Picture and Sound

You can use the remote control to preview and select your picture sources, temporarily turn off the picture and sound, freeze the action, zoom in on the picture, and adjust the volume.

Switching Between Picture Sources

If your projector is connected to more than one computer and/or video source, you can switch between the different sources:

- The easiest way to select your source is to press the **Search** button on the remote control (or the **Source Search** button on the projector) repeatedly until you see the image you want on the screen.



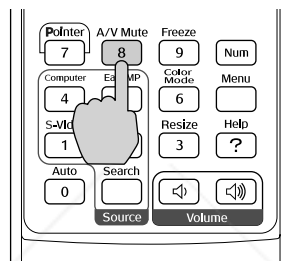
- On the remote control, there are four **Source** buttons. Use them to switch between equipment connected to the port identified on each button.

After you select a source, the screen goes dark for a moment before the image appears.

Turning Off the Picture and Sound

You can use the **A/V Mute** button on the remote control to turn off the image and sound. This does the same thing as the **A/V Mute** slide and is useful if you want to temporarily redirect your audience's attention.

- To turn off the picture and sound, press the **A/V Mute** button. The screen turns black.
- To turn the image and sound back on, press the button again.

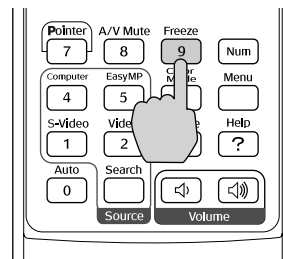


You can have the screen turn blue when you press the **A/V Mute** button. You can also have an image, such as a company logo, display on the screen (see page 54).

Stopping Action

You can use the remote control to stop the action in your video or computer image.

- To stop the action and keep the current image on the screen, press the **Freeze** button. The sound continues.
- To restart it, press the **Freeze** button again.








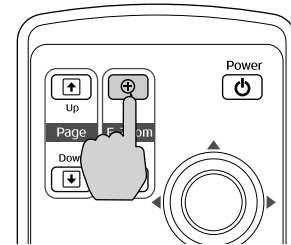
note

This function pauses the image, but not the sound. Also, because the source continues to transmit signals, you won't resume the action from the point you stopped it.



Zooming Part of Your Image

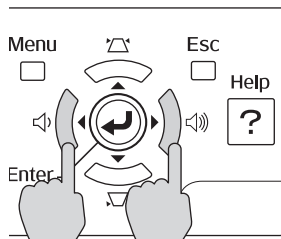
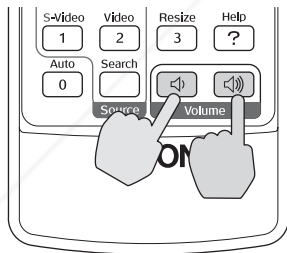
You can zoom in on a portion of the image using the E-Zoom buttons on the remote control.

1. Press the E-ZOOM  button on the remote control.
You see a crosshair indicating the center of the zoom-in area.
2. Use the  pointer button to position the crosshair.
3. Continue pressing the E-ZOOM  button to enlarge the selected area up to 4 times.
4. While the image is enlarged, you can:
 - Use the  pointer button to move around the screen.
 - Press the E-ZOOM  button to zoom out.
5. When done, press the ESC button to return the image to its original size.



Controlling the Volume

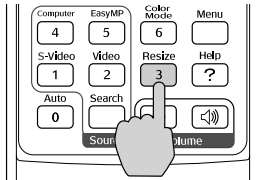
To change the volume, press the  or  button on the remote control or projector.



You can also adjust the volume using the projector's menu system. See page 50.

note

To temporarily shut off the sound and picture, press the A/V Mute button or close the A/V Mute slide.

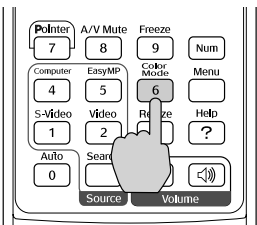


Resizing Video Images

You can use the **Resize** button on the remote control to adjust how an image fits into the display area.

For video images, press **Resize** to switch the aspect ratio between 4:3 and 16:9, (and Normal for computer images). This lets you play certain digital video images or movies recorded on certain DVDs in 16:9 widescreen format.

For computer images, resizing is normally unnecessary, since the projector automatically resizes the image to make the best use of the display area. If you press the **Resize** button on the projector or remote control, the projector displays the image at the output resolution of the computer (which makes the image larger or smaller, depending on its resolution). If the resolution of the image is the same as the projector's (1024 × 768), pressing **Resize** has no effect.



Adjusting the Color Mode

You can use the **Color Mode** button on the remote control to adjust the color, brightness, and other aspects of your image.

Press the button repeatedly to select from the following settings:

Photo: For vivid, high-contrast still images in a bright room.

Sports (video, S-video, or composite video only): For vivid TV images projected in a bright room.

Presentation: For computer presentations (the default when projecting from a computer with analog video).

Theatre: For optimizing movie images with increased contrast.

Game: For increased brightness when playing video games or watching TV in a bright room. Emphasizes dark gradations.

sRGB: For matching the color palette of standard sRGB computer displays.

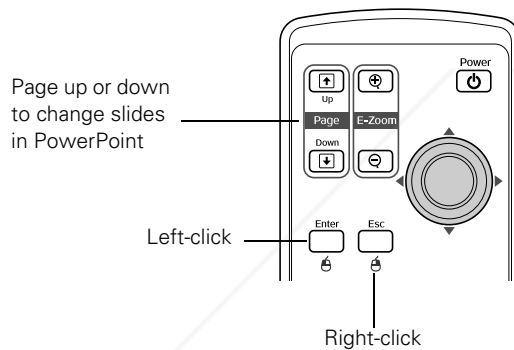
Blackboard: For projecting accurate colors on a green chalkboard (adjusts the white point).

Customized: For manual color adjustment. (See page 46).

Operating Your Computer with the Remote Control

If you connect a computer to the projector with a USB cable, as described on page 35, then select **Link 21L** for the USB Type B setting in the Extended menu (see page 57), you can use the remote control in place of your computer's mouse. This gives you more flexibility when delivering slideshow-style presentations, since you won't have to stand next to the computer to change slides.

- Use the **Up** and **Down** buttons to move through a slideshow.



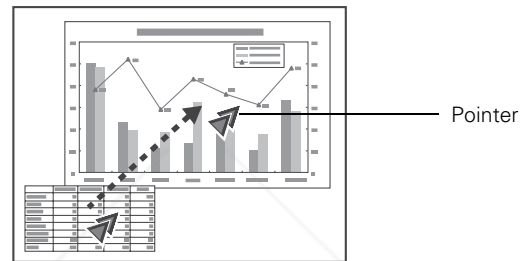
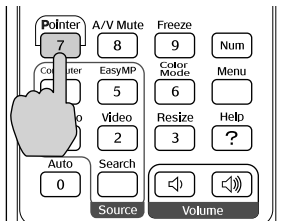
- Use the **Pointer** button to move the cursor on the screen.
- Press the **Enter** button once to left-click, or press it twice to double-click. Press the **Esc** button to right-click.
- To drag-and-drop, hold down the **Enter** button. Then use the **Pointer** button to drag the object. When it's where you want it, press **Enter** to release it.

Highlighting Your Presentation


You can display a pointer to call out important information on the screen. If you want to customize the pointer tool, you can choose from three alternative shapes.

Using the Pointer Tool

1. To activate the pointer tool, press the **Pointer** button on the remote control. A pointer appears on the screen.



If you prefer to use a different style of pointer, see the instructions in the next section.

2. Use the  pointer button on the remote control to position the pointer on the screen.
3. When you're done using the pointer, press **ESC** to clear the screen.

Customizing the Pointer Tool

You can change the appearance of the pointer by choosing from three alternative shapes.

1. Press the **Menu** button on the remote control, highlight the **Settings** menu, highlight **Pointer Shape**, and press **Enter**. You can select one of the pointer shapes shown at the left.
2. Select the shape you want and press **Enter**.
3. Highlight **Return** and press **Enter**.
4. Press **Menu** to exit from the menu system.



3

Connecting to Computers and Other Equipment

This chapter tells you how to connect the projector to a notebook or desktop computer, and/or to video equipment, such as a VCR, DVD player, or video camera.

Follow the instructions in this chapter on:

- Connecting to a computer
- Connecting video equipment
- Playing sound through the projector

note

*If you connect a Windows-based computer to the projector, you may see a New Hardware Wizard saying your computer has found a plug-and-play monitor; if so, click **Cancel**.*

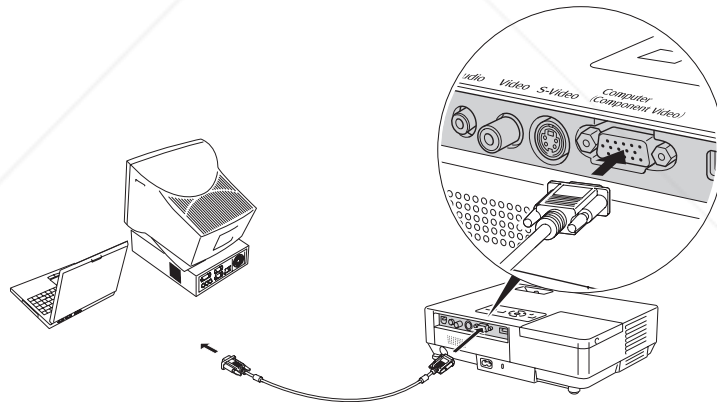
Connecting to a Computer

You can connect the projector to any computer that has a standard video output (monitor) port, including desktop models, PC notebook and notebook computers, MacBooks, PowerBooks and iBooks, and hand-held devices. To connect to the blue Computer/Component Video port (standard VGA cable connection), see the instructions below.

Connecting to the Computer Port

You can connect to the blue Computer/Component Video port using the VGA computer cable that came with the projector (the monitor port on your computer must be a mini D-sub 15-pin port).

1. If you're using the VGA computer cable, connect one end to the projector's blue Computer/Component Video port, and the other end to your computer's monitor port. Then go to step 3.

**caution**

Don't try to force a connector to fit a port with a different shape or number of pins. You may damage the port or connector.


2. You can connect an optional stereo mini-jack audio cable to play sound through the projector (see page 41), or connect a USB cable to use the remote control as a mouse (see page 35).

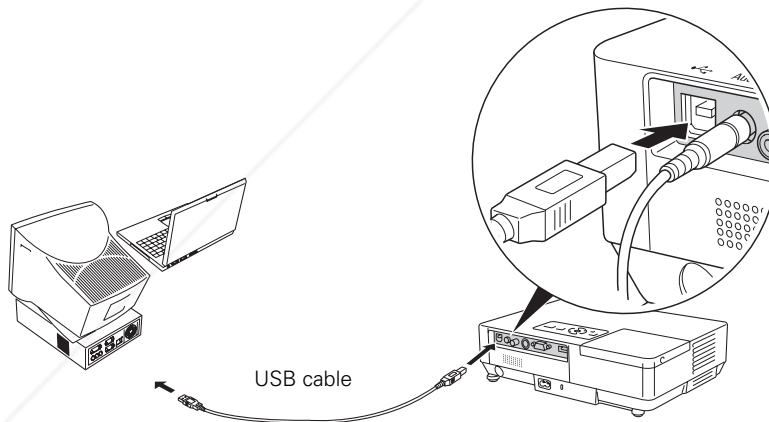
- When you've finished making any connections, see page 15 for instructions on turning on the projector and adjusting the image.

Connecting the Cable for Remote Mouse Control

If you've connected a computer as described in this chapter (using the Computer/Component Video port) and set the USB Type B setting under the projector's Extended menu to Link 21L (see page 57), you can use the projector's remote control as a wireless mouse. This lets you control your computer and click through slideshow-style presentations, such as PowerPoint, from up to 20 feet away.

The wireless mouse function is supported on systems with a USB port running Windows 98SE, 2000, Me, or XP, or Mac OS® X 10.2.x to 10.5.x. This function is not supported if you use an S-Video cable to connect your computer to the projector.

- Connect the square end of a USB cable to the projector's  USB port.



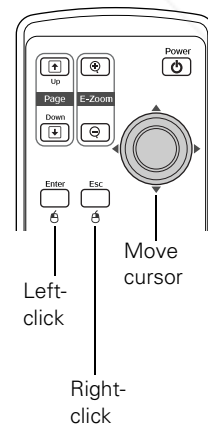
- Connect the flat end of the cable to any available USB port on your notebook or desktop computer.
- If necessary, configure your computer to work with an external USB mouse. See your computer documentation for details.

note

The remote mouse control function may not operate correctly on systems that have been upgraded from an earlier version of Windows.

note

For details on how to use the remote control in place of your computer's mouse, see page 31.



Connecting to Video Equipment

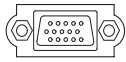
You can connect several video sources to the projector at the same time. Before starting, look at your video equipment to determine its available video output connections:



RCA connector
(composite video)



S-Video connector
(4-pin mini-DIN)



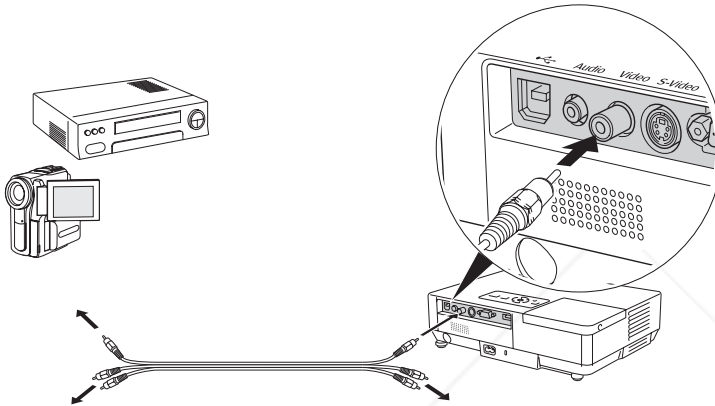
VGA connector
(RGB video)

- If your video player has a yellow RCA-style video output connector, see “Connecting a Composite Video Source” on page 37.
- If your video player has an S-Video connector, see “Connecting an S-Video Source” on page 38.
- If your video player has a component video port (three connectors labeled either Y/Cb/Cr or Y/Pb/Pr), see “Connecting a Component Video Source” on page 39.
- If your video player has an RGB video port (either a single connector for a VGA-style monitor cable or three connectors labeled R/G/B), see “Connecting an RGB Video Source” on page 40.

After connecting video cables, you may also want to connect an audio cable to play sound through the projector; see page 41.

Connecting a Composite Video Source

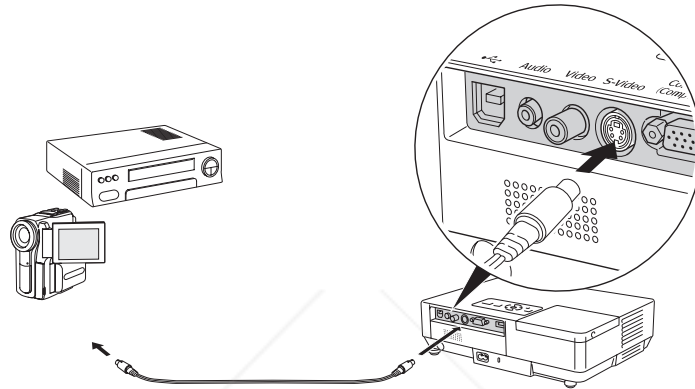
1. Locate an RCA-style video cable (one is usually provided with your video equipment or you can purchase one from an electronics dealer).
2. Connect the cable to the yellow video output connector on your player and the yellow Video connector on the projector:



3. If you want to play sound through the projector, see page 41 for instructions on connecting audio cables.
4. If you don't need to make any other connections, see page 15 for instructions on turning on the projector and adjusting the image. Once the projector is turned on, select the image source: press the **Search** button on the remote control or press the **Source Search** button on the projector's control panel repeatedly until the image appears.

Connecting an S-Video Source

1. Locate an S-Video cable (one is usually provided with your video equipment or you can purchase one from Epson; see page 10).
2. Connect the cable to the S-Video connector on your player and the S-Video connector on the projector:

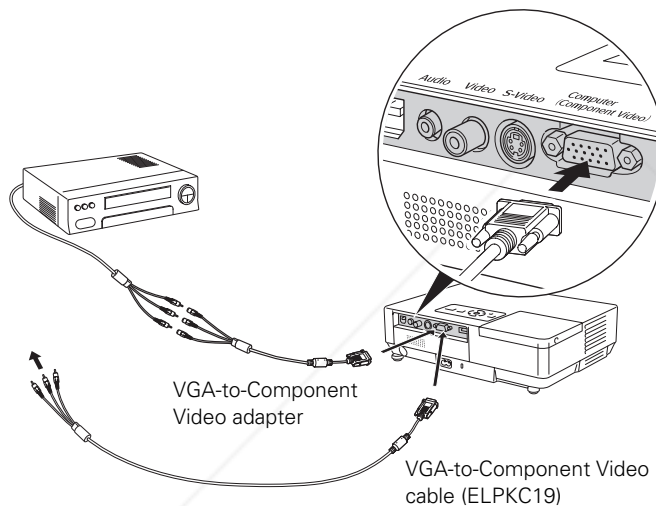


3. If you want to play sound through the projector, see page 41 for instructions on connecting audio cables.
4. If you don't need to make any other connections, see page 15 for instructions on turning on the projector and adjusting the image. Once the projector is turned on, select the image source: press the **Search** button on the remote control or press the **Source Search** button on the projector's control panel repeatedly until the image appears.

Connecting a Component Video Source

You will need a VGA-to-Component Video adapter (included with your projector) and a component video cable. Or you can use a VGA-to-Component Video cable (ELPKC19) from Epson; see page 11 for ordering information.

1. Locate a VGA-to-Component Video cable or adapter.
2. Connect the cable or cable and adapter to your video source and the blue Computer/Component Video connector on the projector.



3. If you want to play sound through the projector, see page 41 for instructions on connecting audio cables.
4. If you don't need to make any other connections, see page 15 for instructions on turning on the projector and adjusting the image. Once the projector is turned on, select the image source: press the Search button on the remote control or press the Source Search button on the projector's control panel repeatedly until the image appears.

note

Be sure your video player is not an RGB video source. If you select the wrong source, image quality may suffer. Check your video player's documentation.

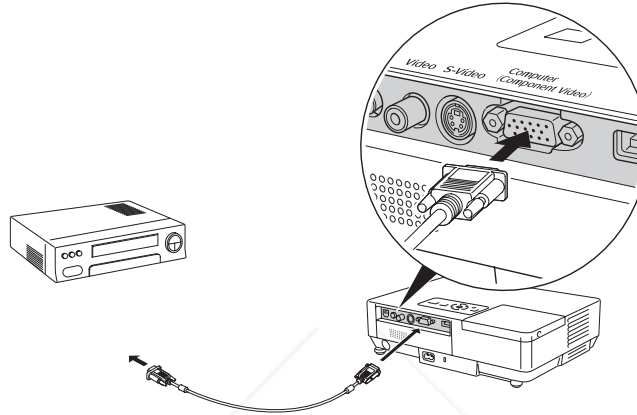
Also, make sure the Computer Input setting in the Signal menu is set to Auto or Component Video (see page 49).

Connecting an RGB Video Source

1. Locate the VGA computer cable provided with the projector.
2. Connect the cable to the video port on your player and the Computer/Component port on the projector.

note

Be sure your video player is not a component video source. If you select the wrong source, image quality may suffer. Check your video player's documentation.



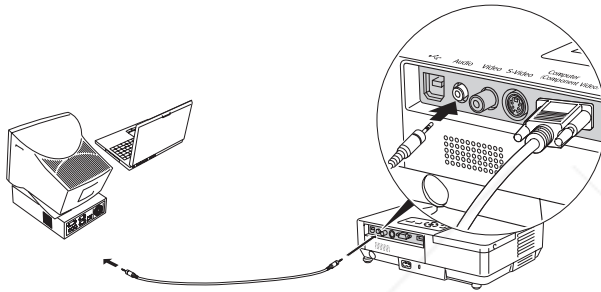
3. If you want to play sound through the projector, see page 41 for instructions on connecting audio cables.
4. If you don't need to make any other connections, see page 15 for instructions on turning on the projector and adjusting the image. Once the projector is turned on, select the image source: press the **Search** button on the remote control or press the **Source Search** button on the projector's control panel repeatedly until the image appears.

Playing Sound Through the Projector

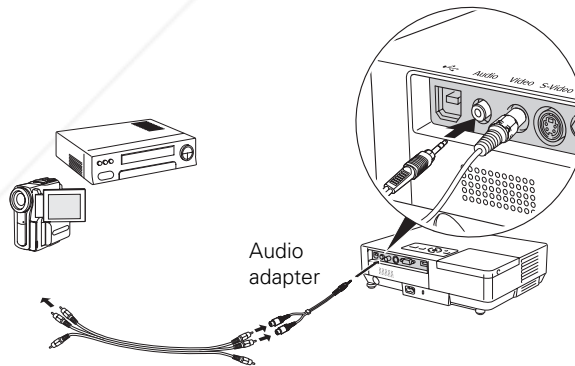
You can play sound through the projector's speaker system.

To play sound through the projector, follow these steps:

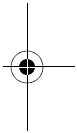
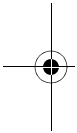
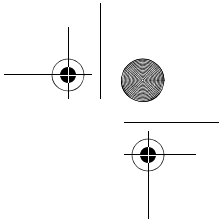
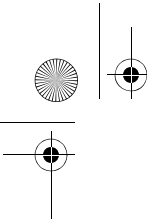
1. Locate the appropriate cable and connect it to the **Audio** jack on the projector.
 - If you have a computer connected to the blue **Computer/Component Video** port, use a stereo mini-jack cable.



- If you have video equipment connected to the **Video** or **S-Video** port, use an RCA-style audio cable and the audio adapter included with the projector.



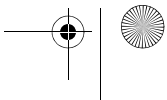
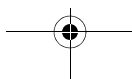
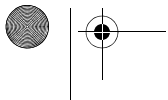
2. Connect the other end of the cable to the audio output connector(s) on your computer or video equipment.



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THE TRUSTED SOURCE FOR PROJECTOR LAMPS AND ACCESSORIES

42 *Connecting to Computers and Other Equipment*



4 *Fine-Tuning the Projector*

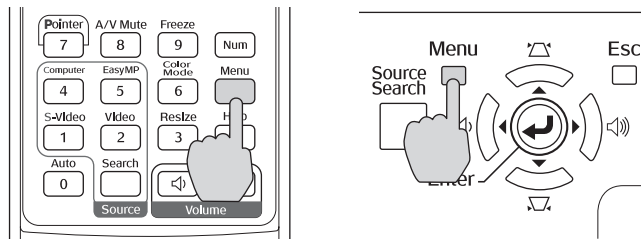
You can use the projector's on-screen menus to adjust the image, sound, and other features. This chapter covers the following information:

- Using the menu system
- Adjusting the image
- Adjusting signal settings
- Customizing projector features
- Using the projector security features
- Customizing power and operation

Using the Menu System

You can use the remote control or the projector's control panel to access the menus and change settings. Follow these steps:

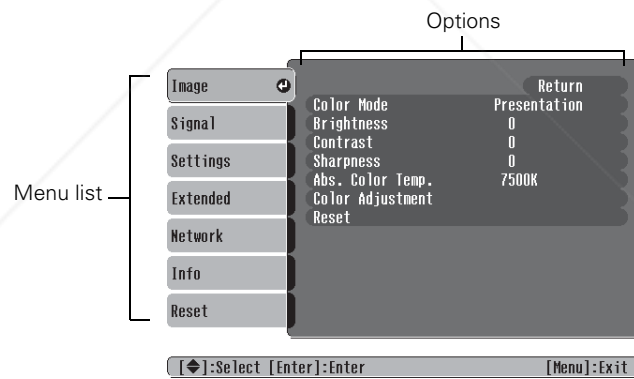
1. To display the menu screen, press the **Menu** button on the remote control or on the projector.





You see a menu screen similar to the one below:




note

The Network option does not appear in the EX100 menu.



The menus are listed on the left and the options available for the highlighted menu are shown on the right.

2. Use the  pointer button on the remote control (or the navigational buttons on the projector) to scroll through the menu list. When you've highlighted the desired menu, press the **Enter** button to select it.
3. Once you've selected the menu, use the  pointer button to scroll through the list of options. (Some of the options may be grayed out or unavailable, depending on the selected source.)

4. After highlighting the option you want to adjust, use the  pointer button to change the setting. In some cases, you may have to press the **Enter** button to view a sub-screen for changing the setting.
 - Press the left or right side of the  pointer button to adjust a slider bar.
 - To select from two or more settings, use the  pointer button to highlight the desired setting and press **Enter**.
5. After changing the settings, press the **Esc** button to save your changes and return to the previous menu (or press it repeatedly to exit the menu system).

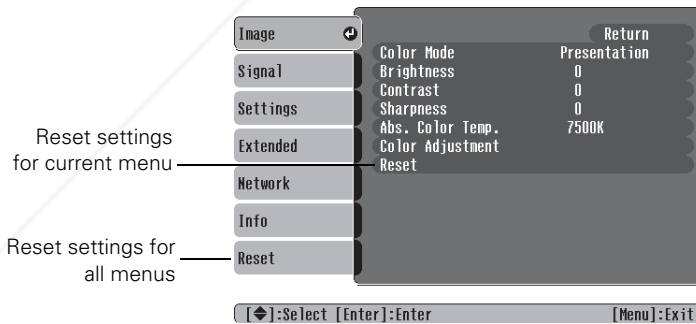


You can also press the **Menu** button to exit.

Restoring the Default Settings

You can use the menu system's **Reset** options to restore the factory-default settings for all the settings listed in a specific menu, or all the settings in all menus.

To restore the settings in a specific menu, enter the menu whose settings you want to change, select **Reset**, and confirm as needed. (The example below shows how to reset the Image menu.)



note

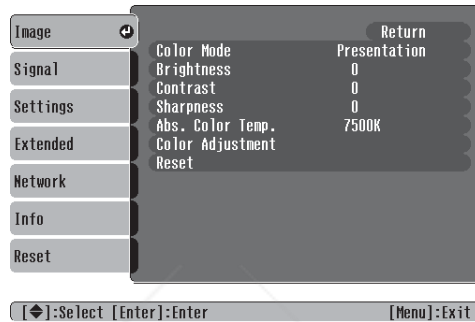
*When you select **Reset All** in the **Reset** menu, it does not reset the **Computer Input**, **Video Signal**, **User's Logo**, **Language**, or **Lamp settings**.*


To restore all the projector settings to their factory-default values, select the **Reset** menu, highlight **Reset All**, and press **Enter**.

Adjusting the Image

You can use the Image menu to adjust the brightness, sharpness, color, tint, and contrast.

1. Press the **Menu** button on the projector or remote control and select the Image menu. You see the Image menu screen.



2. Use the  pointer button to highlight the desired option, then adjust it as needed:

- **Color Mode**

Lets you quickly adjust the color and brightness for various environments. Use either the remote control or the **Color Mode** setting in the Image menu. You can save a different setting for each source. Select from these settings:

Photo: For vivid, high-contrast still images in a bright room.

Sports (video, S-video, or composite video only): For vivid TV images projected in a bright room.

Presentation: For computer presentations (the default when projecting from a computer with analog video).

Theatre: For optimizing movie images with increased contrast.

Game: For increased brightness when playing video games or watching TV in a bright room. Emphasizes dark gradations.

sRGB: For matching the color palette of standard sRGB computer displays.

Blackboard: For projecting accurate colors on a green chalkboard (adjusts the white point).

Customized: For manual color adjustment. (See below.)

- **Brightness**
Lightens or darkens the overall image.
- **Contrast**
Adjusts the difference between light and dark areas.
- **Color Saturation (video only)**
Adjusts the color depth of the image.
- **Tint (video only)**
Adjusts the balance of green to magenta in the image (available only for component video or NTSC signals).
- **Sharpness**
Adjusts the sharpness of the image.
- **Color Adjustment**
Adjusts the color values. For **Customized** color mode, select **RGBCMY** to adjust individual red, green, blue, cyan, magenta, and yellow hue and saturation values. For other color modes, **RGB** may be selected to adjust red, green, and blue hue and saturation values. (Not available if **sRGB** is selected as the Color Mode setting.)
- **ABS Color Temp.**
Sets a color temperature between 5000 and 10000 °K. (Not available if **sRGB** is selected as the Color Mode setting.)

Six-Axis Color Adjustment

For special projection material, such as high-quality photographs or artwork, you can adjust the hue and saturation for six different color axes.

1. Follow the instructions on page 46 to open the Image menu and select **Color Mode**.

2. Press the **Enter** button to select **Customized**, then press **Esc** to return to the Image menu.

note

*The **Brightness** setting changes the opacity of the projector's LCD panels. You can also change the lamp's brightness. Select*

***Brightness Control** (light output) in the **Setting** menu, then choose **High** or **Low** (the default setting is **High**).*



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Fine-Tuning the Projector 47

3. Select **Color Adjustment** and press **Enter**. You see hue and saturation controls on the screen for six colors: **RGBCMY** (red, green, blue, cyan, magenta, and yellow).
4. Select the color axis you want to adjust and press **Enter**. You see color controls for hue and saturation.

Hue changes the balance of color, and saturation changes the strength of the color.

5. Use the  pointer button to adjust the hue and saturation. You see the adjustments reflected on the screen. When you are satisfied with the color, press **Esc**.
6. Repeat steps 4 and 5 for each color axis you want to adjust.

You may need to readjust the color as the lamp in your projector changes over time.

Adjusting Signal Settings

note

You can also use the remote control's **Auto** button to automatically reset the projector's tracking, sync, resolution, and position settings. See page 23 for details.

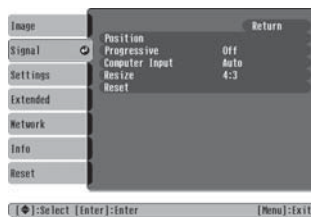
Although the projector normally detects and optimizes the input signal automatically, you can use the **Signal** menu to make manual adjustments. In addition to changing the position of the projected image, you can correct tracking and sync for computer images, or change the aspect ratio to widescreen format for video images.

1. Press the **Menu** button and select the **Signal** menu.

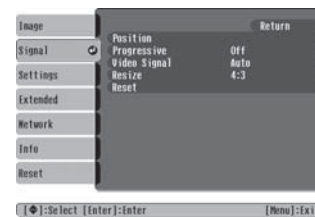
You see a screen similar to one of those below. (The settings will be different depending on the source you are projecting from.)




Computer/RGB Video



Component Video



Composite Video/S-Video

2. Use the  pointer button to highlight the desired option, then adjust it as needed:

■ **Auto Setup**

Leave this setting **On** to automatically optimize the computer image. Turn it off if you want to save adjustments you have made to the video settings.

■ **Tracking**

Adjust this value to eliminate vertical stripes in the image.


■ **Sync**

Adjust this value if the image appears blurry or flickers.

■ **Progressive**

Turn this setting **On** to convert composite video signals into progressive signals (best for still images). Leave the setting **Off** for moving images.

■ **Position**

If the image is slightly cut off on one or more sides, it may not be centered exactly. Select this setting and use the  pointer button to center it.

■ **Computer Input**

If the colors don't look right on the **Auto** setting, select the setting for the type of equipment you've connected to the **Computer/Component Video** port:

RGB: For a computer connection.

Component Video: For a video player that outputs a component video signal.

■ **Video Signal**

Leave this setting at **Auto** unless you are using a 60-Hz PAL system (then select **PAL60**).

■ **Resize**

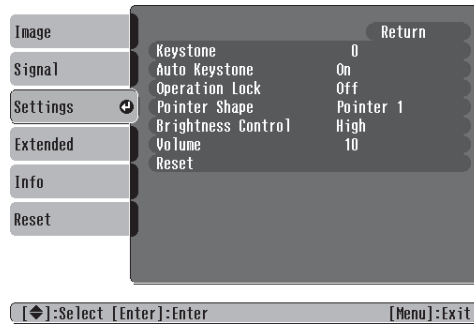
Choose an aspect ratio of either **4:3** or **16:9**. **Normal** is the default setting for a computer connection.


tip

Before adjusting tracking or sync, fill the screen with an image containing fine detail. For example, in Windows you can select a pattern to appear as your desktop background. If this option isn't available, try projecting black text on a white background.

Customizing Projector Features

You can use the Settings menu to lock the buttons on the projector, adjust audio volume, and customize several other features.



- **Keystone**
Squares up the shape of the image after the projector has been tilted upward. If you notice lines or edges looking jagged after adjusting the shape, decrease the Sharpness setting (see page 46).
- **Auto Keystone**
Automatically compensates for keystone distortion when the projector is tilted upward. This feature is available only when the projector is set for front projection (it is enabled by default).
- **Operation Lock**
Lets you disable all of the buttons on the projector except the  Power button. See page 56 for more information.
- **Pointer Shape**
Lets you choose from three alternative pointer shapes. See page 32 for more information.
- **Brightness Control**
Lets you select from two levels of brightness. The **Low** setting reduces power consumption and noise, and extends the lamp's operating life.
- **Volume**
Raises or lowers the volume of the projector's speaker.

note

You can also adjust the volume using the remote control.

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Using the Projector Security Features

To prevent unauthorized use of the projector, you can do the following:

- Assign a password; this can be disabled for a set period if you want to loan the projector to someone.
- Create an identifying user logo that is displayed at startup and/or when the **AV Mute** button is pressed. See page 54.
- Disable the projector's buttons; this is useful, for example, if you're projecting in a classroom and you want to ensure that no one touches the projector's buttons while you're using the remote control. See page 56.

If you create a user's logo for the projector, you can set up the logo so it is displayed as the startup screen and/or AV/Mute screen.

Unauthorized users cannot turn it off or change it. This feature is intended to discourage theft and provides a way to identify the projector should it be stolen.

Enabling Password Protection

To prevent unauthorized use, you can assign the projector a password. If you do, a screen will appear requesting the password whenever the projector is plugged in and turned on. If an incorrect password is entered three times in succession, the projector's operation is locked and the power cord must be disconnected and reinserted to redisplay the password screen. If an incorrect password is entered thirty times in succession, the user must contact Epson to unlock the projector.

The default setting for the Password Protect function is **Off**. Follow these steps to turn password protection on:

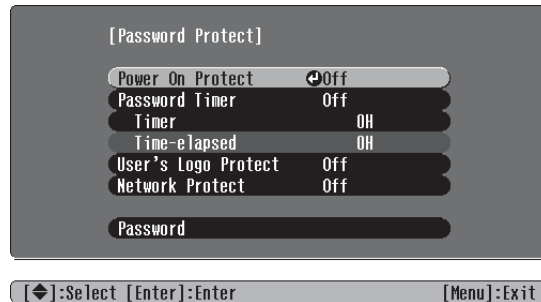
1. Press the **Freeze** button on the remote control for about five seconds.

note

It's a good idea to write down your password.

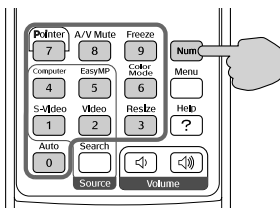
If you leave the projector plugged in, the Password Protect Release screen will not appear. You only need a password if you unplug and reconnect the power cable. Network Protect is not available for the EX100 projector.

You see this screen:



caution

If you lose the remote control, you will not be able to enter the password. Keep the remote control in a safe place at all times.



2. Use the pointer button to set **Power On Protect** to **On**. Then press **Enter**.
3. Press **Esc**.
4. Select **Password** and press **Enter**.
5. When you see a message asking if you want to change the password, select **Yes** and press **Enter**.
6. Hold down the **Num** button on the remote control and use the numeric keypad to enter a four digit password. (The default setting is 0000.)
7. When you see a confirmation message, reenter the password. Then press the **Menu** button to exit the screen.
8. Press the **Num** button on the remote control to deactivate the numeric keypad.
9. If you want to disable the password temporarily, select **Timer** and press **Enter**. Then hold down the **Num** button while you use the numeric keypad to enter the number of hours (from 0 to 9999) that you want the password feature disabled. If you want the projector to request the password every time it is turned on, set the timer to **0H**.

The countdown for the elapsed time begins as soon as you close the Password Protect menu. (You can check the elapsed time in this menu next to **Time elapsed**.)

10. To enable your screen logo, select **User's Logo Protect** and press **Enter**. Select **On** and press **Enter**.

When this feature is on, the logo appears whenever you turn on the projector (if the **Startup Screen** is enabled in the Extended menu; see page 54). It also appears when you press the A/V Mute button (if you selected the **Logo** for the A/V Mute setting under Display in the Extended menu). None of the User's Logo features in the Extended menu can be changed when the User's Logo Protect function is enabled.

Starting the Projector with a Password

When the password function is enabled, you see this screen when you plug in and turn on the projector:

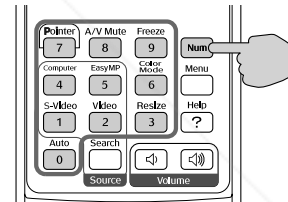


Hold down the **Num** button on the remote control and use the numeric keypad to enter the four digit password.

The password screen closes, the numeric keypad is automatically deactivated, and projection begins.

If the password is not correct, you see a message prompting you to re-enter the password. If you enter an incorrect password three times in succession, you see the message **The projector's operation will be locked. Request code xxxxx** and the projector switches to standby mode for approximately 5 minutes. Write down the request code. Then disconnect the projector's power cord from the electrical outlet, reconnect it, and turn the projector back on.

When you see the Password Protect Release screen again, you can try to enter the correct password.



If you enter an incorrect password 30 times in succession, the projector remains locked and you must contact Epson to unlock it.

If you have forgotten the password, contact Epson with the request code number that appears in the Password Protect Release screen for assistance. See “Where To Get Help” on page 78.

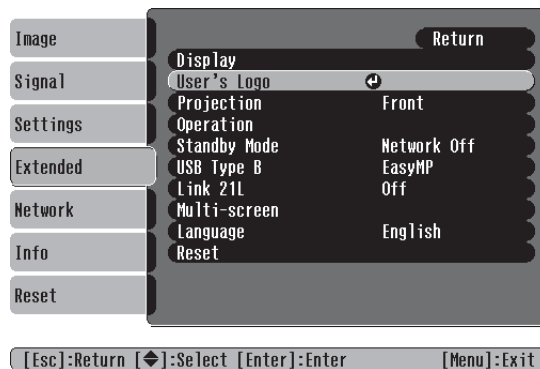
Creating Your Own Startup Screen

You can transfer any image from your computer or video source to the projector and then use it as your startup screen. You can also use it as the screen displayed when the projector is not receiving a signal or when you press the **A/V Mute** button. The image can be a company logo, slogan, photograph, or any other image you want to use.


Capturing the Image

Start by displaying the image you want to use from either a computer or video source, such as a DVD player. Then follow these steps to capture the image and transfer it to the projector:

1. Press the **Menu** button on the remote control, highlight the **Extended** menu, and press **Enter**.
2. Highlight **User's Logo** and press **Enter**.



3. When you see a message asking **Choose this image as the user's logo?**, select **Yes** and press **Enter**. A selection box displays over the image.

4. Use the  pointer button to select the area of the image you want to use. Then press **Enter**.
5. When you see the message **Select this Image?**, highlight **Yes** and press **Enter**.
6. Use the arrow buttons to select a zoom rate (display size) and press **Enter**.
7. When the message **Save this image as the user's logo?** appears, select **Yes** and press **Enter**. Saving the logo may take a few moments. Do not use your projector, remote control, or video source while the logo is being saved.
8. When you see the message **Completed**, press **Esc** to return to the menu screen.

Choosing When to Display the Image

After your image is saved, it is automatically set as the startup screen. You can also set it to display as the screen you see when there's no signal or when you press the **A/V Mute** button (see page 28).

1. Press the **Menu** button, highlight the **Extended** menu, and press **Enter**.
2. Select **Display** and press **Enter**.
3. Highlight **Display Background** (for when there is no signal) or **A/V Mute**, and press **Enter**.
4. Select **Logo** and press **Enter**.
5. When you're finished, press **Esc** to exit.

note

Press the Enter button on the projector's control panel for 7 seconds to disable the Operation Lock function.

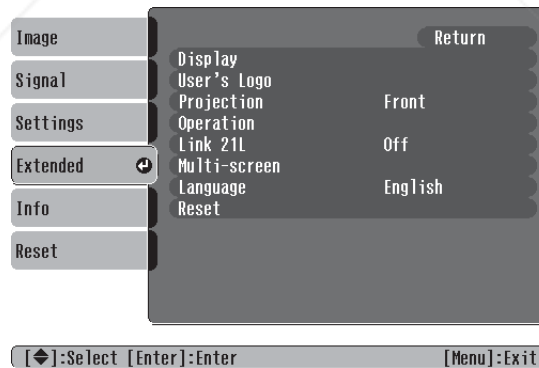
Disabling the Projector's Buttons

When you enable the Operation Lock function, you can lock all the projector's buttons, or all buttons except the Power button.

1. Press the **Menu** button, highlight the **Settings** menu, and press **Enter**.
2. Select **Operation Lock** and press the **Enter** button.
3. Select **Full Lock** (to lock all projector buttons) or **Partial Lock** (to lock all buttons except the **Power** button) and press **Enter**.
4. Select **Yes** and press **Enter** to confirm the setting.
5. Press the **Menu** button to exit.

Customizing Power and Operation

You can use the Extended menu to customize the way the projector displays images, enable quick startup, turn sleep mode on or off, and customize other projector operations.



- **Display**
Use this setting to turn off the display of messages, change the background color, enable logo display, or turn off the startup screen display.
- **User's Logo**
Create a custom startup screen, as described on page 54.

■ Projection

Select **Front** (to project from the front of a screen and right side up), **Front/Ceiling** (when the projector is mounted upside down from the ceiling), **Rear** (to project from behind onto a transparent screen), or **Rear/Ceiling** (to project from behind onto a transparent screen when the projector is mounted upside down from the ceiling).

When you select one of the Ceiling projection methods, the projector requires a 10-second cool-down after you turn it off. You need to wait until you hear the projector beep before unplugging it.

■ Operation

Enable **Direct Power On** if you want to have the projector start when the power cable is connected (without pressing the **Power** button). Enable **Sleep Mode** if you want to have the projector turn off automatically if it is idle (and no signal is received) for 30 minutes or when the A/V Mute Slide is closed. Enable **High Altitude Mode** when you are using the projector above 4900 feet (1500 meters).

■ Link 21L

This setting is available only if you select **Link 21L** for the **USB Type B** setting. Select **Off** if you want to use the remote as a wireless mouse for a USB-connected computer. See page 35 for more information.

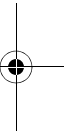
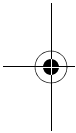
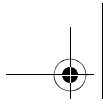
■ Language

Select from nine languages to be used for the projector menus.

note

*If **Direct Power On** is enabled, the power cable is connected, and a power outage occurs, the projector will start when the power is restored.*

Do not use the projector at altitudes above 7500 feet (2,286 meters).

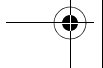
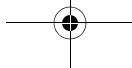


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5

Maintaining the Projector

warning

Before you clean any part of the projector, turn it off and unplug the power cord. Never open any cover on the projector, except the lamp cover. Dangerous electrical voltages in the projector can injure you severely. Do not try to service this product yourself, except as specifically explained in this User's Guide. Refer all other servicing to qualified service personnel.

Your projector needs little maintenance. All you have to do is keep the lens clean. You may also need to clean the air filter and vent. A clogged air filter or vent can block ventilation needed to cool the projector.

The only parts you should replace are the lamp and air filter. If any other part needs replacing, contact your dealer or a qualified servicer.

This chapter covers the following:

- Cleaning the lens
- Cleaning the projector case
- Cleaning the air filter and vent
- Replacing the lamp and air filter
- Transporting the projector

Cleaning the Lens

Clean the lens whenever you notice dirt or dust on the surface.

To remove dirt or smears on the lens, use lens-cleaning tissue. If necessary, moisten a soft cloth with lens cleaner and gently wipe the lens.

Cleaning the Projector Case

Before you clean the case, turn off the projector and unplug the power cord.

- To remove dirt or dust, wipe the case with a soft, dry, lint-free cloth.
- To remove stubborn dirt or stains, moisten a soft cloth with water and a neutral detergent. Then wipe the case.

caution

Do not use wax, alcohol, benzene, paint thinner, or other chemical detergents. These can damage the case.

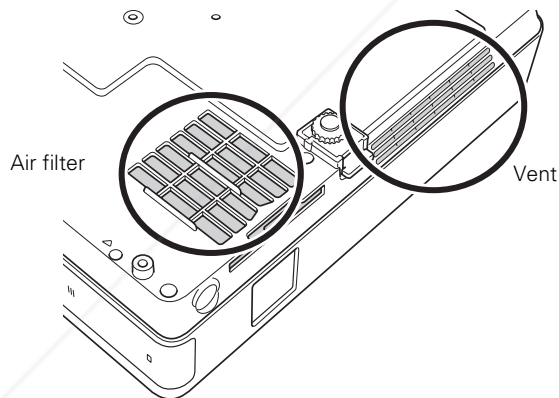
Cleaning the Air Filter and Vent

Your projector includes an air filter to ensure the best performance. If dust collects on the air filter (on the bottom of the projector) or vent (on the front of the projector), clean them as described below. Dust clogs prevent proper ventilation and can cause overheating and damage the projector.

Follow these steps:

1. Turn off the projector. Wait for the **Power** light to stop flashing, then unplug the power cord.
2. To clean the intake vent and filter, use a small vacuum cleaner designed for computers and other office equipment. If you don't have one, gently clean the vent with a soft brush (such as an artist's paintbrush).

You can remove the air filter to clean both sides.



3. If the dirt is difficult to remove or the filter is broken, replace the filter as described on page 64. Contact your dealer or call Epson at 800-GO-EPSON (800-463-7766) to obtain a new filter.

note

To order replacement air filters, request part number V13H13408. See page 11 for ordering information.

note

When you get a replacement lamp for your projector, you should replace the filter.



To check how long the lamp has been in use, see page 71.

Turn off this product when not in use to prolong the life of the projector.

Replacing the Lamp and Air Filter

The life span of the projection lamp is about 2000 hours if **Brightness Control** in the Setting menu is set to **High** (default), and 3000 hours if **Brightness Control** is set to **Low**.

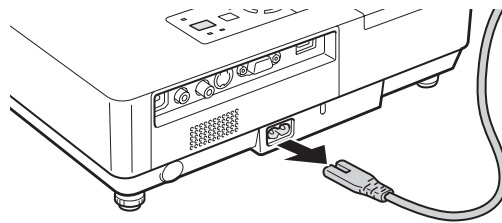
It is time to replace the lamp when:

- The projected image gets darker or starts to deteriorate.
- The message **Replace the lamp** appears on the screen when the lamp comes on and the lamp warning light  flashes orange. To maintain projector brightness and image quality, replace the lamp as soon as possible.
- The lamp warning light  flashes red (the lamp is burnt out).

Contact your dealer or call Epson at 800-GO-EPSON (800-463-7766). Request part number V13H010L38.

Follow these steps to replace the lamp and air filter:

1. Turn off the projector.
2. When the **Power** light stops flashing, unplug the power cord.



3. Let the projector cool for at least an hour (if it has been on). The lamp is extremely hot immediately after use.

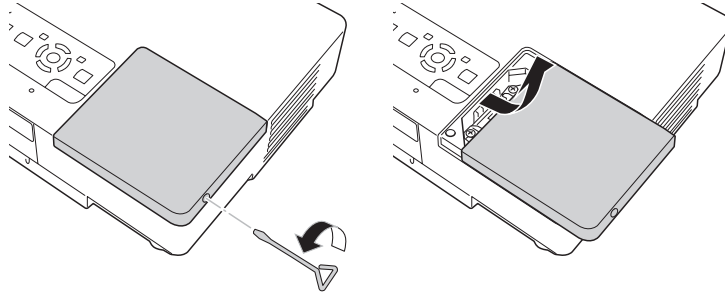
warning

Let the lamp cool fully before replacing it.

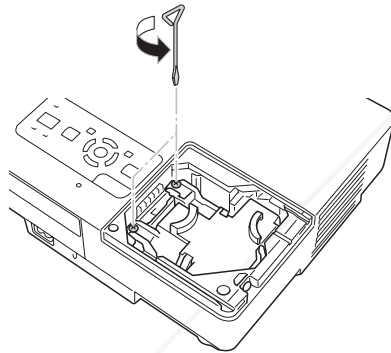
In the unlikely event that the lamp has broken, small glass fragments may be present and should be removed carefully to avoid injury.

If the lamp is used after the replacement period has passed, the possibility that the lamp may break increases. When a lamp replacement message appears, replace the lamp with a new one as soon as possible, even if it is still working.

4. Loosen the lamp cover screw (you don't need to remove it). Then slide the lamp cover to the side and lift it off of the projector.

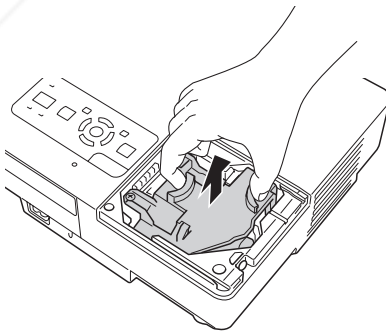


5. Loosen the two screws holding the lamp in place (you can't remove them).



Loosen, but don't remove these screws

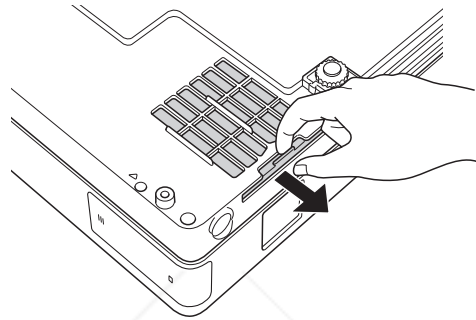
6. Hold the lamp as shown and pull it straight out.



note

^(H9) The lamp(s) in this product contain mercury. Please consult your state and local regulations regarding disposal or recycling. Do not put in the trash.


8. Push down the corner marked **PUSH** until it snaps in.
9. Once the lamp is fully inserted, tighten its screws.
10. Replace the lamp cover, then tighten its screw.
11. Slide out the air filter on the bottom of the projector and remove it.



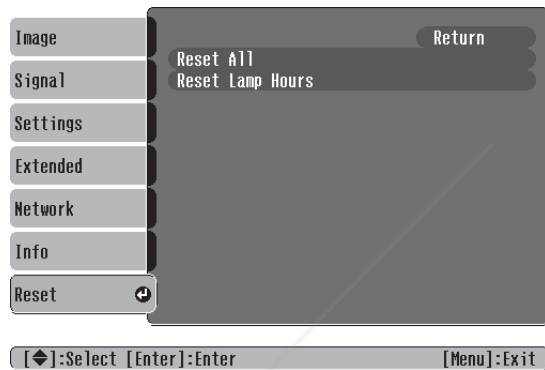
12. Slide in the new air filter until it clicks in place.
13. Reset the lamp timer as described in the next section.

Resetting the Lamp Timer

After you replace the lamp, you need to reset the lamp timer using the projector's menus.

1. Press the **Menu** button on the remote control or on the projector's control panel. You see the main menu.
2. Use the  pointer button on the remote control (or the arrow buttons on the projector) to highlight **Reset**, then press **Enter**.

You see this screen:



3. Select **Reset Lamp Hours** and press **Enter**.
4. When you see the prompt, select **Yes** and press **Enter**.
5. When you're finished, press **Esc** or **Menu** to exit the Menu system.

Transporting the Projector

The projector contains many glass and precision parts. Follow these guidelines to prevent damage:

- When shipping the projector for repairs, use the original packaging material if possible. If you do not have the original packaging, use equivalent materials, placing plenty of cushioning around the projector.
- When transporting the projector a long distance, first place it in a hard-shell shipping case, then pack it in a firm box with cushioning around the case. (An optional case is available from Epson; see page 11.)
- Close the A/V Mute slide (lens cover) to protect the lens.

note

Epson shall not be liable for any damages incurred during transportation.

6

Solving Problems

This chapter helps you solve problems with your projector, and tells you how to contact technical support for problems you can't solve yourself. The following information is included:

- Using the projector's on-screen help system
- What to do when the projector's status lights flash
- Solving projector operation problems
- Solving problems with the image or sound
- Solving problems with the remote control
- Contacting technical support

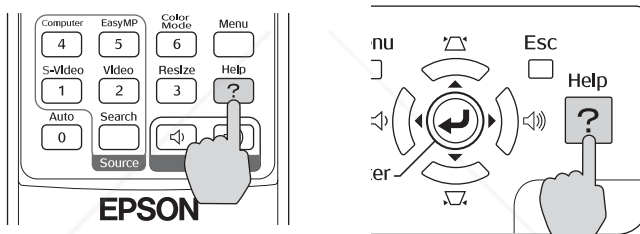
Using On-Screen Help

If the image doesn't look right or your audio isn't working, you can get help by pressing the blue ? Help button on top of the projector or on the remote control. The following choices are available:


- "No Signal." or no image appears on the screen
- There is no sound
- Select a different language

Follow these steps to get help:

1. Press the blue ? Help button on the remote control or on the projector.



You see the Help Menu.

2. Use the  pointer button on the remote control or the navigational buttons on the projector to highlight menu items.
3. Press the **Enter** button on the remote control or on the projector to select the menu item.
4. To exit the help system, press the ? Help button.

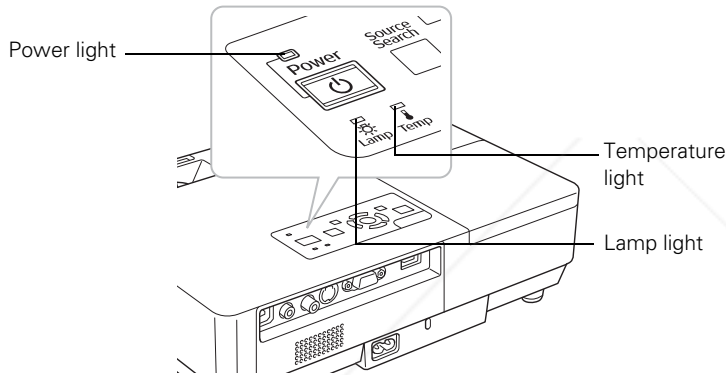
If none of the suggestions solve your problem, see additional solutions to problems in the following sections.

Checking Projector Status

If your projector isn't working correctly, first turn it off, wait for it to cool (the **Power** light stops flashing orange), and unplug it. Then plug the power cord back in and turn on the projector. If this doesn't solve the problem, check the lights on top of the projector.







What To Do When the Lights Flash

The lights on top of the projector indicate the projector's status.











Refer to the following table for a complete description of the projector's status lights:

Status lights

Light	Status	Description
	Orange	The projector is in sleep or standby mode. You can unplug it or press the  Power button to turn it on.
	Flashing green	The projector is warming up. Wait for the image to appear.
	Green	The projector is operating normally.
	Flashing orange	The projector is cooling down. You can't turn it back on (and you should not unplug it) until the light stops flashing and remains orange.
	Red	There is a problem with the projector. Check the other two lights and the information on page 70 to diagnose the problem.

Status lights (continued)

Light	Status	Description
	Flashing red	There is a problem with the fan or temperature sensor. The air filter or vent may be clogged. Clean them or replace the air filter as described on page 61. If this does not resolve the problem, stop using the projector, disconnect the power cable, and contact Epson as described on page 78.
	Flashing orange	Rapid cooling is in progress. Although this is not an abnormal condition, projection will stop automatically if the temperature rises higher. Make sure there is plenty of space around and under the projector for ventilation, and that the air filter and vents are clear.
	Red	The projector is overheating, which turns the lamp off automatically. Wait until the cooling fan stops, then unplug the power cord. Plug the power cord back in and press the  Power button. Make sure the room temperature is not above 95 °F (35 °C), and there is plenty of space around and under the projector for ventilation. The air filter or vent may be clogged. Clean them or replace the air filter as described on page 61. If the projector continues to overheat after you clean the air filter, the problem may be caused by damage to the cooling fan or temperature sensor. Contact Epson for help as described on page 78. Warning: Except as specifically explained in this <i>User's Guide</i> , do not attempt to service this product yourself.
	Flashing orange	It's time to replace the lamp. See page 62 for instructions. If you continue to use the lamp after the replacement warning, there is an increased possibility that the lamp may break.
	Flashing red	The lamp may be burnt out. First make sure the lamp cover is securely installed. If that's not the problem, let the lamp cool, remove the lamp, and replace it as described on page 62. The air filter or vent may be clogged. Clean them or replace the air filter as described on page 61. If this does not resolve the problem, contact Epson as described on page 78.
 	Flashing red	Power is cut off because of an internal problem. Unplug the power cord and contact Epson for help, as described on page 78.

Viewing Lamp Usage and Other Information

Use the Info menu to view information about the display settings of your computer and the number of hours the lamp has been used.

Press the **Menu** button and highlight the **Info** menu.

You see the lamp usage hours and various input signal settings on the right.

The life span of the lamp is about 2000 hours if the **Brightness Control** setting in the Setting menu is set to **High** (default), and 3000 hours if the **Brightness Control** setting is set to **Low**. Make sure you have a spare lamp handy if the usage hours on this menu are close to the life span of your lamp.

note

The information displayed depends on the input signal currently selected.

Solving Projector Operation Problems

The power doesn't turn on.

- If the projector doesn't turn on when you press the **Power** button, make sure the power cable is connected to the projector and plugged into a working electrical outlet.
- The power cable may be defective. Disconnect the cable from the outlet and contact Epson as described on page 78.
- Check to see if the **A/V Mute Slide** is closed.

The buttons on the projector don't work.

If the **Operation Lock** function has been enabled, you can't use the buttons on the projector. Try using the remote control instead. See page 56 for information about the **Operation Lock** function.

Solving Problems with the Image or Sound


No image appears on the screen.


- Check that the **Power** light is green, not flashing.
- The projector may be in standby or sleep mode. If the **Power** light is orange, press the **Power** button to turn the projector on.
- If the power was switched off and then on again, the projector may be cooling down. Wait until the **Power** light stops flashing and remains orange; then press the **Power** button again.
- Press the **A/V Mute** button on the remote control to make sure the picture has not been turned off temporarily.
- Open the **A/V Mute Slide**, if it is closed.
- The attached computer may be in sleep mode or displaying a black screen saver. Try pressing a key on the computer.
- If you are projecting from a DVD player or other video source, make sure you turn it on and press its **Play** button.

You've connected a computer and see a blue screen with the message No Signal displayed.

- Make sure the cables are connected correctly, as described on page 34.
- Try restarting your computer.
- If you've connected a computer and one or more video sources, you may need to press the **Source Search** button on the projector or one of the source buttons on the remote control to select the correct source. Allow a few seconds for the projector to sync up after pressing the button.

If you're using a PC notebook:

- Hold down the Fn key on the keyboard and press the function key that lets you display on an external monitor. It may have an icon such as , or it may be labelled CRT/LCD. Allow a few seconds for the projector to sync up after pressing it. Check your notebook's manual or online help for details.

On most systems, the  key lets you toggle between the LCD screen and the projector, or display on both at the same time.

- Depending on your computer's video card, you might need to use the Display utility in the Control Panel to make sure that both the LCD screen and external monitor port are enabled. See your computer's documentation or online help for details.

If you're using Mac OS X:

1. Open System Preferences.
2. Click Display or Displays.
3. Click Detect Displays.
4. Make sure the VGA Display or Color LCD dialog box is selected.
5. Click the Arrangement or Arrange tab.
6. Make sure the Mirror Displays checkbox is selected.

The message Not Supported is displayed.

- Make sure the correct input signal is selected in the Signal menu (see page 48).
- Make sure your computer's resolution doesn't exceed UXGA (1600 × 1200) and the frequency or refresh rate is supported by the projector (see page 86). If necessary, change your computer's resolution setting as described below.

Only part of the computer image is displayed.

- Press the Auto button on the remote control.
- Make sure the image Position setting is correct in the Signal menu. See page 49 for more information.



FixYourDLP.com

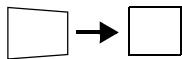
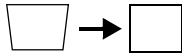
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note

Some notebooks cannot display the same resolution and/or aspect ratio on both the LCD screen and the projected image.

- Press the **Resize** button on the remote control.
- Press the **Esc** button on the remote control to cancel the E-Zoom function.
- Make sure your computer's resolution setting is correct. Ideally, it should be 1024 × 768 to match the projector's native resolution. If this option isn't available, select one of the other compatible video formats listed on page 86.
 - **Windows:**
Right-click the desktop, select **Properties**, click the **Settings** tab, and select a different resolution.
 - **Mac OS X:**
Open **System Preferences**, click **Displays**, and select a different resolution.
- You also may need to modify existing presentation files if you created them for a different resolution. See your software documentation for specific information.

The image isn't square, but keystone-shaped.

- If the top or bottom of the image is broader, press the  or  button on the projector until the image is square.
- If the projector is angled toward the screen from the left or right, the image will be broader on one side. Center the projector in front of the middle of the screen, facing the screen squarely.
- Enable the Auto Keystone feature to automatically fix the shape. See page 50.

The image contains static or noise.

- If you're using a computer cable longer than 6 feet (1.8 meters), or an extension cable, the image quality may be reduced.
- Keep your computer and video cables away from the power cord as much as possible to prevent interference.

- The video signal may be split between the computer and the projector. If you notice a decline in the projected image quality when the image is displayed simultaneously on your notebook computer and the projector, turn off the notebook's LCD display.
- Make sure the correct input signal is selected in the Signal menu (see page 49).

The image is blurry.

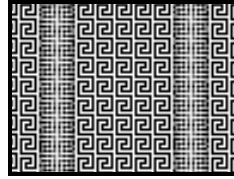
- There may be dirt or smears on the lens. Clean the lens as described on page 60.
- Adjust the focus using the focus ring (see page 21).
- Make sure the lens is not fogged by condensation. You may need to wait before using the projector after moving it from a cold environment to a warm environment.
- Adjust the **Sharpness** setting on the Image menu (see page 47). When you change video settings, you should be able to see the effect on the screen immediately. If you're projecting from a computer, you may also need to adjust the tracking and sync as described in the next section. If you don't like the new settings, you can always select **Reset** to return to the factory default settings.

You see vertical bands or the image still looks blurry after trying the solutions in the previous section.

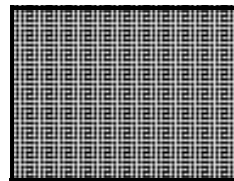
- If you're projecting from a computer and displaying an image that contains a lot of fine detail, you may notice vertical bands or some of the characters may look heavy or blurred. Press the **Auto** button on the remote control to reset the projector's tracking and sync settings.
- If further adjustment is needed, you can fine-tune the **Tracking** and **Sync** settings manually using the Signal menu, as described on page 49.

Fill the screen with an image containing fine detail, such as a pattern to appear as your desktop background, or try projecting black text on a white background.

2. Adjust the Tracking to eliminate vertical bands.



3. Adjust the Sync setting to increase the image sharpness.




note



Because of the different technologies used, your projected image may not exactly match the colors on your notebook or computer monitor.

The image is too light or dark, or colors are incorrect.

- If you're displaying a computer image, use the **Color Mode** option in the projector's Image menu to adjust the color (see page 46).
- If you're displaying video, adjust the **Color Adjustment** and **Color Mode** settings on the Image menu. You can also try adjusting the **Color Saturation**, **ABS Color Temp**, and **Tint** settings on the Image menu.
- Try adjusting the **Brightness** and **Contrast** settings on the Image menu.
- Check your computer display settings to correct the color balance.
- The projector's lamp may need to be replaced. See page 62 for instructions.

There is no sound, or the sound is not loud enough.

- Press the  button on the projector or remote control to increase the volume.
- Make sure **A/V Mute** is not enabled. (The **A/V Mute** button may have been pressed.)
- Make sure the **A/V Mute Slide** is open.

- Try adjusting the **Volume** setting in the Setting menu (see page 50).
- If you're using a VCR or other video source, make sure the volume is not turned all the way down or muted. Also, make sure the cables are connected correctly, as described on page 41.
- If your presentation includes computer audio, make sure the volume control on your computer is not turned all the way down or muted. If you're using the audio cable, make sure it is securely connected to both the projector and your computer's  headphone jack or  audio out jack.
- Make sure the Windows volume controls on your computer are not turned all the way down or set to Mute. You may be able to check this by clicking the volume control in your Windows system tray (lower right corner of the screen).
- Make sure the Mac volume controls are not turned all the way down. You may be able to adjust the volume from your menu bar (top right corner of the screen) or via the volume control function keys.

Solving Problems with the Remote Control

The projector doesn't respond to remote control commands.

- The remote control's batteries may not be installed correctly or may be low on power. To change the batteries, see page 26.
- Make sure you are within about 20 feet (6 meters) of the projector and within range of the projector's front or back sensor (approximately 30° to the left or right and 15° above or below).
- Dim the room lights and turn off any fluorescent lights. Make sure the projector is not in direct sunlight. Strong lighting, especially fluorescent lights, may affect the projector's infrared receivers. Also, turn off any nearby equipment that emits infrared energy, such as a radiant room heater.

- If any buttons are held for longer than 30 seconds, the remote enters sleep mode. Release any button that is held to wake the remote.

Where To Get Help

Epson provides these technical support services:

Internet Support

Visit Epson's support website at www.epson.com/support and select your product for solutions to common problems. You can download utilities and documentation, get FAQs and troubleshooting advice, or e-mail Epson with your questions.

Visit <http://www.presentersonline.com> to access tips, templates, and training for developing successful presentations.

Speak to a Support Representative

To use the Epson PrivateLine Support service, call (800) 637-7661 and enter the PIN on the included Epson PrivateLine Support card. This is the fastest way of speaking to a live representative, and it's free. This service is available 6 AM to 6 PM, Pacific Time, Monday through Friday, for the duration of your warranty period.

You may also speak with a projector support specialist by dialing one of these numbers:

- U.S.: (562) 276-4394, 6 AM to 6 PM, Pacific Time, Monday through Friday.
- Canada: (905) 709-3839, 6 AM to 6 PM, Pacific Time, Monday through Friday.

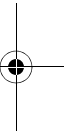
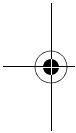
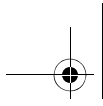
Days and hours of support are subject to change without notice. Toll or long distance charges may apply.

Before you call for support, please have the following information ready:

- Product name (EX100)
- Product serial number (located on the projector)
- Proof of purchase (such as a store receipt) and date of purchase
- Computer or video configuration
- Description of the problem

Purchase Supplies and Accessories

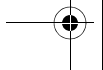
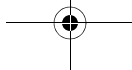
You can purchase screens, carrying cases, or other accessories from an Epson authorized reseller. To find the nearest reseller, call 800-GO-EPSON (800-463-7766). Or you can purchase online at www.epsonstore.com (U.S. sales) or www.epson.ca (Canadian sales).



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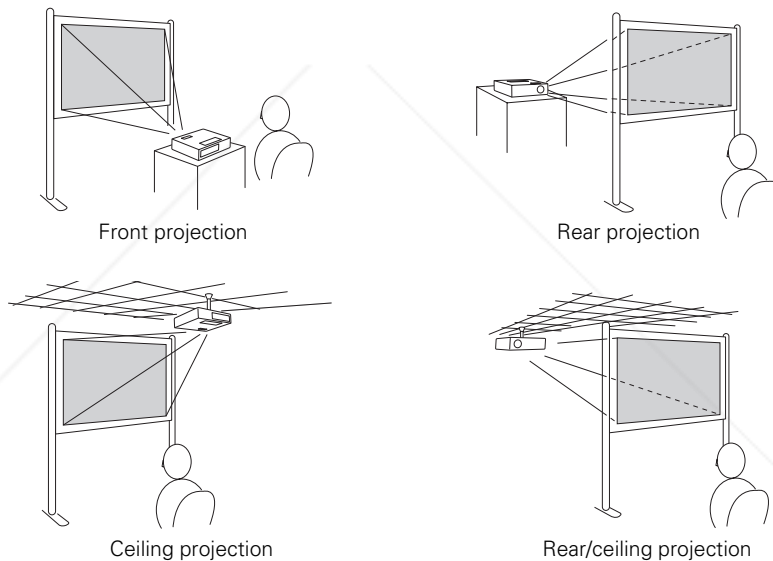
80 *Solving Problems*



A *Projector Installation*

This appendix provides guidelines on installing the projector in a permanent location, such as a theater or conference room.

The projector can be installed for four different viewing setups: front projection, ceiling projection, rear projection onto a semi-transparent screen, or rear/ceiling projection, as shown:



To project from overhead, you'll need the optional ceiling mounting hardware; see page 11 for ordering information. You'll also need to select **Front/Ceiling** or **Rear/Ceiling** as the Projection option in the projector's Extended menu to flip the image upside-down. To project from the rear, onto a semi-transparent screen, select **Rear** or **Rear/Ceiling** (see page 57).

If you're mounting the projector on the ceiling and you place it above screen level, you'll have to tilt the projector down to position the image on the screen. This causes the image to lose its square shape. You can correct the distortion using the **Keystone** function in the projector's menu system (see page 50).

If you place the projector so that the base of the lens is level with the bottom of the screen, the image should be square and you won't have to adjust it. If you place the lens lower than the bottom of the screen, you'll have to tilt the projector upward if you want to fill the whole screen with the image.

B

Technical Specifications

General

Type of display	Epson poly-silicon TFT active matrix
Resolution (native format)	1024 × 768 pixels (XGA)
Color reproduction	16.8 million colors
Light Output (brightness)	High mode: White light output 2700 lumens (ISO 21118 standard) Color light output 2700 lumens Low mode: White light output 2100 lumens (ISO 21118 standard) Color light output 2100 lumens
Contrast ratio	400:1
Image size	30 to 300 inches (0.7 to 7.6 meters)
Projection distance	3.2 to 39.7 feet (1.0 to 12.1 meters)
Projection methods	Front, rear, upside down (ceiling mount)
Internal sound system	1 W monaural
Optical aspect ratio	4:3 (horizontal:vertical)
Zoom ratio	1:1.2
Noise level	35 dB in Low Brightness mode, 40 dB in High Brightness mode
Keystone correction	Automatic (manual adjustment capability ±30° vertical keystone correction)
Mouse compatibility	Supports USB (type B)

Projection Lamp

Type	UHE (Ultra High Efficiency)
Power consumption	170 W
Lamp life	Approx. 2000 hours (High Brightness mode) Approx. 3000 hours (Low Brightness mode)
Part number	V13H010L38

Remote Control

Range	20 feet (6 meters)
Batteries (2)	Alkaline AAA

Dimensions

Height	2.7 inches (68 mm), feet retracted
Width	10.7 inches (273 mm)
Depth	7.6 inches (193 mm)
Weight	3.5 lb (1.6 kg)

Electrical

Rated frequency	50/60 Hz AC
Power supply	100 to 120 VAC, 2.7 A 200 to 240 VAC, 1.2 A
Power consumption	Operating: 100 to 120 VAC, 244 W 200 to 240 VAC, 228 W Standby: 100 to 120 VAC, 3.8 W 200 to 240 VAC, 5.1 W

Environmental

Temperature	Operating: 41 to 95 °F (5 to 35 °C) Storage: 14 to 140 °F (-10 to 60 °C)
Humidity (non-condensing)	Operating: 20 to 80% RH Storage: 10 to 90% RH
Operating altitude	0 to 7,500 ft (0 to 2,286 m)

Safety

United States	FCC 47CFR Part 15B Class B (DoC) UL60950 Third Edition
Canada	ICES-003 Class B CSA C22.2 No. 60950
CE Marking	Directive 73/23/EEC Directive 89/336/EEC IEC 60950 Third Edition EN 55022, EN 55024



Pixelworks™ DNX™ ICs are used in this projector.

Compatible Video Formats

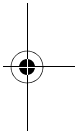
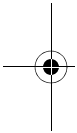
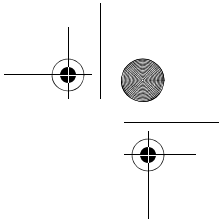
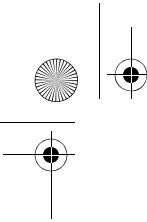
The projector supports NTSC, PAL, and SECAM international video standards, as well as the monitor display formats listed below.

To project images output from a computer, the computer's video card must be set at a refresh rate (vertical frequency) that's compatible with the projector. Some images are automatically resized to display in the projector's "native" format (XGA). The frequencies of some computers may not allow images to display correctly; see your computer's documentation for details.

Mode	Refresh Rate (Hz)	Resolution
VGA EGA	70	640 × 350*
VGA—60	60	640 × 480*
VESA—72	72	640 × 480*
VESA—75	75	640 × 480*
VESA—85	85	640 × 480*
SVGA—56	56	800 × 600*
SVGA—60	60	800 × 600*
SVGA—72	72	800 × 600*
SVGA—75	75	800 × 600*
SVGA—85	85	800 × 600*
XGA—60	60	1024 × 768
XGA—70	70	1024 × 768
XGA—75	75	1024 × 768
XGA—85	85	1024 × 768
SXGA1—70	70	1152 × 864*
SXGA1—75	75	1152 × 864*
SXGA1—85	85	1152 × 864*
SXGA2—60	60	1280 × 960*
SXGA2—75	75	1280 × 960*
SXGA2—85	85	1280 × 960*
SXGA+60	60	1400 × 1050*
SXGA+75	75	1400 × 1050*
SXGA+85	85	1400 × 1050*
SXGA3—60	60	1280 × 1024*
SXGA3—75	75	1280 × 1024*
SXGA3—85	85	1280 × 1024*
UXGA—60	60	1600 × 1200*

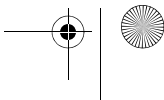
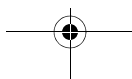
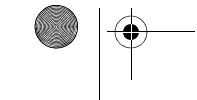
Mode	Refresh Rate (Hz)	Resolution
iMAC VGA	117	640 × 480*
iMAC SVGA	95	800 × 600*
iMAC XGA	75	1024 × 768
MAC13	67	640 × 480*
MAC16	75	832 × 624*
MAC19	75	1024 × 768
MAC19-60	59	1024 × 768
MAC21	75	1152 × 870*
NTSC	60	—
NTSC 4:43	60	—
PAL	50	—
N-PAL	50	—
M-PAL	60	—
PAL—60	60	—
SECAM	50	—
HDTV (720p)	60	—
HDTV (720p)	50	—
HDTV (1080i)	60	—
HDTV (1080i)	50	—
TV480i	60	—
TV480i	50	—
SDTV (480p)	60	—
SDTV (480p)	50	—

*The image is resized using Epson's SizeWise™ Technology.



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C


Notices

This appendix includes safety instructions and other important information about your projector.

Important Safety Instructions

Follow these safety instructions when setting up and using the projector:

- Do not place the projector on an unstable cart, stand, or table.
- Do not use the projector near water or sources of heat.
- Use the type of power source indicated on the projector. If you are not sure of the power available, consult your dealer or power company.
- Place the projector near a wall outlet where the plug can be easily unplugged.
- Do not hold the plug with wet hands.
- Take the following precautions for the plug. Failure to comply with these precautions could result in sparks or fire: Do not insert the plug into an outlet with dust present. Insert the plug firmly into the outlet.
- Do not overload wall outlets, extension cords, or integral convenience receptacles. This can cause fire or electric shock.
- Do not place the projector where the cord can be walked on. This may result in fraying or damage to the plug.
- Unplug the projector from the wall outlet before cleaning. Use a damp cloth for cleaning. Do not use liquid or aerosol cleaners.
- Do not block the slots and openings in the projector case. They provide ventilation and prevent the projector from overheating. Do not operate the projector on a sofa, rug, or other soft surface, or in a closed-in cabinet unless proper ventilation is provided.
- Never push objects of any kind through the cabinet slots. Never spill liquid of any kind into the projector.

- Except as specifically explained in this *User's Guide*, do not attempt to service this product yourself. Refer all servicing to qualified personnel. Opening or removing covers may expose you to dangerous voltages and other hazards.
- Unplug the projector from the wall outlet and refer servicing to qualified service personnel under the following conditions: When the power cord or plug is damaged or frayed. If liquid has been spilled into the projector, or if it has been exposed to rain or water. If it does not operate normally when you follow the operating instructions, or if it exhibits a distinct change in performance, indicating a need for service. If it has been dropped or the housing has been damaged.
-  The lamp(s) in this product contain mercury. Please consult your state and local regulations regarding disposal or recycling. Do not put in the trash.
- Unplug the projector during lightning storms or when it will not be used for extended periods.
- Do not place the projector and/or remote control on top of heat-producing equipment or in a hot location.
- If you use the projector in a country other than where you purchased it, use the correct power cord for that country.
- Do not stand on the projector or place heavy objects on it.
- Do not use the projector outside of the required temperature range of 41 to 95 °F (5 to 35 °C). Doing so may cause an unstable display and could lead to projector damage.
- Do not store the projector outside of the required temperature range of 14 to 140 °F (-10 to 60 °C) or in direct sunlight for long periods of time. Doing so may cause damage to the case.

WARNING: The cords included with this product contain chemicals, including lead, known to the State of California to cause birth defects or other reproductive harm. *Wash hands after handling.* (This note is provided in accordance with Proposition 65 in Cal. Health & Safety Code §25249.5 and following.)

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.

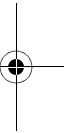
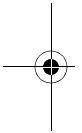
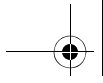
WARNING

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.

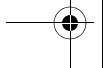
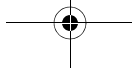


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