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HP ep9010 Series Instant Cinema Digital Projector

User's Guide



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Hewlett-Packard Company
Digital Projection and Imaging
1000 NE Circle Blvd.
Corvallis, OR 97330

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Setting up

Safety precautions



WARNING: Read and observe these precautions and all others in this manual to reduce the risk of injury and equipment damage.

- Do not look directly into the lens when the lamp is on.
- Do not expose the projector to rain or moisture, and do not use it near water.
- Keep paper, plastic, and combustible material at least 0.5 m (2 ft) away from the projector lens and exhaust vents.
- Do not allow liquid, food, or small objects to get inside the projector. If material gets inside the projector, contact HP for assistance.
- Do not put anything on top of the projector. Do not place any liquids where they might spill on the projector.
- Do not block any vents on the projector. Do not place the projector near any source of heat, such as a radiator or amplifier.
- Use only an approved power cord rated for the voltage and current marked on the product label. Do not overload any outlet or extension cord. Do not circumvent the grounding prong on the power cord.
- Route all cables so they are not located where people can step on them or trip on them.
- Place the projector flat on its base on a sturdy surface. Do not stand the projector on its front surface.
- Do not touch the lens with your fingers. See “Cleaning the projector lens” on page 51. Use a soft, dry cloth to clean the projector case.
- Do not open the projector except as instructed by this manual, and only after allowing the projector to cool down.
- If the projector is damaged in any way, contact HP for assistance.

What's in the box?


Before setting up your projector, be sure your shipping box includes the following items. If the shipping box does not contain any of the following items, contact HP.



After you open the box and remove the contents, save the box in case you must ship the projector.



Identifying the contents of the box

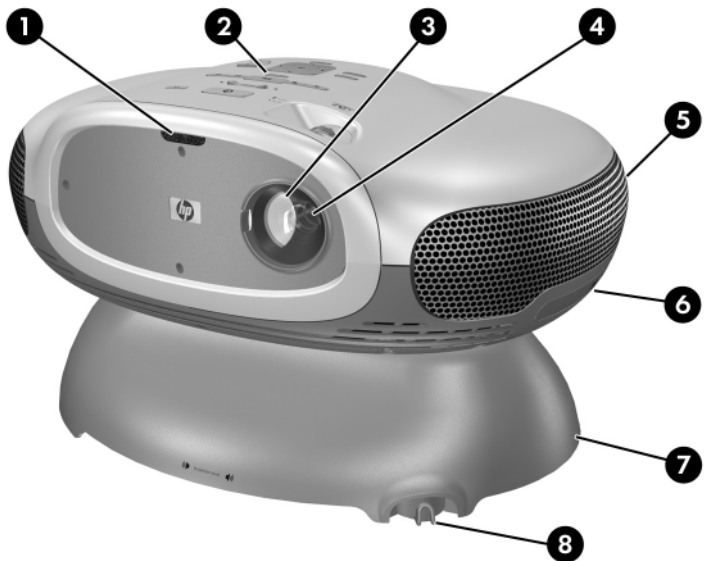
Item	Function
1 Projector	Displays images.
2 Remote control (includes two AAA batteries)	Controls projector.
3 SCART-to-S-Video adapter	Connects a SCART source output to an S-video or composite-video cable.
	 Included only with certain models.

Identifying the contents of the box *(Continued)*

Item	Function
④ DVI-to-VGA adapter	Connects a VGA cable to the DVI port on the projector.
⑤ User Guide package	Contains documentation for the setup and use of the projector.
⑥ <i>Quick Setup Guide</i>	Provides instructions to help get started.
⑦ Power cord	Connects projector to power source.

Identifying common features

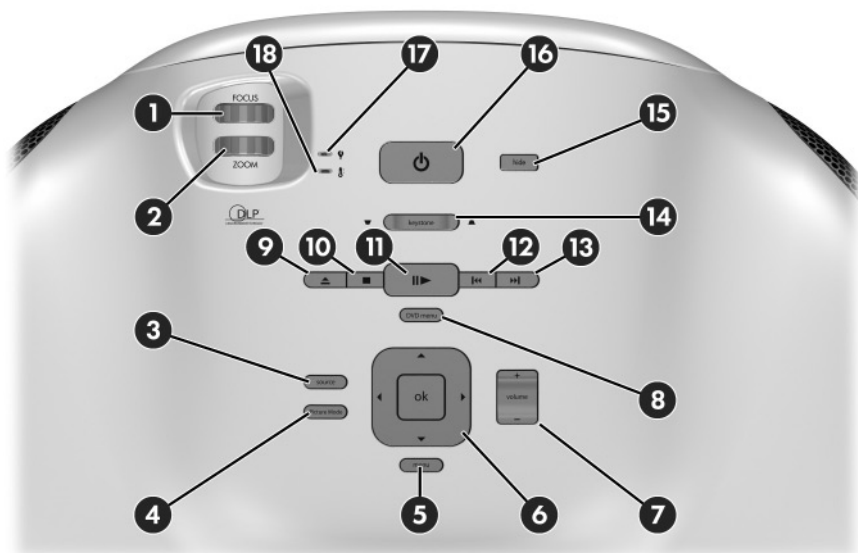
Projector at a glance



Identifying major components

Item	Function
❶ Infrared port	Receives signals from the remote control.
❷ Button panel	Contains control buttons and indicator lights.
❸ Lens cover	Protects the lens.
❹ Lens	Projects the image.
❺ Speakers (4)	Produce stereo sound.
❻ DVD tray	Plays a DVD or CD.
❼ Base with subwoofer	Produces low-frequency sound effects.
❽ Tilt Lever	Levels the projector.

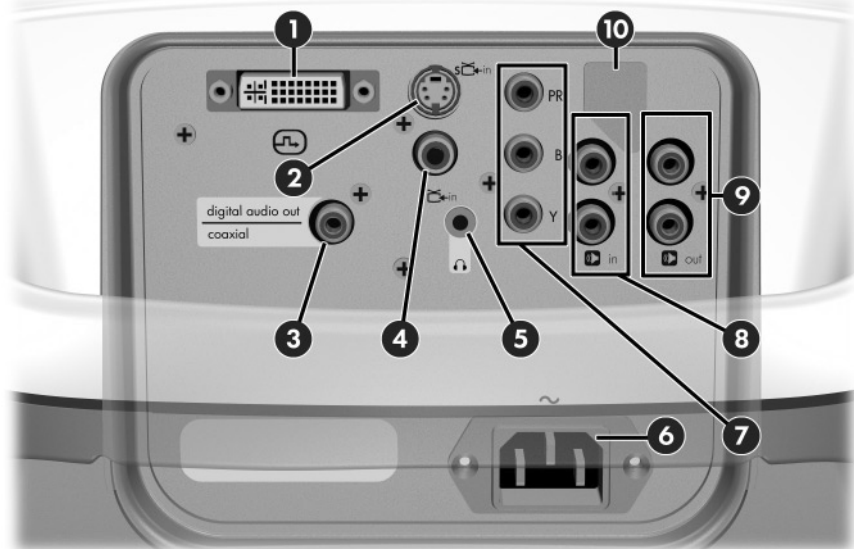
Projector buttons and lights



Identifying the projector buttons and lights

Item	Function	
①	Focus ring	Focuses at distance of 1 to 10 m (3 to 33 ft).
②	Zoom ring	Enlarges picture size from 100% to 116%.
③	Source button	Displays picture from the next input port.
④	Picture mode button	Selects the next picture and color combination—can be customized.
⑤	Menu button	Opens or closes the on-screen projector menu.
⑥	Navigation buttons: up, down, left, right, and ok	Select items in the projector menu or DVD menu.
⑦	Volume adjustment	Raises or lowers the sound level.
⑧	DVD menu button	Opens the menu on a DVD.
⑨	Eject button	Opens or closes the DVD tray.
⑩	Stop button	Stops playing a DVD or CD.
⑪	Play/pause button	Plays a DVD or CD or pauses playing.
⑫	Next button	Plays the next item on a DVD or CD.
⑬	Previous button	Displays the previous item on a DVD or CD.
⑭	Keystone adjustment	Adjusts picture to eliminate slanted sides.
⑮	Hide button	Blanks picture, mutes sound, pauses internal DVD player.
⑯	Power button	Turns the projector on or off.
⑰	Lamp indicator light	Warns if the lamp is bad.
⑱	Temperature indicator light	Warns if the projector is too hot.

Back panel



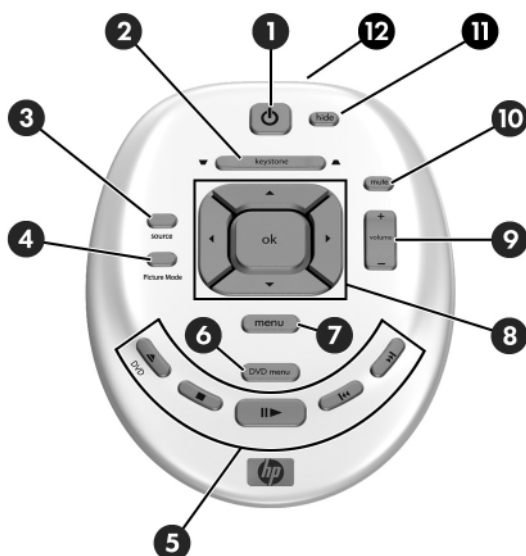
Identifying back panel components

Item	Function
❶ DVI input port	Connects DVI video source. Also supports computer video source.
❷ S-video input port	Connects S-video source.
❸ Digital audio-out port	Connects to a 5.1 digital sound system.
❹ Composite-video input port	Connects composite-video source.
❺ Headphone output port	Connects headphones.
❻ Power cord socket	Connects power cord to projector.
❼ Component-video input port (YPbPr)	Connects component-video source.
❽ Audio-in port	Connects stereo audio source.
❾ Audio-out port	Connects to stereo sound system.
❿ Service port	For service use only.

Remote control



Before using the remote control, install two AAA batteries. See “Replacing the battery in the remote control” on page 53.



Identifying features of the remote control

Item	Function
① Power button	Turns the projector on or off.
② Keystone adjustment	Adjusts the picture to eliminate slanted sides.
③ Source button	Displays picture from the next input port.
④ Picture mode button	Selects the next picture and color combination—can be customized.
⑤ DVD buttons	Control the DVD player. See “Projector buttons and lights” on page 10.
⑥ DVD menu button	Opens the menu on a DVD.

Identifying features of the remote control (*Continued*)

	Item	Function
7	Menu button	Opens or closes the on-screen projector menu.
8	Navigation buttons: up, down, left, right, and ok	Select items in the projector menu or DVD menu.
9	Volume adjustment	Raises or lowers the sound level.
10	Mute button	Turns sound on or off.
11	Hide button	Blanks picture, mutes sound, pauses internal DVD player.
12	Infrared lens	Sends signal from the remote control to the projector.

Accessories

Enjoy more from your home theater with HP projector accessories. You can purchase accessories at <http://www.hp.com> or through your projector dealer.

- HP mobile screens with built-in handles—designed to be easy to carry and set up anywhere you need them.
- HP power cables—allow you to connect in any region.
- HP cables—allow you to connect all audio-video equipment.
- HP replacement lamp—brings your projector up to factory-fresh brightness.

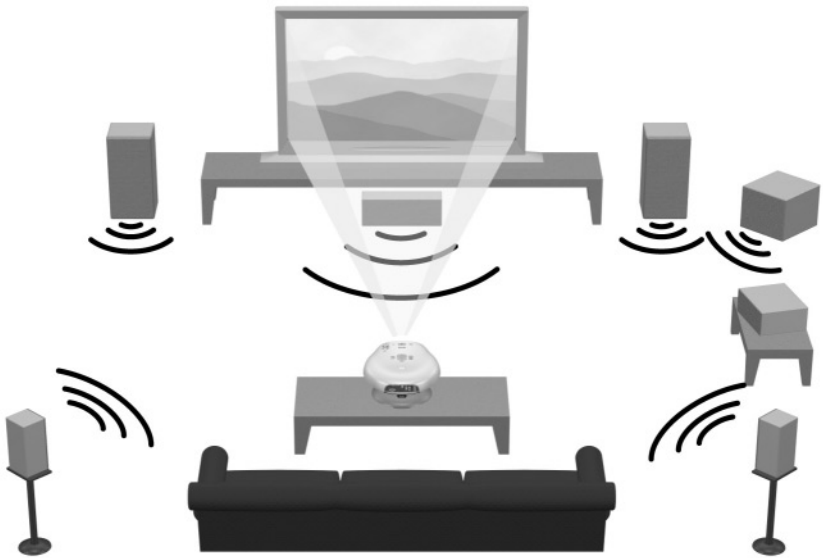
Setting up the projector

Planning your layout

Consider the following suggestions when planning your room layout:

- Select the projector and screen positions and the screen size according to your room layout and the distance chart below. The zoom control on the projector gives you some flexibility.
- Be sure the projector is centered on the screen and perpendicular to it. Otherwise, the picture might look lopsided.

- For the best picture, consider purchasing a quality projection screen. Some screens are designed for wide-angle viewing, while others are designed to concentrate brightness in the center. A flat surface colored white or light gray will also give acceptable results.
- For the most comfortable viewing, center your seating around the projection line-of-sight. Depending on the screen material, viewing from far off center might be unsatisfactory.
- The best viewing distance is roughly the same distance from the screen as the projector, but personal preferences vary widely.
- If possible, place the bottom of the screen slightly above the level of the projector.
- Design the room so you can control the ambient light. Most people prefer viewing with minimal lighting, but you can have acceptable results if you limit ambient light on the screen. Bright room lighting might cause a washed-out picture.
- The most common video source is a DVD player, but sources can also include devices, such as an audio/video receiver, VCR, hard disk video recorder, video gaming device, or satellite receiver.
- Depending on your personal setup, try to locate devices to minimize the lengths of cables connecting them to the projector. If any cable is more than 3 m (10 ft), consider using high-quality, low-loss cables for best video and audio quality.
- For the ultimate home-theater experience, consider including a 5.1 surround sound system, such as a Dolby Digital system. This system has five speakers and a subwoofer.
- For an external sound system, see the following diagram for a possible speaker layout. Place all front speakers at the same distance from the listener. Place the subwoofer near a wall or corner. Place surround speakers at least as high as the listener's head. Experiment with the speaker placement.



For best picture quality, place the projector 1.5 to 5 m (5 to 16 ft) from the screen.

Image size relative to distance from the screen

Image size (diagonal)		Image size (width)		Distance (lens to screen)	
(inches)	(meters)	(inches)	(meters)	(inches)	(meters)
30	0.8	24	0.6	41 to 48	1.1 to 1.2
40	1.0	32	0.8	55 to 64	1.4 to 1.6
60	1.5	48	1.2	83 to 96	2.1 to 2.4
80	2.0	64	1.6	110 to 128	2.8 to 3.3
100	2.5	80	2.0	138 to 160	3.5 to 4.1
120	3.0	96	2.4	166 to 192	4.2 to 4.9
150	3.8	120	3.0	207 to 240	5.3 to 6.1
180	4.6	144	3.7	248 to 288	6.3 to 7.3
200	5.1	160	4.1	276 to 320	7.0 to 8.1
240	6.1	192	4.9	331 to 384	8.4 to 9.8
270	6.9	216	5.5	372 to 396	9.5 to 10.0

Connecting power

1. Place the projector on a stable platform located 1 to 10 m (3 to 33 ft) in front of the screen. Ideally, the platform should be lower than the bottom of the screen.



Do not place the projector on a soft surface, such as carpet or loose cloth. This will severely limit the sound from the subwoofer.

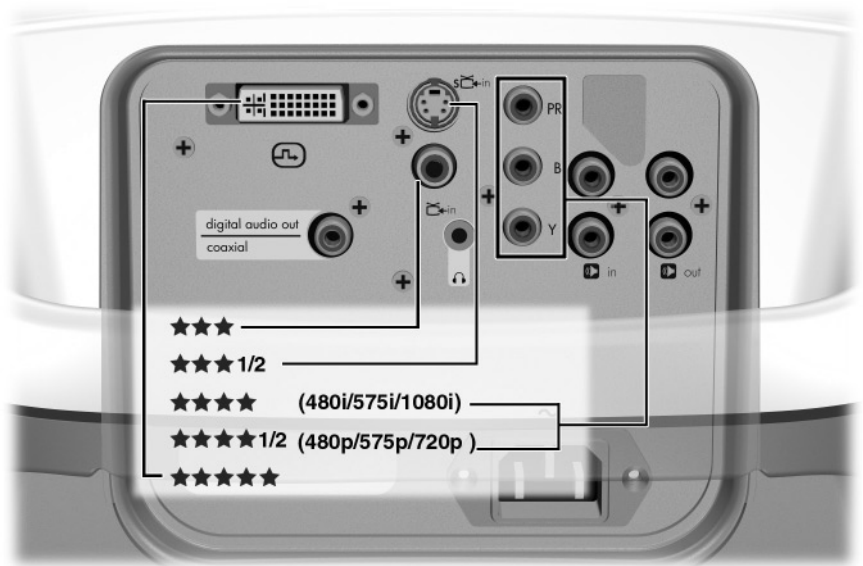
2. Connect one end of the power cord to the back of the projector **1** and the other end to a grounded electrical outlet **2**.



Connecting a video source

The internal DVD player provides optimal picture quality and the convenience of a single remote control. If you connect an external video source, you should consider picture quality.

Many video devices have more than one type of output port. When you connect the device to the projector, choose the connection that provides the best picture quality. Relative picture qualities are indicated by stars in the following diagram. If you have several video sources, you can connect them to the different ports, or you can connect them to an audio/video receiver and connect the receiver to the projector (see “Connecting several video sources” on page 27).



The cables shown in the following sections are not included with the projector. If you do not have an external audio system, you can connect the audio output from the external video source to the projector audio input.



If you already have a home theater system with a TV, you can probably connect the projector in place of the TV as the viewing device.

Connecting a component-video source

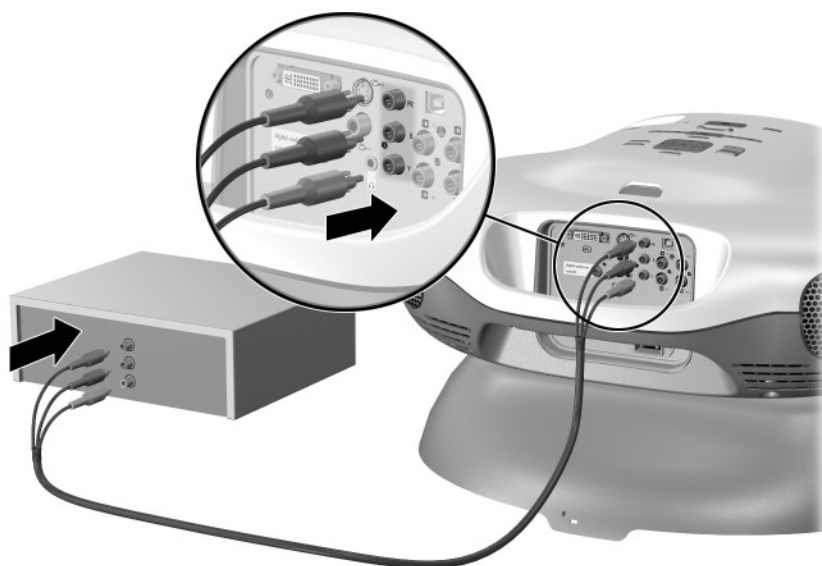
Examples: Cable box, DVD player, satellite receiver, and audio-video receiver

Requires:

- Component-video cable



- Many DVD players and other high-quality video devices provide component video output. The three RCA connectors might be labeled YPbPr or YCbCr.
 - If possible, configure the video source to use progressive scan output, such as 480p, 575p, or 720p. For additional information, refer to the user documentation provided with the video source.
-

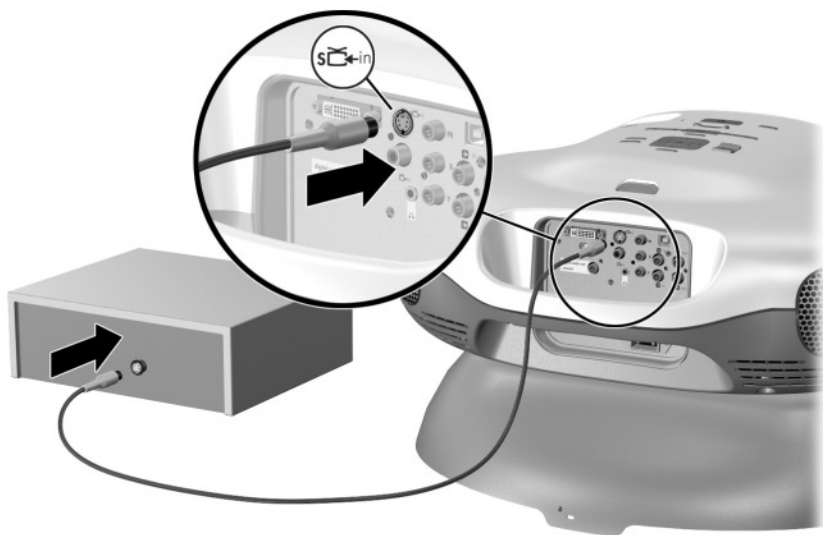


Connecting an S-video source

Examples: DVD players, VCRs, cable boxes, camcorders, and video gaming devices

Requires:

- S-video cable

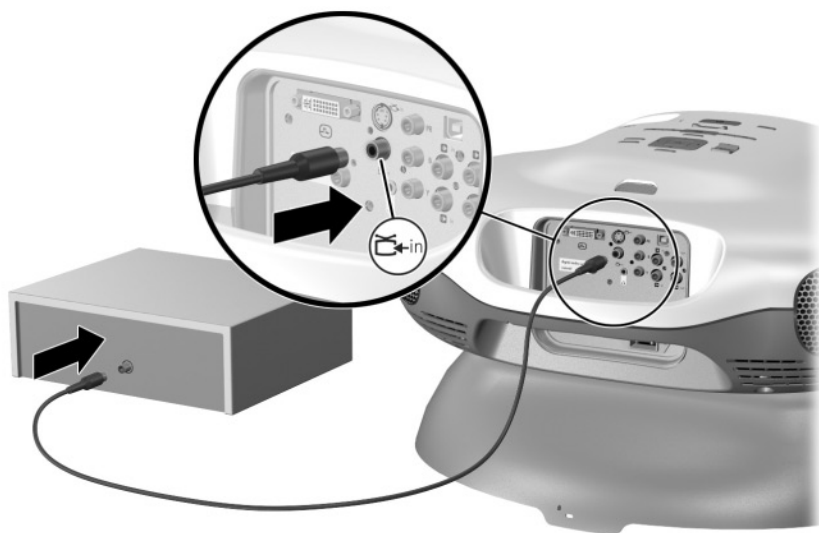


Connecting a composite-video source

Examples: VCRs, DVD players, audio-video receivers, and video gaming devices

Requires:

- Composite-video cable

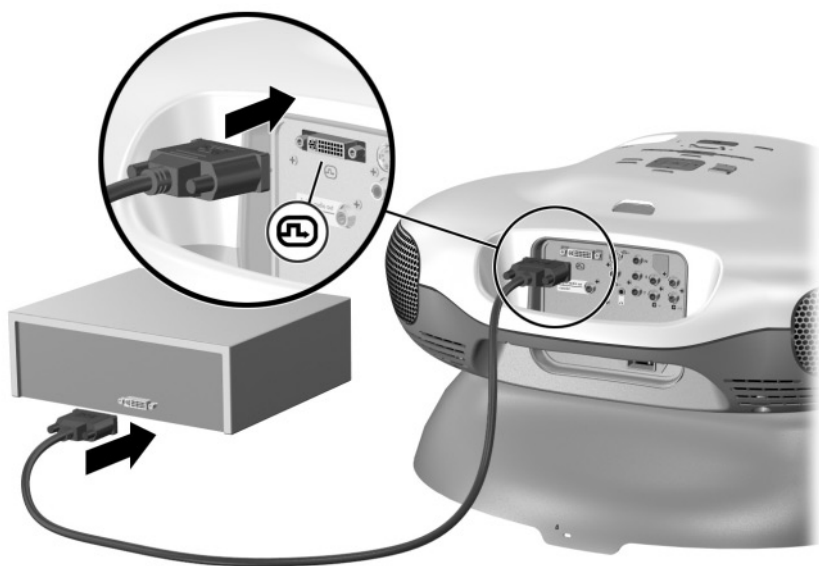


Connecting a DVI source

Examples: Cable boxes, satellite receivers, and some computers

Requires:

- DVI cable

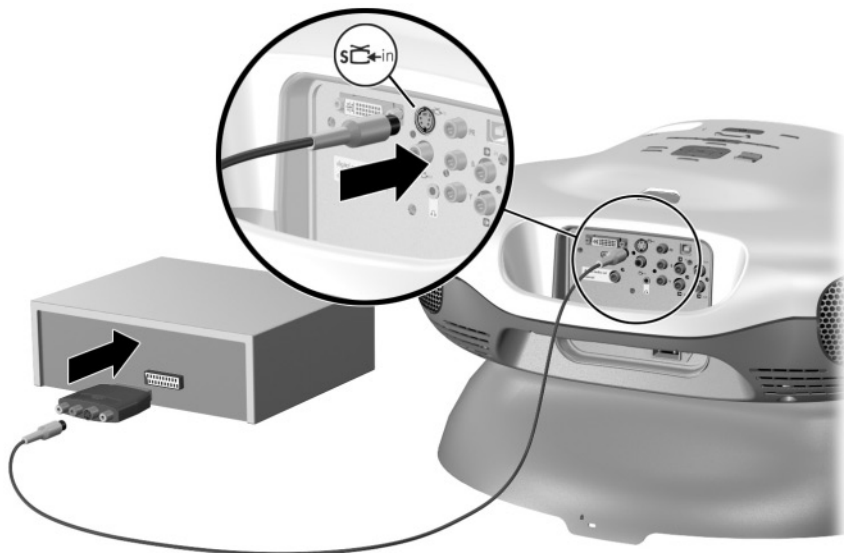


Connecting a SCART source

Examples: VCRs and DVD players

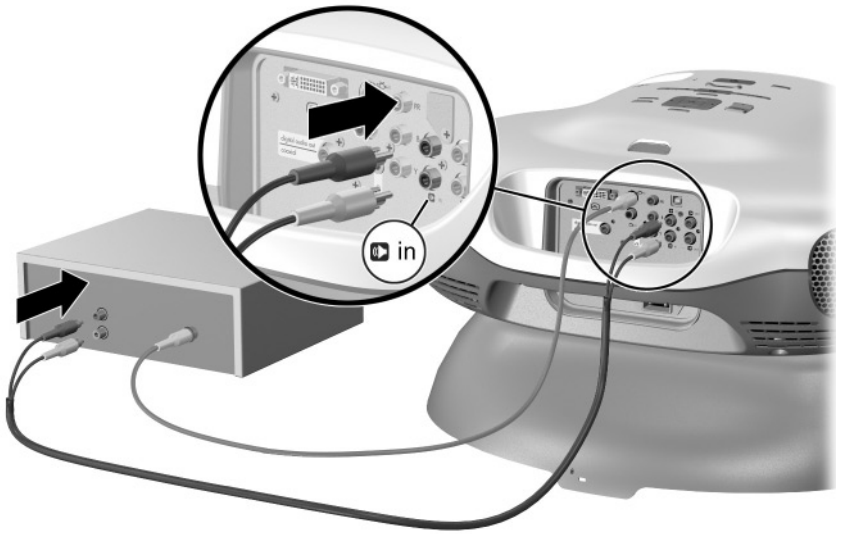
Requires:

- S-video cable (or composite-video cable if source does not provide S-video output)
- S-video-to-SCART adapter (included with certain models)



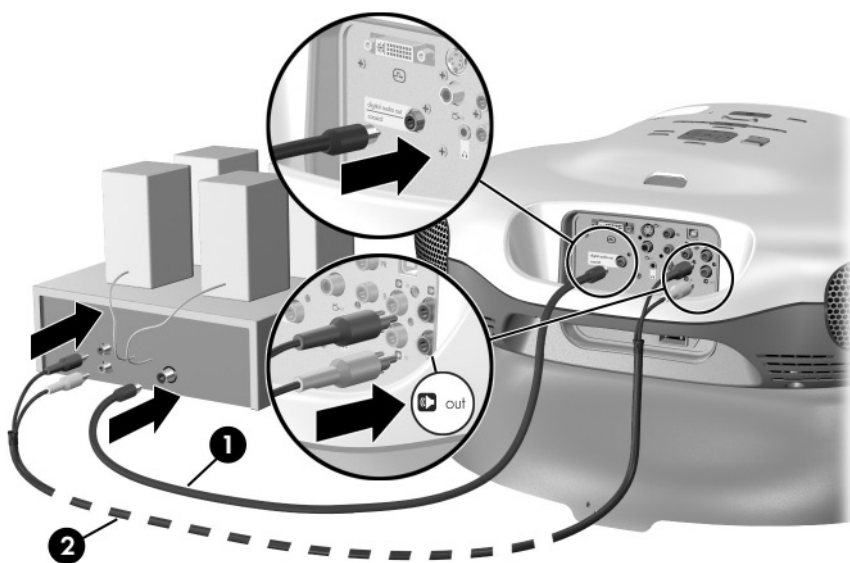
Connecting a sound system

A high-quality 2.1 sound system is built into the projector. No connections are required when using the internal DVD player. If you connect an external video source to the projector, you can also connect its audio output to the projector's audio input.



If you want to listen to the audio in private, connect a stereo headphone to the headphone output. This disables the built-in speakers.

If you have a home theater system or external sound system, you can connect the audio output from the internal DVD player to that system. You can connect a 5.1 surround sound system with five speakers and a subwoofer for full surround sound (connection ❶ in the following illustration). The digital audio output is active only when using the internal DVD player. A digital audio connection requires a digital coaxial cable, not an ordinary audio cable. Or you can connect a stereo sound system to the projector (connection ❷ in the following illustration).



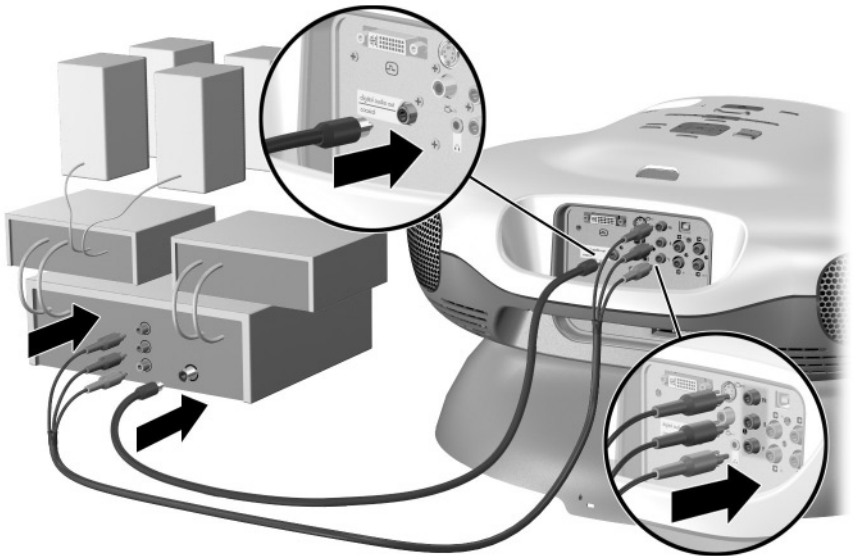
If you connect an external sound system, turn off the internal speakers. Press the **menu** button, go to **Sound > Internal speakers**, and turn them off.

Connecting several video sources

If you have several video sources, connect them to an audio/video receiver or switch box, then connect the video output from the receiver or switch box to the projector using the highest quality connection available. Also connect the audio outputs from all sources to the receiver, switch box, or sound system.



Connect the projector's digital audio output or stereo audio output to the receiver, switch box, or sound system. This sends the audio from the internal DVD player to the sound system.

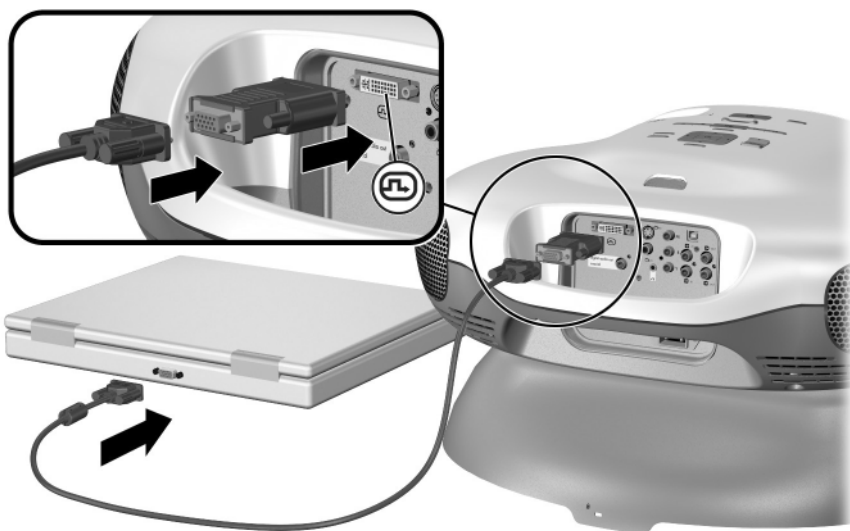


Connecting a computer

You can connect a computer to the projector and show the computer display on the screen. This requires a DVI-to-VGA adapter (included with the projector) and a VGA cable (not provided).

Requires:

- DVI-to-VGA adapter
- VGA cable



See “Showing a computer screen” on page 43.



If the computer display does not appear on the projector, you might have to press a combination of keys on the computer to turn on the computer's VGA output. For example, on some computers you must press Fn+F4 or Fn+F5. For instructions, refer to the user documentation provided with your computer.

Turning the projector on and off

Turning the projector on

1. Be sure the power cord is connected.
2. Open the lens by sliding the lens cover **1** to the left.
3. Press the power button **2** on the projector or on the remote control.

The projector takes a minute or so to warm up. The power button blinks during warm-up.



It is normal for parts of the projector and the air coming out of the projector to be very warm. If the projector starts to overheat, the temperature warning light will turn on and the projector will shut down.

Turning the projector off

1. Press the power button on the projector or remote control to turn off the projector. Do not hold the button down.

The power button blinks during the cool-down period, then the projector turns off. Even though the projector is off, it uses a small amount of power internally.

2. If you want, disconnect video and audio equipment from the projector during the cool-down period or after the power button stops blinking.



CAUTION: Do *not* disconnect power until the projector has cooled down (the fan stops) and the power button stops blinking. Otherwise, you might shorten the life of the lamp.

3. If you must unplug or remove the projector, wait until the power light stops blinking, then unplug the power cord.

If you try to turn on the projector again or insert a disc in the DVD tray during the cool-down period, the projector does not turn on. Wait until the cool-down period ends and the power button stops blinking.

Moving the projector

When moving the projector:

- Allow the projector to cool down before moving it. Then disconnect all cables.
- Avoid bumps and jolts. Use a padded container when possible.
- Observe temperature and humidity limits (see “Specifications” on page 69). If the projector is cold, allow it to warm gradually to avoid condensation.

Making basic adjustments

This section provides instructions for making basic adjustments to the projector.

Selecting a source

If the picture from your video source does not appear on the screen, you can quickly select the correct source.

- Press the **source** button one or more times—until you see the picture or you see the name of the video port where the source is connected.

You should also be sure the video source is turned on and playing video.

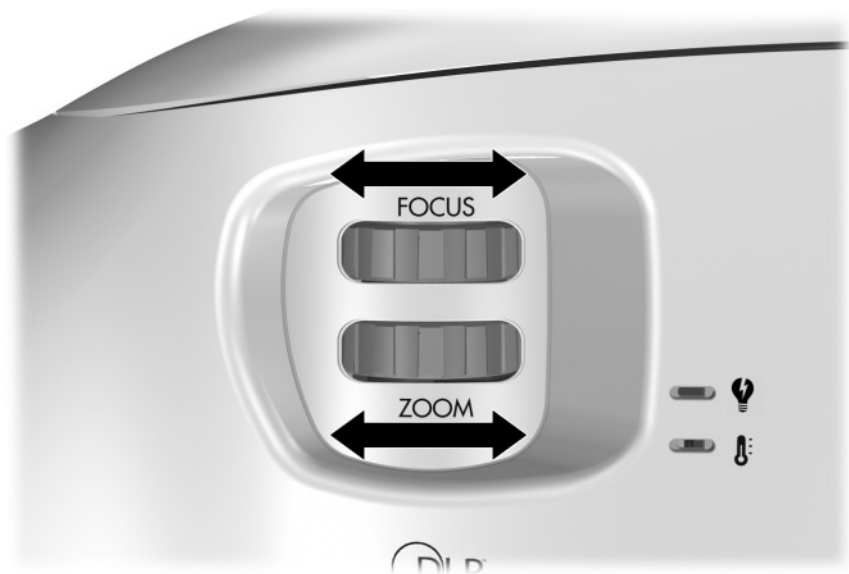
Aiming the projector

- To raise or lower the projected picture on the screen, tilt the projector body on the base ❶.
- To level the picture on the screen, move the handle on the adjustable foot ❷.



Adjusting the focus and zoom

1. Rotate the focus ring until the image becomes clear. The projector can be focused at distances of 1 to 10 m (3 to 33 ft).
2. Rotate the zoom ring to adjust the picture size from 100 to 116%.

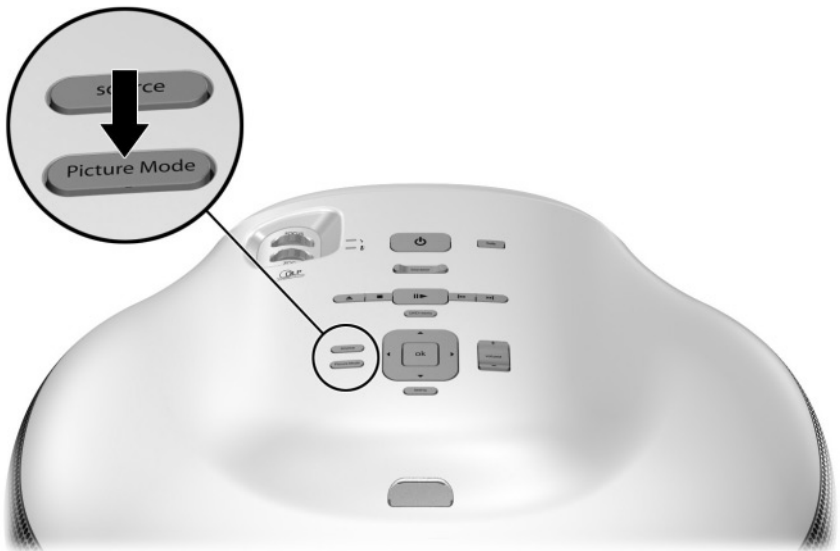


If the picture does not fit the screen, you might have to move the projector closer to or farther away from the screen.

Changing the picture mode

When you are showing video from a video source, you can quickly choose a different picture mode to make adjustments to the picture. Picture modes can control properties such as color and size. They let you easily choose the best settings for ambient lighting and the type of video content (see “Adjusting the picture” on page 45).

- Press the **picture mode** button one or more times to select the picture mode that gives the best picture.



You can also customize the picture modes so they are best for your video sources:

1. Press the **picture mode** button to select the picture mode you want to adjust.
2. Press **menu** and go to **Picture > Customize picture mode**.
3. Adjust the settings until you are satisfied with the picture.
4. Press **menu** to close the on-screen menu.

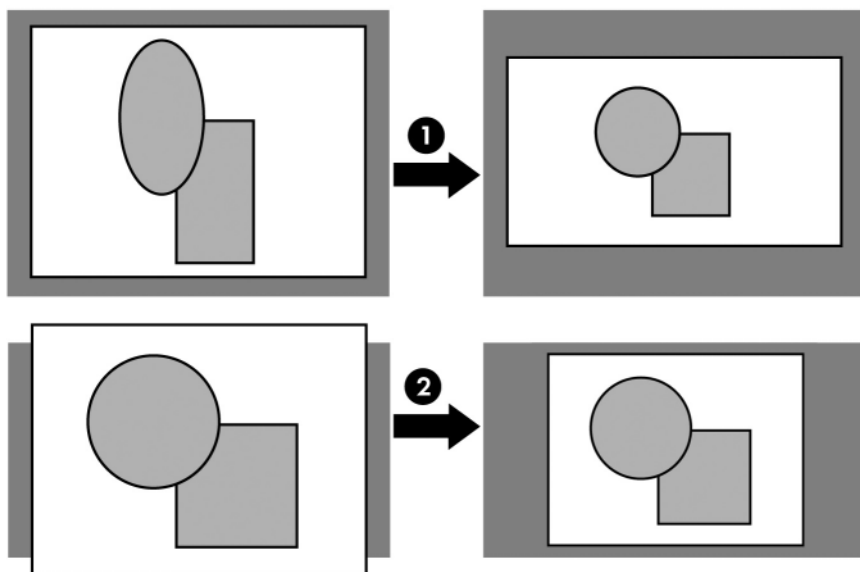
Adjusting the shape of the picture

Depending on the type of video source you are viewing, the picture might or might not always look correct or fit on the screen:

- If the active video device sends widescreen output to the projector, press **menu**, go to **Picture > Shape settings**, and set **Widescreen input** to **Yes**. See ❶ in the following diagram.
- If the video device sends standard output, set **Widescreen input** to **No**.



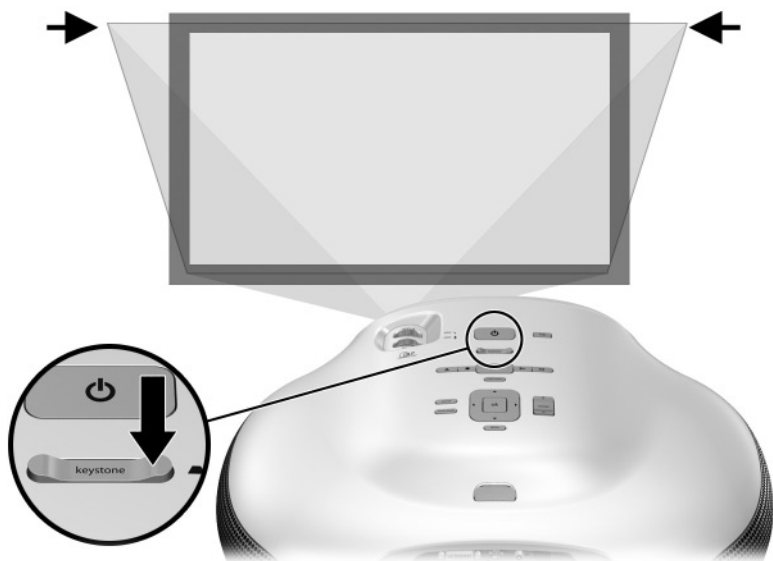
If you show widescreen pictures on a wide projection screen, a standard picture might not fit on the screen. One solution is to change the current picture mode so it makes a smaller picture. Press **menu**, go to **Picture > Customize picture mode**, and set **Stretch** to **Reduced**. See ❷ in the following diagram.



Adjusting a slanted picture

If the projector is tilted up or down, the sides of the picture on the screen might slant in or out, even though the top and bottom are level. Keystone adjustment corrects this problem:

- Press the **keystone** adjustment on the projector or on the remote control until the picture looks correct.



You can also make the keystone adjustment in the on-screen menu. Press **menu**, and go to **Picture > Shape settings > Keystone** to adjust the picture.



If the top and bottom of the picture slant in different directions, move the projector until it is straight in front of the screen, not off to one side.

Adjusting the volume

You can control the volume of the projector's speakers and headphone output:

- To change the volume of the projector's speakers, press the **volume** adjustment on the projector or remote control.
- To change the volume of only the subwoofer, press **menu**, go to **Sound > Subwoofer**, and make the adjustment.
- To turn the sound on or off, press the **mute** button on the remote control, or press **menu**, go to **Input > Mute**, and mute the sound.

Playing DVDs and CDs


Using the built-in DVD player

The internal DVD player is capable of playing several types of video, graphics, and audio discs, as listed in the following table. Discs not listed in the table are not supported.





Type of disc	Comments
DVD video	Standard video, single- and dual-layer. For full effect of Dolby Digital and Dolby Pro Logic surround sound, you can connect an external surround sound system. To play DTS surround sound, you must connect an external sound system that supports DTS sound.
VCD SVCD	Video CD. Video plays when a video CD is inserted.
JPG disc Kodak Picture CD	Shows as an automatic slide show. See “Showing pictures” on page 40. The file system must comply with the ISO 9660 standard.
Digital audio CD	Standard audio CD. Songs are played track by track. You can play songs with a song list displayed or with the lamp off. Any other information stored on the CD is ignored.
MP3 on CD	Songs can be played only with the lamp on. If JPG pictures are also on the CD, you can show them as a slide show accompanied by the MP3 music. See “Showing pictures” on page 40.

The following types of media are supported: DVD-ROM, DVD-R, DVD+R, DVD-RW, DVD+RW, CD-R, and CD-RW. Recording conditions might affect whether individual discs are playable.

Playing a DVD

1. Press the DVD eject  button on the projector or remote control to open the tray.
2. Place the DVD on the tray.



3. Press the DVD eject  button again to close the tray. If the projector is off, it turns on and starts warming up. Then it starts playing the DVD.
4. If a DVD menu displays, press the navigation buttons to make a selection, and then press **ok**.
5. Press the play/pause  button to pause or resume playing.
6. Press the stop  button to stop playing.
7. Press the eject  button to open the tray and remove the DVD, and then press it again to close the tray.

If you want to adjust the picture, see “Changing the picture mode” on page 33.



The internal DVD player and all DVDs are coded with a DVD region code. These codes must match to play the DVD. If the DVD code does not match the player's code, the DVD does not play and the projector displays an error message.

Using special play options

The internal DVD player provides several features for controlling DVD playback.

To do this...	Press this...
Pause play	Play/pause II▶ button.
Resume play	Play/pause II▶ button.
Jump to the next scene (chapter)	Next ▶▶ button.
Jump to start of current scene (chapter)	Previous ◀◀ button.
Jump to the previous scene (chapter)	Previous ◀◀ button two times.
Play in slow motion	Play/pause II▶ button to pause, then right ▶ button one or more times to increase slow-motion speed. Press play/pause to end slow motion.
Play one frame at a time	Play/pause II▶ button to pause, then next ▶▶ button or previous ◀◀ button for each frame. Press play/pause to end single-frame play.
Play in fast motion	Right ▶ button one or more times to increase speed. Press play/pause to end fast motion.
Play backwards (slow, normal, or fast speeds)	Play/pause II▶ to pause and left ◀ one or more times. Press play/pause to end backward play.
Pause, mute, and hide the picture	hide button. Press any button to resume the show.




Opening the DVD menu










Many DVDs contain a menu in which you can select viewing options.

1. Press the **DVD menu** button on the projector or remote control.
2. Press the navigation buttons to make a selection, then press **ok**.

Showing pictures

If you insert a compatible picture disc in the DVD player, you can show the pictures as a slide show.

1. Press the DVD eject  button on the projector or remote control to open the tray.
2. Place the picture disc on the tray.
3. Press the DVD eject  button again to close the tray. If the projector is off, it turns on and starts warming up. Then it starts showing the pictures, one at a time.
4. Press the buttons shown in the following table to control the slide show.
5. Press the DVD eject  button to open the tray and remove the disc, then press it again to close the tray.




To do this....	Press this...
Skip to next picture	Next  button.
Skip to previous picture	Previous  button.
Pause the show	Play/pause  button.
Resume the show	Play/pause  button.
Pause and hide the picture	hide button. Press any button to resume the show.
Browse list of pictures	Stop  or DVD menu button. Press up  , down  , left  , and right  buttons to highlight a picture, then press ok to show it, play/pause to continue slide show.














If the picture disc contains a supported sound track in addition to the pictures, the DVD player allows you to play the sound track during the slide show. If you press the **hide** button, the sound turns off also.

Playing audio CDs

1. Prepare the projector:
 - If you want to see a list of songs on the screen, turn on the projector.
 - If you have a standard music CD and want the lamp to be off during play, turn off the projector.

2. Press the DVD eject  button on the projector or remote control to open the tray.
3. Place the CD on the tray.
4. Press the DVD eject  button again to close the tray.
 The projector selects the internal DVD player as the active source and begins playing the first track. If the lamp is on, the projector shows the list of songs on the CD.
5. Press the buttons shown in the following table to control the songs. If the lamp is off, some controls are not applicable.
6. Press the DVD eject  button to open the tray and remove the CD, then press it again to close the tray.

To do this...	Press this...
Play a song from the list	Up  or down  to highlight the song and then ok .
Skip to next song	Next  button.
Skip to start of current song	Previous  button.
Skip to previous song	Previous  button two times.
Pause the music	Play/pause  button.
Resume playing music	Play/pause  button.
Stop playing	Stop  button.
Stop playing, go to track 1	Stop  button two times.
Mute the sound	mute button.
Hide the list, pause the music	hide button. Press any button to resume.
Play at fast speeds	Right  one or more times. Press play/pause for normal speed.
Play backwards at fast speeds	Left  one or more times. Press play/pause for normal speed.

Showing video

This chapter describes how to show video from external sources connected to the projector. See the previous chapter for information about using the internal DVD player.

Showing the video source

1. Be sure the video device is connected to the projector and turned on. See “Connecting a video source” on page 19.
2. Be sure the projector is set up, turned on, and adjusted. See “Making basic adjustments” on page 31.
3. Press the **source** button on the projector or remote control one or more times to select the input port where the device is connected.
4. Use the controls on the video device to start and control the show.

If you want to adjust the picture, see “Changing the picture mode” on page 33.

Hiding or showing the picture

1. Press the **hide** button on the projector or remote control to blank the picture and turn off the projector speakers. This does not affect the video source, which continues playing.
2. Press any button to show the picture again and turn on the projector speakers.

Showing a computer screen

1. Be sure the computer is connected to the projector and turned on. See “Connecting a computer” on page 28.
2. Be sure the projector is set up, turned on, and adjusted. See “Making basic adjustments” on page 31.

3. Press the **source** button on the projector or remote control one or more times to select the DVI port.
4. If the computer display is not shown on the projector, you might have to turn on the computer's video output port. For example, some computers require you to press a key combination, such as Fn+F4 or Fn+F5. See the user documentation provided with your computer.

If you want to adjust the picture, see “Changing the picture mode” on page 33.

Adjusting the projector

Adjusting the picture and sound

Adjusting the picture

The on-screen menu provides many settings that allow you to fine-tune the picture.

1. Press **menu**, and go to **Picture**.
2. Change the picture adjustments as needed.

From the **Picture** menu, you can change many picture options, such as brightness, contrast, and picture shape, as well as customize the picture modes.

To get descriptions for all available picture adjustments, see “Picture menu” on page 47.



To exit from any on-screen menu or adjustment, press the **menu** button.

Adjusting the sound

1. Press **menu**, and go to **Sound**.
2. Set the sound adjustments.

From the **Sound** menu, you can adjust sound settings, such as mute, volume, and speaker operation.

To get descriptions for all available audio adjustments, see “Sound menu” on page 49.

Adjusting the projector setup

1. Press **menu**, and go to **Setup**.
2. Set the setup adjustments as needed.

From the Setup menu, you can select settings, such as menu language, projector position, and menu timeout.

To get descriptions for all available setup adjustments, see “Setup menu” on page 49.

Using the on-screen menu

Changing settings using the on-screen menu

You can change the on-screen menu settings with the buttons on either the projector or the remote control.

1. Press **menu** on the projector or remote control. This displays the on-screen menu.
2. Press up ▲ or down ▼ to highlight the desired menu icon, then press right ► to move into that menu.
3. Press up ▲ or down ▼ to highlight that setting, then press **ok** to begin adjusting the setting.
4. Press left ◀ or right ▶, or press up ▲ or down ▼, to adjust the setting, as prompted.
5. Press **ok** to return to the menu.
6. To go to a different menu, press left ◀ and select a menu.
7. To close the on-screen menu, press **menu**.

If you do nothing for a period of time, the on-screen menu closes. To change the amount of time until the on-screen menu closes, press **menu** and select **Setup > Timeout for menu**.



To exit from any on-screen menu or adjustment, press the **menu** button.

Input menu

For a visual aid, see “Back panel” on page 12.

Input menu

Internal DVD	Shows the video from the internal DVD player.
Component	Shows the source connected to the component-video port (YPbPr).
S-Video	Shows the source connected to the S-video port.
Composite	Shows the source connected to the composite-video port.
DVI	Shows the source connected to the DVI port.

Picture menu

Some picture adjustments are available only when certain input ports are in use. Unavailable adjustments are shown in gray in the on-screen menu.

Picture menu

Color settings...	Adjusts the picture and colors.
Brightness	Brightens or darkens the picture.
Contrast	Sets the difference between light and dark areas.
Sharpness	Sharpens or softens the picture.
Color saturation	Adjusts the intensity of colors.
Tint	Shifts colors toward red or green.
Color space	For certain component inputs, selects the type of color standard used by the source.
Reset color settings	Restores these color settings to their default settings.
Shape settings...	Adjusts the shape of the picture.
Keystone	Corrects the slanted sides of the picture. This compensates for a projector that is too high or low relative to the screen.
Reset keystone	Resets the keystone correction to zero (no correction).

Picture menu (*Continued*)

Widescreen input	Sets whether a widescreen (16:9) input device is in use. Adjusts the height of the picture accordingly.
VGA settings...	Adjusts settings for a computer input.
Auto-sync	Resynchronizes the projector to the input signal. This can compensate for any change in the signal.
Frequency	Adjusts the timing of the projector relative to the computer.
Tracking	Adjusts the phase of the projector relative to the computer.
Vertical offset	Adjusts the picture up or down within the projection area.
Horizontal offset	Adjusts the picture left or right within the projection area.
Picture Mode	Adjusts color and picture settings to one of several combinations designed for different types of viewing situations. You can use a different picture mode for each source or each viewing environment. You can also customize each picture mode.
Customize picture mode...	Changes settings associated with the current picture mode.
Picture enhancement	Refines the color, lightness, and other characteristics of the picture.
Color temperature	Shifts colors toward red or blue.
Stretch	Selects how the picture fits on the screen: <ul style="list-style-type: none">■ Best fit automatically fits the picture without stretching it.■ 1-to-1 shows each picture dot as one projected dot.■ Reduced fits a standard-shape picture onto a widescreen projection screen.
Picture shift	Moves the picture within the projection area. This is useful if you are viewing a picture that is smaller than the full projection area, such as a widescreen movie.
Reset picture shift	Resets the picture shift to zero (centered).
Reset this picture mode	Restores the current picture mode to its default settings.

Sound menu

Sound menu

Mute	Turns off sound output.
Volume	Adjusts the loudness of the speakers.
Subwoofer	Adjusts the loudness of only the subwoofer.
Internal speakers	Sets whether the internal speakers are turned on.
Reset sound settings	Restores sound settings to their default settings.

Setup menu

Setup menu

Language	Selects the language used by the on-screen menu.
Timeout for menu	Sets how many seconds the on-screen menu waits for input before it closes.
Slide interval	Sets how many seconds each picture shows before changing to the next picture.
DVI compatibility	Sets the configuration of DVI port. If a computer connected to the DVI port always projects a low-resolution image, use VGA only .
Reset lamp hours	For a new lamp, resets the hours of use.
Reset all settings	Restores all menu settings to factory default settings.

Help menu

Help

	Displays information and status for the projector.
Diagnostics...	Show tests for checking the operation of the projector and the remote control.

Maintaining the projector

Getting the projector status

To get the projector status, press the **menu** button on the projector or remote control and go to **Help**. This screen shows information and status for the projector.

Cleaning the projector lens

You can clean the front lens of the projector using the following recommendations. You cannot clean any of the internal surfaces.

- To minimize the risk of damaging or scratching the lens surface, blow dust particles off the lens with clean, dry, deionized air.
- If this method does not work, use the following method:
 - a. Wipe the lens in a single direction with a clean, dry cloth. Do not wipe back and forth across the lens.
 - b. If the cloth is dirty or smears the lens, wash the cloth. If the cloth is still dirty after washing it or the fabric is damaged, replace it.



Cleaning requires special consideration:

- Do not spray any type of fluid or cleaner directly on the lens surface. Cleaners might damage the lens.
 - Do not use fabric softener when washing a cleaning cloth or softener sheets when drying the cloth. Chemicals on the cloth might damage the surface of the lens.
 - Do not store a cleaning cloth in contact with the lens for a long time because doing so contaminates the lens with dye from the cloth. The cloth can be contaminated if left in the open air.
-

Replacing the lamp module

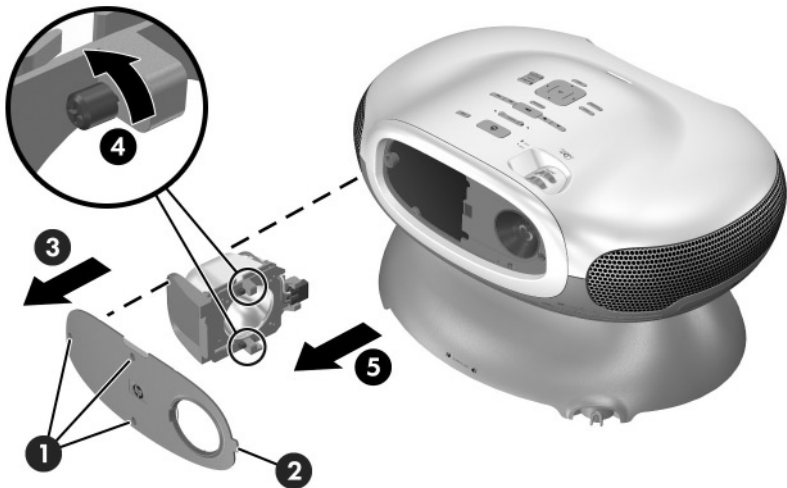
As the projector operates over time, the brightness of the projector lamp gradually decreases and the lamp becomes more susceptible to breakage. You can install a new lamp at any time to bring the projector up to factory-fresh brightness. We recommend replacing the lamp if a warning message is displayed.



Replacing the lamp module requires special consideration:

- To reduce the risk of injury, be careful when removing the lamp module as broken glass might be present. If the lamp is broken, contact HP about repairs that might be required due to glass fragments.
- The lamp contains a small amount of mercury. If the lamp breaks, adequately ventilate the area where the breakage occurred. Disposal of this lamp might be regulated due to environmental considerations. For disposal or recycling information, contact your local authorities or the Electronic Industries Alliance at <http://www.eiae.org>.
- Because the lamp assembly operates at a very high temperature, wait 30 minutes before removing the lamp module.

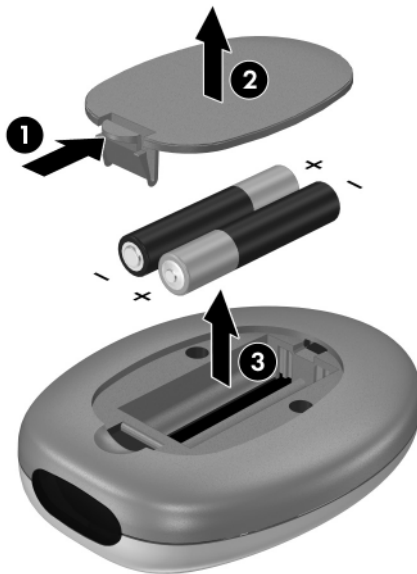
1. Turn off the projector and allow it to cool for 30 minutes.
2. Unplug the power cord.
3. Loosen the 3 screws **1** on the front cover and pull out the front cover until the tab **2** at the right end comes out of the projector **3**.
4. Loosen the two screws **4** on the lamp module, and pull out the module **5**.



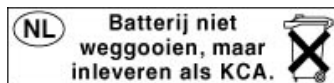
5. Insert the new lamp module into the projector and tighten the two screws.
6. Insert the tab on the front cover into the slot in the projector and close the cover.
7. Tighten the screws that hold the cover.
8. Turn on the projector. If the lamp does not turn on after the warm-up period, try reinstalling the lamp.
9. Press **menu**, go to **Setup > Reset lamp hours**, and press **ok**.

Replacing the battery in the remote control

1. On the back of the remote control, push in the tab ❶ and remove the battery cover ❷ to reveal the batteries.
2. Remove the old batteries and install two new AAA batteries ❸.
3. Install the battery cover.



When discarding old batteries, contact your local waste-disposal provider regarding local restrictions on the disposal or recycling of batteries.



Fixing problems

Troubleshooting suggestions

If you have a problem with your projector, check the following statement that most closely matches the nature of the problem, then look in that section of this chapter:

- “Warning light problems” on page 55
- “Start-up problems” on page 56
- “Picture problems” on page 56
- “Sound problems” on page 60
- “Interruption problems” on page 61
- “Remote control problems” on page 62



If these suggestions do not solve your problem, go to <http://www.hp.com/support> for additional information. To contact HP, see Chapter 7, “Support and warranty.”

Warning light problems

If both red warning lights are blinking:

- Allow the projector to cool down after it turns off. If this condition occurs after you restart the projector, an internal component has failed. Contact HP for assistance.

If the red temperature light is on or blinking:

- Allow the projector to cool down after it turns off. Be sure that nothing is near or blocking the vents on the projector, and that the vents are free of lint and other objects. Remove any sources of excess heat in the room. Observe temperature and altitude limits (see “Specifications” on page 69). If the warning light turns on or blinks after you restart the projector, contact HP for assistance.

If the red lamp light is on or blinking:

- ❑ Allow the projector to cool down after it turns off. If the warning light turns on or blinks after you restart the projector, install a new lamp. If this occurs after you install a new lamp module, remove and reinstall the lamp module. If a new lamp does not fix the problem, contact HP for assistance.

If the red lamp light is flickering quickly:

- ❑ Check that the cover around the lamp at the front of the projector is correctly installed and fully attached. Check the tab at the right side of the cover and the screw at the left side.

Start-up problems

If no lights or sounds turn on:

- ❑ Be sure that the power cable is securely connected to the projector and the other end is plugged into an outlet with power.
- ❑ If you put a disc in the DVD tray but the projector did not turn on, the disc is not recognized. Try a different disc.
- ❑ Press the power button again.
- ❑ Unplug the power cord for 15 seconds, then plug it in and press the power button again.

Picture problems

If a “waiting” message is displayed on a blank screen:

- ❑ Press the **source** button on the projector or remote control one or more times until the correct source name is selected.
- ❑ Be sure the external source is turned on and connected.
- ❑ For a computer connection, ensure your notebook computer’s external video port is turned on. Refer to the computer manual. On some notebooks, for example, press the Fn + F4 or Fn+F5 function keys to turn on the external video port.

If the wrong input source is displayed:

- ❑ Press the **source** button on the projector or the remote control one or more times to select another active input source.

If the image is out of focus:

- ❑ Be sure the lens cover is open.
- ❑ While displaying the on-screen menu, adjust the focus ring. (The image size should not change; if it does, you are adjusting the zoom, not the focus.)
- ❑ Ensure the projection screen is 1 to 10 m (3 to 33 ft) from the projector.
- ❑ Check the projection lens to see if it needs cleaning.
- ❑ For a computer connection, set the display resolution on the computer to 800×600 pixels. If the computer has multiple monitors, adjust the resolution of the monitor assigned to the projector.
- ❑ For a computer connected to the S-video port, the picture cannot be as high resolution as what you see on the computer display.

If the image is too small or too large:

- ❑ Adjust the zoom ring on top of the projector.
- ❑ Move the projector closer to or farther from the screen.
- ❑ On the projector or remote control, press the **picture mode** button one or more times to see if one of the picture modes makes the image the correct size.
- ❑ Press **menu**, go to **Picture > Customize picture mode > Stretch**. Try the different settings.
- ❑ If the source device sends wide-screen output, press **menu**, go to **Picture > Shape settings**, and try setting **Widescreen input** to **Yes**. Otherwise, set it to **No**.

If the image has slanted sides:

- ❑ As much as possible, reposition the projector so that it is centered on the screen and below the bottom of the screen.
- ❑ On the projector or remote control, press the **keystone** button until the sides are vertical.

If the image is stretched:

- ❑ On the projector or remote control, press the picture mode button one or more times to see if one of the picture modes makes the image the correct size.
- ❑ Press **menu**, go to **Picture > Customize picture mode > Stretch**. Try the different settings.
- ❑ If the source device sends wide-screen output, press **menu**, go to **Picture > Shape settings**, and try setting **Widescreen input** to **Yes**. Otherwise, set it to **No**.

If the projected colors seem slightly wrong:

- ❑ Press **menu**, go to **Picture > Color settings**, and adjust the color settings as needed.
- ❑ Press **menu**, go to **Picture > Color settings > Color space**. Try the different settings.
- ❑ Press **menu**, go to **Help > Diagnostics**, and run the color test.

If the projected colors seem completely wrong:

- ❑ Be sure the pins on the cable connectors are not bent or broken.
- ❑ Press **menu**, go to **Picture > Color settings > Color space**. Try the different settings.
- ❑ Press **menu**, go to **Help > Diagnostics**, and run the color test.
- ❑ Press **menu**, go to **Picture > Color settings > Reset color settings**, and press **ok**.
- ❑ Press **menu**, go to **Setup > Reset all settings**, and press **ok**.

If the picture is not clear (ghost images, smearing, poor quality):

- ❑ Be sure the video cable you are using is coaxial cable rated at 75 ohms. Any other cable or impedance rating can reduce picture quality.
- ❑ The video cable connecting the video source to the projector probably must be higher quality, especially if the cable is longer than about 3 m (10 ft). Low-loss cable is recommended for longer distances to avoid degrading or losing the picture

If a DVI source is not displayed when the DVI port is selected:

- ❑ Press **menu**, go to **Setup > DVI compatibility**, and select **Standard DVI**.

If several picture settings seem completely wrong and you cannot fix them:

- Press **menu**, go to **Picture > Color settings > Reset color settings**, and press **ok**.
- Press **menu**, go to **Setup > Reset all settings**, and press **ok**.

If a scrolling or cut-off image is displayed for a computer connection:

- Press **menu**, go to **Picture > VGA settings > Auto sync**, and press **ok**.
- Turn everything off. Then power on the projector first and power on the notebook or desktop computer second.
- If the previous steps do not correct the display image, adjust the resolution of the notebook or desktop computer to 800×600 pixels. If the computer has multiple monitors, adjust the resolution of the monitor assigned to the projector.

If the image is flickering or unstable for a computer connection:

- Press **menu**, go to **Picture > VGA settings > Auto sync**, and press **ok**.
- Press **menu**, go to **Picture > VGA settings**, and adjust **Frequency** or **Tracking**.

If the image disappears from the computer screen:

- For a notebook computer, you might be able to turn on both the external VGA port and the built-in screen. See the computer manual.

If text or lines from a computer display seem rough or uneven:

- Check the focus adjustment.
- Press **menu**, go to **Picture > Shape settings > Reset keystone**, and press **ok**.

If a computer display is projected with low resolution:

- Press **menu**, go to **Setup > DVI compatibility**, and select **VGA only**. Note that this setting is not compatible with standard DVI devices.

DVD player problems

If a message shows an error message:

- Be sure the disc is inserted with the label facing up.
- Check the disc for scratches or other problems. Try cleaning the disc. Try a different disc.

- ❑ The type of disc you inserted might not be supported by the internal DVD player. If so, you cannot play this type of disc.
- ❑ For a DVD, check its region code. Most DVDs have a region code marked near the center hole. Compare its region code with the region code for a DVD that plays properly on your projector. The projector can play DVDs from only one region.

If a disc in the tray does not automatically play:

- ❑ A disc automatically starts playing only at the time you close the tray. If a disc is already loaded in the tray, press the play/pause button to start playing.
- ❑ If the projector is off, nothing happens if you insert a disc that is not supported by the internal DVD player.

If some pictures on a CD do not show:

- ❑ Some pictures with very high resolution (high number of pixels) cannot be displayed. Convert them to standard JPG format with a lower resolution.

If you cannot display a DVD menu:

- ❑ Press the **DVD menu** button.
- ❑ The current DVD probably does not have a menu.

If a icon appears on the screen:

- ❑ You pressed a button that is not supported by the disc or by the DVD player in the current situation. The button is ignored.

Sound problems

If no sound is coming out of the projector:

- ❑ If you are playing an external source, be sure you have an audio cable securely connected between the source device and the projector's audio input.
- ❑ Be sure a headphone is not plugged into the headphone jack. A headphone connection disables the internal speakers.
- ❑ Press **menu**, go to **Sound**, and check that **Mute** is turned off and **Volume** is correct.
- ❑ Press **menu**, go to **Sound > Internal speakers**, and be sure the speakers are turned on.

- ❑ If the internal DVD player is playing a DVD with DTS sound, press **DVD menu** and turn off the DTS sound and turn on stereo or Dolby sound. DTS sound plays only on a DTS-compatible sound system connected to the projector's digital audio output.
- ❑ Press **menu**, go to **Help > Diagnostics**, and run the sound test.
- ❑ Be sure that the mute and volume settings are correct on the source device, such as a VCR, camcorder, or computer.

If no sound is coming out of an external sound system:

- ❑ If you are playing an external source, be sure you have an audio cable securely connected between the source device and the sound system. The digital audio output from the projector functions only while playing the internal DVD player.
- ❑ If you are playing the internal DVD player, be sure you have a correct cable connecting the projector to the sound system—either a digital audio cable connected between digital audio ports, or a standard audio cable connecting stereo audio ports.
- ❑ Press **menu**, go to **Sound**, and check that **Mute** is turned off. The volume control does not affect the digital audio output and the stereo audio output.
- ❑ If the internal DVD player is playing a DVD with DTS sound, press **DVD menu** and turn off the DTS sound and turn on stereo or Dolby sound. DTS sound plays only on a DTS-compatible sound system connected to the projector's digital audio output.

If the projector speakers interfere with an external sound system:

- ❑ Press **menu**, go to **Sound > Internal speakers**, and turn off the speakers

Interruption problems

If the projector stops responding to all controls:

- ❑ If possible, turn off the projector, then unplug the power cord and wait at least 15 seconds before reconnecting power.

If the lamp shuts off during a show:

- ❑ A minor power surge might cause the lamp to shut off. This is normal. Wait a few minutes, then power on the projector.
- ❑ If a red warning light is on or blinking, see “Warning light problems” on page 55.

If the lamp burns out or makes a popping sound:

- ❑ If the lamp burns out and makes a popping sound, the projector will not turn back on until the lamp module has been replaced.
- ❑ If the lamp breaks, contact HP about repairs that might be required due to glass fragments.

Remote control problems

If the remote control does not operate:

- ❑ Be sure nothing is blocking the remote control receiver on the front or back of the projector. Move to within 9 m (30 ft) of the projector.
- ❑ Aim the remote control at the screen or at the front or back of the projector.
- ❑ Press **menu**, go to **Help > Diagnostics**, and run the remote control test.
- ❑ Replace the batteries in the remote control.

Testing the projector

The on-screen menu contains diagnostic tests you can use to verify the proper operation of the projector and the remote control.

1. Press **menu** and go to **Help > Diagnostics**.
2. Select a test and press **ok**.
3. Follow the displayed instructions.

Support and warranty

Support

Contacting HP support

HP provides expert advice on using your HP digital projector or solving problems with your digital projector. Support options and availability vary by product, country/region, and language. The HP support process works most effectively if you seek assistance in the following order:

Step 1: HP digital projector documentation

Use this owner's manual and the setup guide included with the projector. From our experience, a large percentage of customer issues are addressed in the owner's manual. Manuals in all supported languages are included on the CD shipped with the projector.

Step 2: HP e-support

HP e-support offers online, instant access to support information, helpful tips, and the latest updates 24 hours a day, seven days a week, at no cost to you. This service requires access to the Internet. Visit our website at <http://www.hp.com/support>.

Step 3: HP phone support

HP provides telephone support free of charge for as long as you own your projector. (Standard phone company charges may apply.) Telephone support is available in any country or region where the product is distributed by HP. HP e-support is always available at no cost—see “Step 2: HP e-support”.

See the following table for a list of phone numbers. For the latest phone numbers, visit <http://www.hp.com/support>. Have your projector's model and serial number available when you call.

Americas

Argentina (Buenos Aires):
(54)11-4778-8380
Argentina (other): 0-810-555-5520
Brazil (São Paulo): 11-3747-7799
Brazil (other): 0800-15-7751
Canada (Missauga): 905-206-4663
Canada (other): 1-800-474-6836
Chile: 800-360-999
Colombia: 01-800-51-HP-INVENT
Costa Rica: 0-800-011-4114 +
1-800-711-2884
Ecuador (Andinatel): 999-119 +
1-800-711-2884
Ecuador (Pacifitel): 1-800-225-528 +
1-800-711-2884
Guatemala: 1-800-999-5105
Mexico (Mexico City): (55)5258-9922
Mexico (other): 01-800-472-6684
Panama: 001-800-711-2884
Peru: 0-800-10111
Venezuela: 0-800-4746-8368
Jamaica: 1-800-7112884
Republica Dominicana: 1-800-711-2884
Trinidad and Tobago: 1-800-711-2884
United States: 1-800-474-6836

Europe

Austria: +43 (0)820 87 4417
Belgium (French): 070 300 004
Belgium (Dutch): 070 300 005
Czech Republic: +42 (0) 2 61307310
Denmark: +45 70202845
Finland: +358 (0)203 66 767
France: +33 (0)892 6960 22
Germany: +49 (0)180 5652 180
Greece: + 30 10 6073 603
Hungary: +36 (0) 1 382 1111
Ireland: 1890 923902
Italy: 848 800 871
Luxembourg (French): 900 40 006
Luxembourg (German): 900 40 007
Netherlands: 0900 2020 165
Norway: +47 815 62 070
Poland: + 48 22 865 98 00

Portugal: 808 201 492
Romania: +40 1 315 44 42
Russian Federation (Moscow): +7 095
7973520
Russian Federation (St. Petersburg): + 7
812 346 7997
Slovakia: + 421 2 6820 8080
Spain: 902 010 059
Sweden: + 46 (0)77 120 4765
Switzerland: 0848 672 672
Ukraine: + 7 (380 44) 490-3520
United Kingdom: +44 (0)870 010 4320

Middle East and Africa

Algeria: +213(0)61 56 45 43
Bahrain: +973 800 728
Egypt: + 20 02 532 5222
Israel: + 972 (0) 9 830 4848
Morocco: +212 224 04747
Nigeria: +234 1 3204 999
Saudi Arabia: +966 800 897 14440
South Africa (Republic of S. Africa): 086 000
1030
South Africa (other): +27-11 258 9301
Tunisia: + 216 1 891 222
Turkey: +90 216 579 7171
United Arab Emirates: 800 4910

Asia and Australia

Australia: +61 (3) 8877 8000 (or local (03)
8877 8000)
China: +86 (21) 3881 4518
Hong Kong SAR: +852 2802 4098
India: 1 600 447737
Indonesia: +62 (21) 350 3408
Japan (inside): 0570 000 511
Japan (outside): +81 3 3335 9800
Korea, Republic of : +82 1588-3003
Malaysia: 1 800 805 405
New Zealand: +64 (9) 356 6640
Philippines: +63 (2) 867 3551
Singapore: +65 6272 5300
Taiwan: +886 0 800 010055
Thailand: +66 - (0)2 353 9000
Vietnam: +84 (0) 8 823 4530

Obtaining HP repair

If your HP digital projector must be repaired, call HP support by phone. A trained HP service technician will diagnose the problem and coordinate the repair process. HP support will direct you to the best solution, whether it is an authorized service provider or an HP facility. Repair covered by the limited warranty is free during the limited warranty period. After the warranty period, you will be quoted a repair cost.

Limited warranty

HP is committed to providing the best service to ensure that you get the most out of your HP Digital Projector. This Limited Warranty Statement describes the standard Digital Projector warranty.

Product	Warranty period
HP Digital Projector, warranty period marked on rear label (excluding items listed in this table).	Number of years marked on label, for example: 1YR = 1 year, 3YR = 3 years Limited parts and labor warranty.
HP Digital Projector Lamp Module (included with the projector or purchased separately).	One year or 2000 hours of use (whichever comes first) Limited hardware warranty.
HP Digital Projector Cables, Remote Control, and other parts (included with the projector).	Same period as projector Limited hardware warranty.
HP Digital Projector Cables, Cords, Adapters, and Remote Control (purchased separately).	One year Limited hardware warranty.

HP digital projector limited warranty statement

Extent of limited warranty

1. Hewlett-Packard (HP) warrants to the end-user customer that the HP products specified above will be free from defects in materials and workmanship for the duration specified above, which duration begins on the date of purchase by the customer. Customer is responsible for maintaining proof date of purchase.
2. For software products, HP's limited warranty applies only to a failure to execute programming instructions. HP does not warrant that the operation of any product will be uninterrupted or error free.

3. HP's limited warranty covers only those defects which arise as a result of appropriate use of the product, and do not apply to any:
 - ❑ Improper or inadequate maintenance, or unauthorized modification
 - ❑ Software, interfacing, media, parts, or supplies not provided or supported by HP
 - ❑ Operation outside the product's specifications
4. If HP receives notice of a defect in any hardware product covered by HP's warranty during the applicable warranty period, HP shall either repair or replace the defective product at HP's option.
5. If HP is unable to repair or replace, as applicable, a defective product which is covered by HP's warranty, HP shall, within a reasonable time after being notified of the defect, refund the purchase price for the product.
6. HP shall have no obligation to repair, replace, or refund until the customer returns the defective product to HP.
7. Any replacement product may be either new or like-new, provided that it has functionality at least equal to that of the product being replaced.
8. HP products may contain remanufactured parts or components equivalent to new in performance or may have been subject to incidental use.
9. HP's limited warranty is valid in any country where the covered HP product is distributed by HP.

Limitations of warranty

TO THE EXTENT ALLOWED BY LOCAL LAW, NEITHER HP NOR ITS THIRD PARTY SUPPLIERS MAKE ANY OTHER WARRANTY OR CONDITION OF ANY KIND, WHETHER EXPRESS OR IMPLIED, WITH RESPECT TO THE HP PRODUCTS, AND SPECIFICALLY DISCLAIM THE IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY, SATISFACTORY QUALITY, AND FITNESS FOR A PARTICULAR PURPOSE.

Limitations of liability

1. To the extent allowed by local law, the remedies provided in this Warranty Statement are the customer's sole and exclusive remedies.
2. TO THE EXTENT ALLOWED BY LOCAL LAW, EXCEPT FOR THE OBLIGATIONS SPECIFICALLY SET FORTH IN THIS WARRANTY STATEMENT, IN NO EVENT WILL HP OR ITS THIRD-PARTY SUPPLIERS BE LIABLE FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, WHETHER BASED ON CONTRACT, TORT, OR ANY OTHER LEGAL THEORY AND WHETHER ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Local law

1. This Warranty Statement gives the customer specific legal rights. The customer may also have other rights which vary from state to state in the United States, from province to province in Canada, and from country to country elsewhere in the world.
2. To the extent that this Warranty Statement is inconsistent with local law, this Warranty Statement shall be deemed modified to be consistent with such local law. Under such local law, certain disclaimers and limitations of this Warranty Statement may not apply to the customer. For example, some states in the United States, as well as some governments outside the United States (including provinces in Canada), may:
 - Preclude the disclaimers and limitations in this Warranty Statement from limiting the statutory rights of a consumer (for example, the United Kingdom).
 - Otherwise restrict the ability of a manufacturer to enforce such disclaimers or limitations.
 - Grant the customer additional warranty rights, specify the duration of implied warranties which the manufacturer cannot disclaim, or not allow limitations on the duration of implied warranties.
3. FOR CONSUMER TRANSACTIONS IN AUSTRALIA AND NEW ZEALAND, THE TERMS IN THIS WARRANTY STATEMENT, EXCEPT TO THE EXTENT LAWFULLY PERMITTED, DO NOT EXCLUDE, RESTRICT, OR MODIFY, AND ARE IN ADDITION TO, THE MANDATORY STATUTORY RIGHTS APPLICABLE TO THE SALE OF HP PRODUCTS TO SUCH CUSTOMERS.

Reference

This chapter lists the specifications, safety information, and regulatory information for the projector.

Specifications

Because HP continually improves its products, the following specifications are subject to change. For the latest specifications, visit the HP website at <http://www.hp.com>.

Projector specifications

Size	524 × 400 × 320 mm (20.6 × 15.7 × 12.6 in.)
Weight	10.5 kg (23.0 lb)
Resolution	SVGA (800 × 600)
Technology	DLP
Internal DVD player	Compatibility: DVD-video (including Dolby Digital and Dolby Pro Logic, with DTS passed to digital audio-out), DVD+R/RW, DVD-R/RW, VCD, SVCD, JPG images, MP3 audio, CDDA (standard audio CD), CD-R, CD-R/RW, Kodak Picture CD
Video connectors	S-video (mini-DIN) Composite video (RCA) Component video (3 RCA) DVI-I
Audio connectors	5.1 digital audio-out (1 RCA, coaxial) Stereo audio-out (2 RCA) Stereo audio-in (2 RCA)
Other connectors	Service port (for service only)

Projector specifications (Continued)

Video compatibility	NTSC 3.58 MHz and 4.43 MHz PAL B, D, G, H, I, M, N SECAM B, D, G, K, K1, L HDTV (480i/p, 575i/p, 720p, 1080i) DVI with HDCP PC video up to SXGA (by DVI-I connector)
IR receiver	Front and back of projector
Lamp	210-watt lamp 4000-hour average lamp life (to half of original brightness) Replacement lamp: L1731A
Optics	1.7 to 2.0 throw ratio (distance/width) 1 to 10 m (3 to 33 ft) focus range 128% offset (relative to half-height) 1.16:1 optical zoom
Light engine	0.55-in. 12° DDR DMD
Audio	60-watt total peak power 15-watt per channel peak stereo speakers (two speakers per channel facing front and rear) 30-watt peak subwoofer
Noise level	less than 34 dBA
Vertical tilt	±10°
Vertical keystone correction	±20%
Power	100 to 240 V at 50 to 60 Hz
Environment	Operating: Temperature: 5 to 35 °C (41 to 95 °F) Humidity: 80% RH max, non-condensing Altitude: up to 3,000 m (10,000 ft), up to 25 °C (77 °F) Storage: Temperature: -20 to 60 °C (-4 to 140 °F) Humidity: 80% RH max, non-condensing Altitude: up to 12,000 m (40,000 ft)

Video mode compatibility

Compatibility	Resolution	Refresh rates (Hz)
Analog		
VGA	640 x 350	70, 85
	640 x 400	85
	640 x 480	60, 66.66, 66.68, 72, 75, 85, 117, 120
	720 x 400	70, 85
SVGA	800 x 600	56, 60, 72, 75, 85, 95
	832 x 624	74.55
XGA	1024 x 768	60, 70, 75, 85, 95
	1152 x 870	75, 75.06
	1280 x 960	75
SXGA	1280 x 1024	60, 75
SXGA+	1400 x 1050	60
Digital		
VGA	640 x 350	70, 85
	640 x 400	85
	640 x 480	60, 72, 75, 85
	720 x 400	70, 85
SVGA	800 x 600	56, 60, 72, 75, 85
XGA	1024 x 768	60, 70, 75
SXGA	1280 x 1024	60, 75
SXGA+	1400 x 1050	60

Safety information

Laser safety

This product contains a DVD player which employs a laser. Only a qualified service person should remove the cover or attempt to service this device, due to the possibility of eye injury. The use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.



WARNING: Visible and invisible laser radiation when the drawer is open. Avoid direct exposure to the beam to prevent eye injury.

Laser data

- Type: Semiconductor two-wavelength laser
- Wave length DVD: 650 nm
- Wave length CD: 780 nm
- Optical output power DVD: 7 mW
- Optical output power CD: 7 mW



LED safety

The infrared ports located on the digital projector and remote control are classified as Class 1 LED devices according to International Standard IEC 825-1 (EN60825-1). This device is not considered harmful, but the following precautions are recommended:

- If the unit requires service, contact an authorized HP service center.
- Do not attempt to make any adjustment to the unit.
- Avoid direct eye exposure to the infrared LED beam. Be aware that the beam is invisible light and cannot be seen.
- Do not attempt to view the infrared LED beam with any type of optical device.

Mercury safety



WARNING: This digital projector lamp contains a small amount of mercury. If the lamp breaks, adequately ventilate the area where the breakage occurred. Disposal of the lamp might be regulated due to environmental considerations. For disposal or recycling information, contact your local authorities or the Electronic Industries Alliance at <http://www.eiae.org>.

Regulatory information

This section presents information that shows how your digital projector complies with regulations in certain regions. Any modifications to your digital projector not expressly approved by HP could void the authority to operate the digital projector in these regions.

U.S.A.

This digital projector 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 digital projector generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instructions, it can cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this digital projector does cause harmful interference to radio or television reception (which can be determined by unplugging the unit), try the following:

- Reorienting or relocating the receiving antenna.
- Relocating the digital projector with respect to the receiver.
- Connecting the digital projector's power cord to another power outlet.

Connections to peripheral devices

To maintain compliance with FCC Rules and Regulations, use properly shielded cables with this device.

For more information, consult your dealer, an experienced radio/television technician, or, prepared by the Federal Communications Commission, *How to Identify and Resolve Radio-TV Interference Problems*. This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock Number 004-000-00345-4. At the first printing of this manual, the telephone number was 202-512-1800.

Canada

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

Japan

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると受信障害を引き起こすことがあります。

取り扱い説明書に従って正しい取り扱いをして下さい。

製品には、同梱された電源コードをお使い下さい。
同梱された電源コードは、他の製品では使用出来ません。

Korea

사용자 안내문 : **B** 급 기기

이 기기는 비업무용으로 전자파적합등록을 받은 기기이오니, 주거지역에서는 물론, 모든 지역에서 사용 하실 수 있습니다.

International

For regulatory identification purposes, your product is assigned a regulatory model number. The regulatory model number for your product is listed in the declaration of conformity. This regulatory number is different from the marketing name and product number.

Declaration of conformity

According to ISO/IEC Guide 22 and EN 45014

Manufacturer's name: Hewlett Packard Company
Manufacturer's address: Hewlett Packard Company
 Digital Projection & Imaging
 1000 NE Circle Blvd.
 Corvallis, OR 97330-4239

Declares, that the product(s):

Product name: Instant Cinema**Model number:** ep9010 series**Regulatory model:** CRVSB-04ZO**Conforms to the following product specifications:****Safety:** IEC 60950:1999/ EN 60950:2000IEC 60825-1:1993 +A1 / EN 60825-1:1994 +A11 Class 1 LED
GB4943-1995**EMC:** EN 55022: 1998 Class B [1]

CISPR 24:1997 / EN 55024: 1998

IEC 61000-3-2:1995 / EN 61000-3-2:2000

IEC 61000-3-3:1994 / EN 61000-3-3:1995+A1:2001

GB9254-1998

FCC Title 47 CFR, Part 15 Class B/ANSI C63.4:1992

AS/NZS 3548:1995 Rules and Regulations of Class B

Supplementary information:

The product herewith complies with the requirements of following Directives and carries the CE marking accordingly:

- Low Voltage Directive: 73/23/EEC

- EMC Directive: 89/336/EEC

[1] The product was tested in a typical configuration with Hewlett Packard Personal Computer peripherals.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Corvallis, Oregon, July 1, 2004



Steve Brown, General Manager

European Contact for regulatory topics only: Hewlett Packard GmbH, HQ-TRE, Herrenberger Straße 140, 71034 Boeblingen, Germany. (FAX:+49-7031-143143).

USA Contact: Hewlett Packard Co., Corporate Product Regulations Manager, 3000 Hanover Street, Palo Alto, CA 94304. Phone: (650) 857-1501.

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i n v e n t

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5990-3664

Mercury Safety

WARNING: This digital projector lamp contains a small amount of mercury. If the lamp breaks, adequately ventilate the area where the breakage occurred, discard any nearby food and drink, and thoroughly clean the table surface around the projector. Wash your hands after cleaning the area or handling a broken lamp. Disposal of this lamp may be regulated due to environmental considerations. For disposal or recycling information, please contact your local authorities or the Electronic Industries Alliance (www.eiae.org). You can find safety information about the lamp at www.hp.com/hpinfo/globalcitizenship/environment/productdata.