

Portable Projector

VT580/VT480/VT58/VT48

User's Manual



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NOTES

- (1) The contents of this guide may not be reprinted in part or whole without permission.
- (2) The contents of this guide are subject to change without notice.
- (3) Great care has been taken in the preparation of this manual; however, should you notice any questionable points, errors or omissions, please contact us.
- (4) Notwithstanding article (3), NEC will not be responsible for any claims on loss of profit or other matters deemed to result from using the Projector.

Important Information

Safety Cautions

Precautions

Please read this manual carefully before using your NEC VT580/VT480/VT58/VT48 projector and keep the manual handy for future reference. Your serial number is located on the bottom of your projector. Record it here:

CAUTION



To turn off main power, be sure to remove the plug from power outlet.
The power outlet socket should be installed as near to the equipment as possible, and should be easily accessible.

CAUTION



TO PREVENT SHOCK, DO NOT OPEN THE CABINET.
THERE ARE HIGH-VOLTAGE COMPONENTS INSIDE.
REFER SERVICING TO QUALIFIED NEC SERVICE PERSONNEL.



This symbol warns the user that uninsulated voltage within the unit may be sufficient to cause electrical shock. Therefore, it is dangerous to make any kind of contact with any part inside of the unit.



This symbol alerts the user that important information concerning the operation and maintenance of this unit has been provided.
The information should be read carefully to avoid problems.

WARNING: TO PREVENT FIRE OR SHOCK, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.
DO NOT USE THIS UNIT'S PLUG WITH AN EXTENSION CORD OR IN AN OUTLET UNLESS ALL THE PRONGS CAN BE FULLY INSERTED.

DOC Compliance Notice (for Canada only)

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

Acoustic Noise Information Ordinance-3. GSGV (for Germany only):

The sound pressure level is less than 70 dB (A) according to ISO 3744 or ISO 7779.

CAUTION



Avoid displaying stationary images for a prolonged period of time.
Doing so can result in these images being temporarily sustained on the surface of the LCD panel.
If this should happen, continue to use your projector. The static background from previous images will disappear.

Disposing of your used product



EU-wide legislation as implemented in each Member State requires that used electrical and electronic products carrying the mark (left) must be disposed of separately from normal household waste. This includes projectors and their electrical accessories or lamps. When you dispose of such products, please follow the guidance of your local authority and/or ask the shop where you purchased the product.

After collecting the used products, they are reused and recycled in a proper way. This effort will help us reduce the wastes as well as the negative impact such as mercury contained in a lamp to the human health and the environment at the minimum level.

The mark on the electrical and electronic products only applies to the current European Union Member States.

WARNING TO CALIFORNIA RESIDENTS:

Handling the cables supplied with this product, will expose you to lead, a chemical known to the State of California to cause birth defects or other reproductive harm. Wash hands after handling.

RF Interference (for USA only)

WARNING

The Federal Communications Commission does not allow any modifications or changes to the unit EXCEPT those specified by NEC Solutions (America), Inc. in this manual. Failure to comply with this government regulation could void your right to operate this equipment. 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 communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

For UK only: In UK, a BS approved power cable with moulded plug has a Black (five Amps) fuse installed for use with this equipment. If a power cable is not supplied with this equipment please contact your supplier.

Important Safeguards

These safety instructions are to ensure the long life of your projector and to prevent fire and shock. Please read them carefully and heed all warnings.

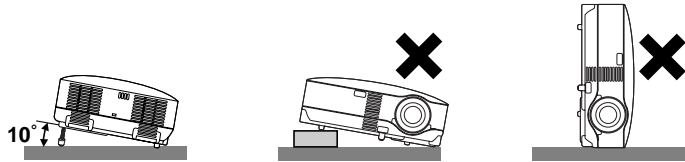


Installation

- Do not place the projector in the following conditions:
 - on an unstable cart, stand, or table.
 - near water, baths or damp rooms.
 - in direct sunlight, near heaters or heat radiating appliances.
 - in a dusty, smoky or steamy environment.
 - on a sheet of paper or cloth, rugs or carpets.
- If you wish to have the projector installed on the ceiling:
 - Do not attempt to install the projector yourself.
 - The projector must be installed by qualified technicians in order to ensure proper operation and reduce the risk of bodily injury.
 - In addition, the ceiling must be strong enough to support the projector and the installation must be in accordance with any local building codes.
 - Please consult your dealer for more information.

Place the projector in a horizontal position

The tilt angle of the projector should not exceed 10 degrees, nor should the projector be installed in any way other than the desktop and ceiling mount, otherwise lamp life could decrease dramatically.



⚠ Fire and Shock Precautions ⚡

- Ensure that there is sufficient ventilation and that vents are unobstructed to prevent the build-up of heat inside your projector. Allow at least 4 inches (10cm) of space between your projector and a wall.
- Do not try to touch the ventilation outlet on the left front (when seen from the front) as it can become heated while the projector is turned on and immediately after the projector is turned off.
- Prevent foreign objects such as paper clips and bits of paper from falling into your projector. Do not attempt to retrieve any objects that might fall into your projector. Do not insert any metal objects such as a wire or screwdriver into your project. If something should fall into your projector, disconnect it immediately and have the object removed by a qualified service personnel.
- Do not place any objects on top of the projector.
- Do not touch the power plug during a thunderstorm. Doing so can cause electrical shock or fire.
- The projector is designed to operate on a power supply of 100-240V AC 50/60 Hz. Ensure that your power supply fits this requirement before attempting to use your projector.
- Do not look into the lens while the projector is on. Serious damage to your eyes could result.
- Keep any items such as magnifying glass out of the light path of the projector. The light being projected from the lens is extensive, therefore any kind of abnormal objects that can redirect light coming out of the lens, can cause unpredictable outcome such as fire or injury to the eyes.
- Do not cover the lens with the black lens cap or equivalent while the projector is on. Doing so can lead to melting of the cap and possibly burning your hands due to the heat emitted from the light output.
- Do not place any objects, which are easily affected by heat, in front of the projector lens or a projector exhaust vent. Doing so could lead to the object melting or getting your hands burned from the heat that is emitted from the light output and exhaust.
- Handle the power cable carefully. A damaged or frayed power cable can cause electric shock or fire.
 - Do not use any power cables than the supplied one.
 - Do not bend or tug the power cable excessively.
 - Do not place the power cable under the projector, or any heavy object.
 - Do not cover the power cable with other soft materials such as rugs.
 - Do not heat the power cable
 - Do not handle the power plug with wet hands.
- Turn off the projector, unplug the power cable and have the object removed by a qualified NEC service personnel under the following conditions:
 - When the power cable 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 the projector does not operate normally when you follow the instructions described in this user's manual.
 - If the projector has been dropped or the cabinet has been damaged.
 - If the projector exhibits a distinct change in performance, indicating a need for service.
 - If the projector is not to be used for an extended period of time.
- Disconnect the power cable and any other cables before carrying the projector
- Turn off the projector and unplug the power cable before cleaning the cabinet or replacing the lamp.

CAUTION

- Do not use the tilt-foot for purposes other than originally intended. Misuses such as gripping the tilt-foot or hanging on the wall can cause damage to the projector.
- Do not send the projector in the soft case by parcel delivery service or cargo shipment. The projector inside the soft case could be damaged.
- When carrying the projector by the carrying handle, make sure the two screws that attach the carrying handle to the projector cabinet are tight.
Insufficient tightening of the two screws could result in the projector falling and causing injury.
- Select [High] in Fan mode if you continue to use the projector for consecutive days. (From the menu, select [Setup] → [Options] → [Fan Mode] → [High].)
- Do not turn off the AC power by pressing the main power switch or by unplugging the power cable when the projector is powered on.
- Do not turn off the AC power for 60 seconds after the lamp is turned on and while the POWER indicator is blinking green. Doing so could cause premature lamp failure.

Remote Control Precautions

- Handle the remote control carefully.
- If the remote control gets wet, wipe it dry immediately.
- Avoid excessive heat and humidity.
- Do not heat, take apart, or throw batteries into fire.
- If you will not be using the remote control for a long time, remove the batteries.
- Ensure that you have the batteries' polarity (+/-) aligned correctly.
- Do not use new and old batteries together, or use different types of batteries together.
- Dispose of used batteries according to your local regulations.

Lamp Replacement

- To replace the lamp, follow all instructions provided on page 51.
- Be sure to replace the lamp when the message **[The lamp has reached the end of its usable life. Please replace the lamp.]** appears. If you continue to use the lamp after the lamp has reached the end of its usable life, the lamp bulb may shatter, and pieces of glass may be scattered in the lamp case. Do not touch them as the pieces of glass may cause injury.

If this happens, contact your dealer for lamp replacement.

A Lamp Characteristic

The projector has a high-pressure mercury lamp as a light source.

A lamp has a characteristic that its brightness gradually decreases with age. Also repeatedly turning the lamp on and off will increase the possibility of its lower brightness.

CAUTION:

When removing the lamp from a ceiling-mounted projector, make sure that no one is under the projector. Glass fragments could fall if the lamp has been burned out.

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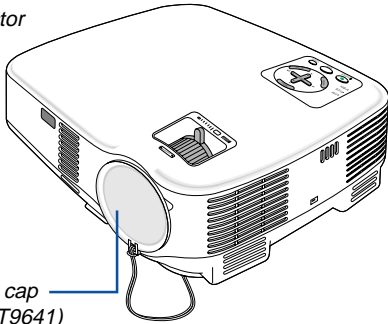
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1. Introduction

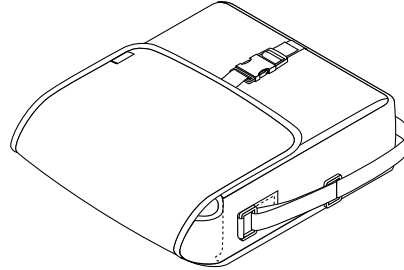
① What's in the Box?

Make sure your box contains everything listed. If any pieces are missing, contact your dealer. Please save the original box and packing materials if you ever need to ship your projector.

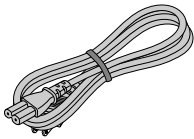
Projector



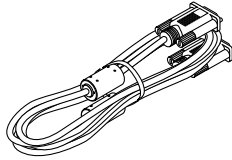
Lens cap
(24FT9641)



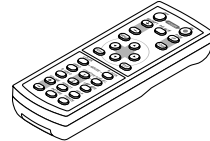
Soft case
(24BS7581)



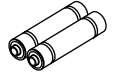
Power cable
(US: 7N080220)
(EU: 7N080007)



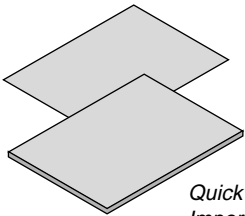
VGA signal cable
(7N520054)



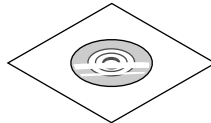
Remote control
(7N900731)



Batteries (AAA × 2)



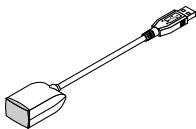
Quick Setup Guide
Important Information



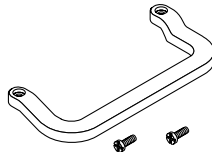
CD-ROM
User's manual

For North America only
Registration card
Limited warranty
For Europe only
Guarantee policy

For VT580 and VT480 only



Remote mouse receiver
(7N900721)



Carrying handle (24FT9651)
Screw (M4 × 2: 24V00411)

② Introduction to the Projector

This section introduces you to your new projector and describes the features and controls.

Congratulations on Your Purchase of the Projector

This projector is one of the very best projectors available today. The projector enables you to project precise images up to 300 inches across (measured diagonally) from your PC or Macintosh computer (desktop or notebook), VCR, DVD player, document camera, or a laser disc player.

You can use the projector on a tabletop or cart, you can use the projector to project images from behind the screen, and the projector can be permanently mounted on a ceiling*¹. The remote control can be used wirelessly.

*¹ Do not attempt to mount the projector on a ceiling yourself.

The projector must be installed by qualified technicians in order to ensure proper operation and reduce the risk of bodily injury.

In addition, the ceiling must be strong enough to support the projector and the installation must be in accordance with any local building codes. Please consult your dealer for more information.

Features you'll enjoy:

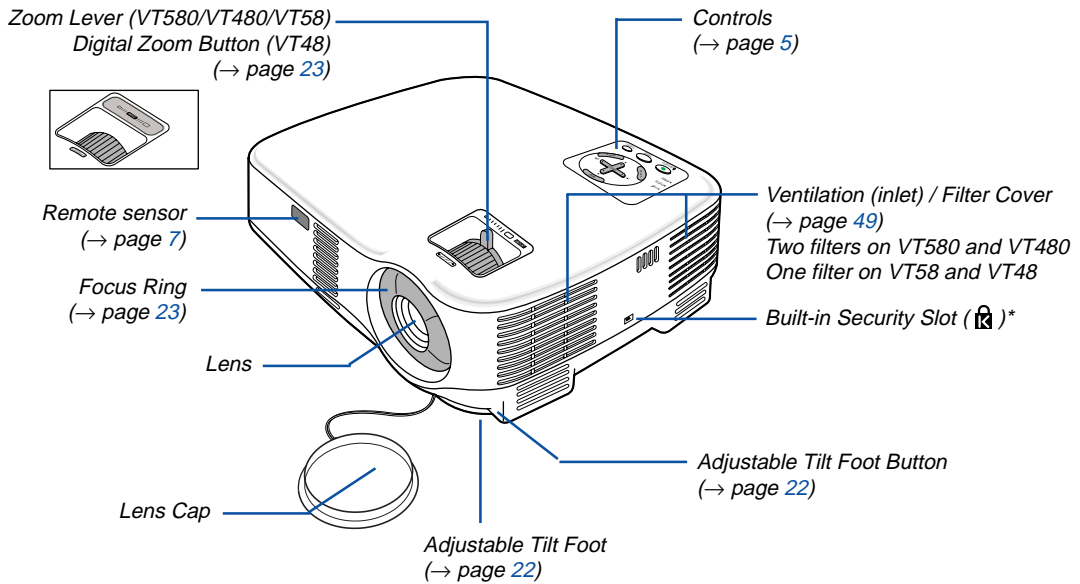
- Auto vertical keystone correction up to +/- 30 degrees (VT580 only)
- Built-in Wall Color Correction presets provide for adaptive color correction when projecting onto non-white screen material
- Quick start & quick cool down
Eight seconds after turning on the power, the projector is ready to display PC or video images.
Powering down; The fans stop 30 seconds after turning off the power from the remote control or cabinet control panel. The projector can be put away immediately after the projector is powered down.
Also, the main power of the projector can be turned off by pressing the main power switch or unplugging the power cable even during the cool down period after the projector is turned off.
- HDTV (1080i, 720p) and SDTV (576p, 480p) compatibility
- Color Management system
- Short focal length lens
- Display popular wide screen and full screen aspect ratios – 16:9 and 4:3
- Built-in speaker for an integrated audio solution
- High resolution display - up to UXGA compatible, XGA native resolution (SVGA: VT480 and VT48).
- Multiple video mode selections (depending on your source)
- Security feature prevents unauthorized individuals from displaying images.
- You can control the projector with a PC or control system using the PC Control port.
- Easy set up and operation
- The contemporary cabinet design is light, compact and complements any office, boardroom Auditorium.
- You can use the supplied wireless remote control and remote mouse receiver to operate your PC mouse from across the room. The remote mouse receiver supports almost any PC using a USB connection (VT580 and VT480 only).

About this user's manual

The fastest way to get started is to take your time and do everything right the first time. Take a few minutes now to review the user's manual. This may save you time later on. At the beginning of each section of the manual you'll find an overview. If the section doesn't apply, you can skip it.

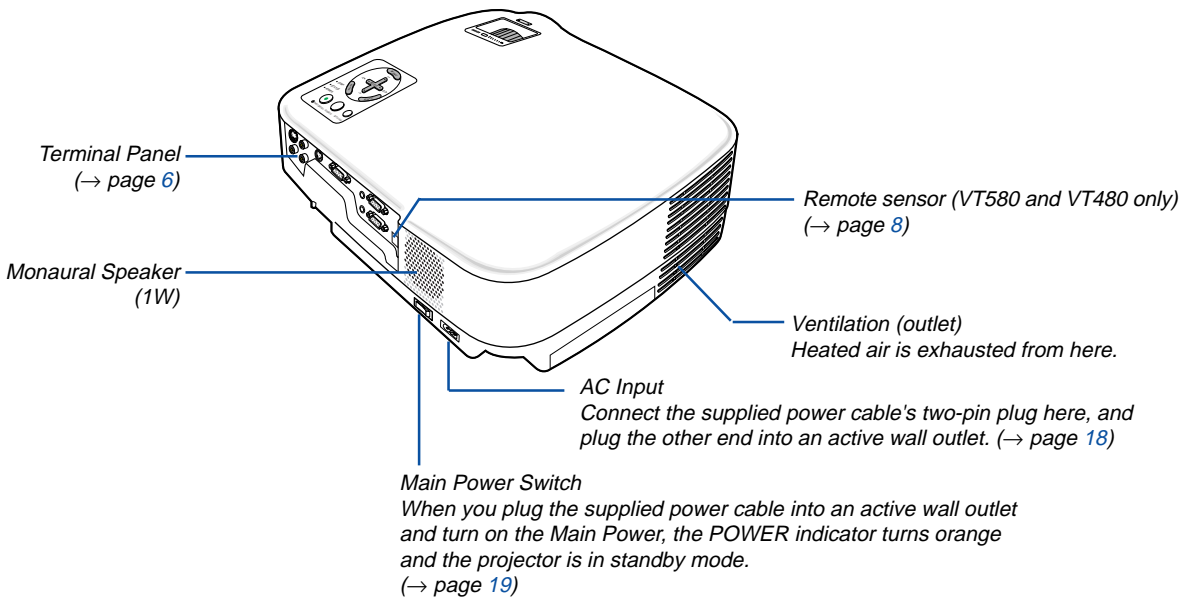
3 Part Names of the Projector

Front/Top

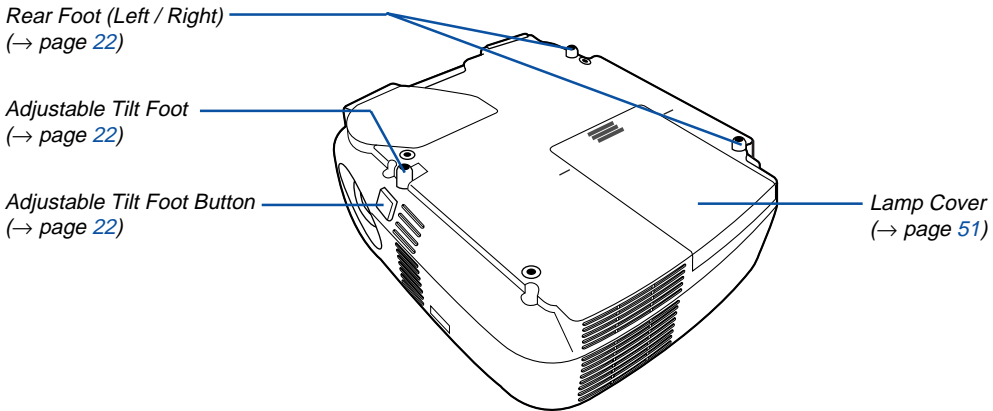


* This security slot supports the MicroSaver® Security System. MicroSaver® is a registered trademark of Kensington Microware Inc. The logo is trademarked and owned by Kensington Microware Inc.

Rear

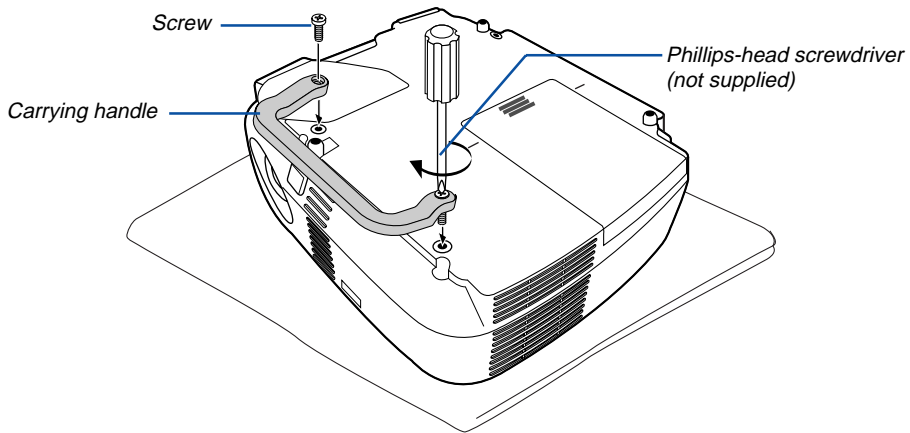


Bottom



Attaching the supplied carrying handle

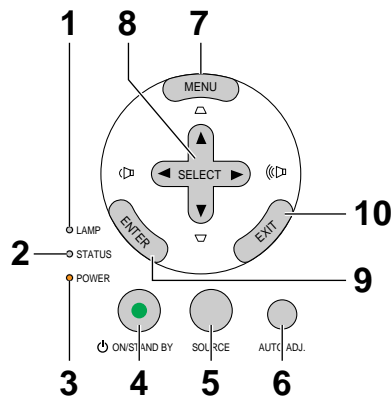
You can carry the projector by attaching the supplied carrying handle securely to the projector. To attach the supplied carrying handle, use a Phillips-head screwdriver and the supplied two screws. Place a soft cloth on the working surface before turning the projector over to prevent scratching the top cover. Make sure that the carrying handle is attached with correct orientation as shown below.



CAUTION

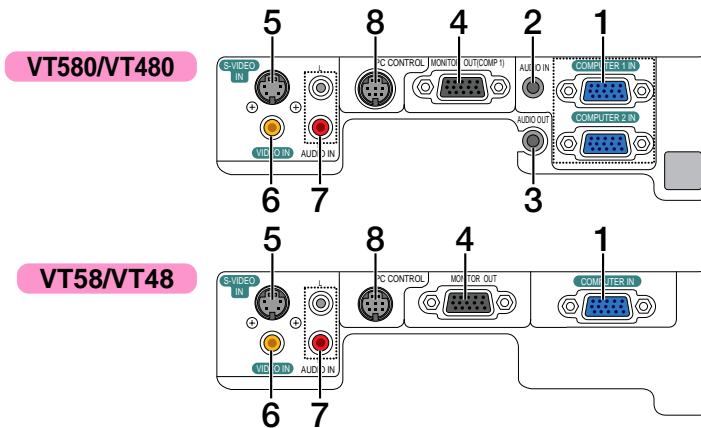
When carrying the projector by the carrying handle, make sure the two screws that attach the carrying handle to the projector cabinet are tight.

Top Features



1. LAMP Indicator (→page 51,54)
2. STATUS Indicator (→page 54)
3. POWER Indicator (→page 19,27,54)
4. POWER Button (ON / STAND BY) (⏻)
(→page 19,27)
5. SOURCE Button
6. AUTO ADJ. Button (→page 26)
7. MENU Button
8. SELECT ▲▼◀▶ / Volume Buttons ▲▼ /
Keystone Buttons ▲▼
9. ENTER Button
10. EXIT Button

Terminal Panel Features



1. COMPUTER 1 and 2 IN/ Component Input Connector (Mini D-Sub 15 Pin)

(VT580/VT480) (→page 13,14,16)

COMPUTER IN/ Component Input Connector (Mini D-Sub 15 Pin)

(VT58/VT48) (→page 13,14,16)

2. AUDIO IN Mini Jack (Stereo Mini) (→page 13,15,16)

(Not available on VT58/VT48)

3. AUDIO OUT Mini Jack (Stereo Mini) (→page 15)

(Not available on VT58/VT48)

4. MONITOR OUT Connector (Mini D-Sub 15 Pin)

(→page 15)

5. S-VIDEO IN Connector (Mini DIN 4 Pin)

(→page 17)

6. VIDEO IN Connector (RCA) (→page 17)

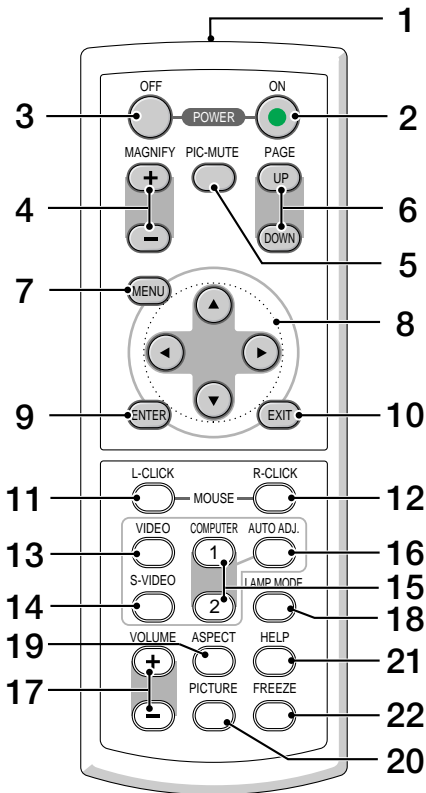
7. AUDIO Input Jacks L/R (RCA) (→page 17)

8. PC CONTROL Port (DIN 8 Pin) (→page 62,63)

Use this port to connect a PC or control system.

This enables you to control the projector using serial communication protocol. If you are writing your own program, typical PC control codes are on page 62.

4 Part Names of the Remote Control



1. Infrared Transmitter

(→ page 8)

2. POWER ON Button

(→ page 19)

3. POWER OFF Button

(→ page 27)

4. MAGNIFY (+)(-) Button

(→ page 29)

5. PIC-MUTE Button

(→ page 29)

6. PAGE UP/DOWN Button*

(Not available on VT58 and VT48)

(→ page 33,34)

7. MENU Button

8. SELECT ▲▼◀▶ Button

9. ENTER Button

10. EXIT Button

11. MOUSE L-CLICK Button*

(Not available on VT58 and VT48)

(→ page 33,34)

12. MOUSE R-CLICK Button*

(Not available on VT58 and VT48)

(→ page 33,34)

13. VIDEO Button

(→ page 21)

14. S-VIDEO Button

(→ page 21)

15. COMPUTER 1/2 Button

(The COMPUTER 2 button is not available on VT58 and VT48)

(→ page 21)

16. AUTO ADJ. Button

(→ page 26)

17. VOLUME (+)(-) Button

(→ page 26)

18. LAMP MODE Button (→ page 30)

19. ASPECT Button

(→ page 41)

20. PICTURE Button

(→ page 40 to 41)

21. HELP Button

(→ page 47)

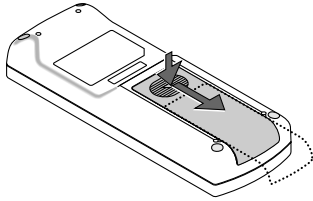
22. FREEZE Button

(→ page 29)

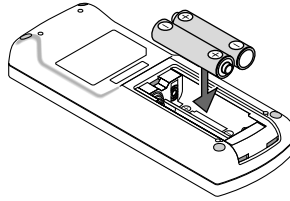
* The PAGE UP/DOWN, MOUSE L-CLICK and MOUSE R-CLICK buttons work only when the supplied remote mouse receiver is connected with your computer.

Battery Installation

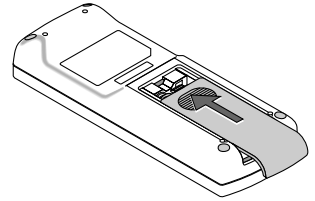
1 Press firmly and slide the battery cover off.



2 Install new batteries (AAA). Ensure that you have the batteries' polarity (+/-) aligned correctly.



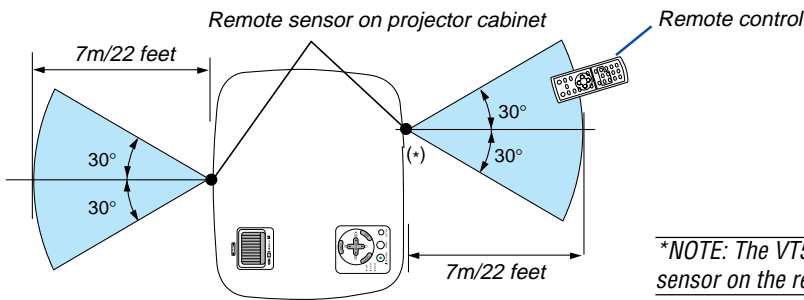
3 Slip the cover back over the batteries until it snaps into place. Do not mix different types of batteries or new and old batteries.



Remote Control Precautions

- Handle the remote control carefully.
- If the remote control gets wet, wipe it dry immediately.
- Avoid excessive heat and humidity.
- Do not heat, take apart, or throw batteries into fire.
- If you will not be using the remote control for a long time, remove the batteries.
- Ensure that you have the batteries' polarity (+/-) aligned correctly.
- Do not use new and old batteries together, or use different types of batteries together.
- Dispose of used batteries according to your local regulations.

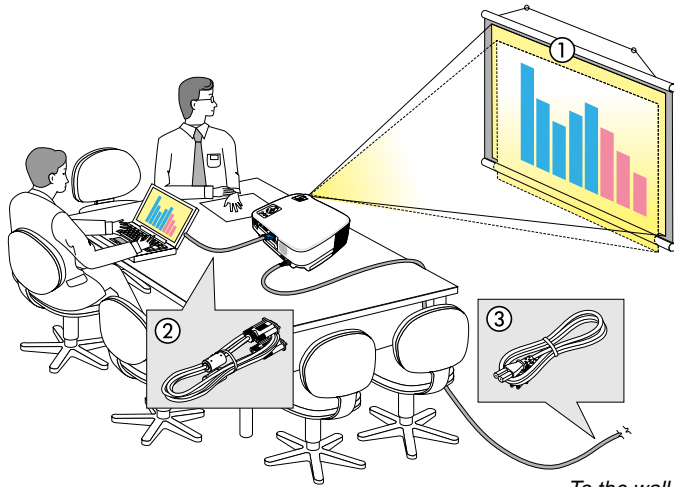
Operating Range for Wireless Remote Control



- The infrared signal operates by line-of-sight up to a distance of about 22 feet/7 m and within a 60-degree angle of the remote sensor on the projector cabinet.
- The projector will not respond if there are objects between the remote control and the sensor, or if strong light falls on the sensor. Weak batteries will also prevent the remote control from properly operating the projector.

2. Installation and Connections

This section describes how to set up your projector and how to connect video and audio sources. Your projector is simple to set up and use. But before you get started, you must first:



- ❶ Set up a screen and the projector.
- ❷ Connect your computer or video equipment to the projector. (→ pages 13 to 17)
- ❸ Connect the supplied power cable. (→ page 18)

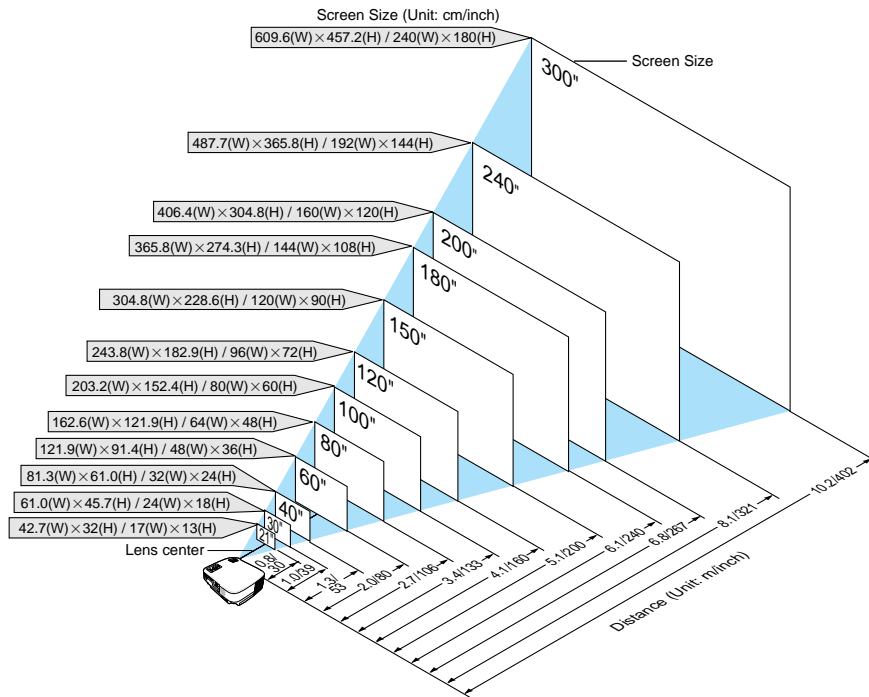
NOTE: Ensure that the power cable and any other cables are disconnected before moving the projector. When moving the projector or when it is not in use, cover the lens with the lens cap.

To the wall outlet.

❶ Setting Up the Screen and the Projector

Selecting a Location (VT580/VT480/VT58)

The further your projector is from the screen or wall, the larger the image. The minimum size the image can be is approximately 21" (0.53 m) measured diagonally when the projector is roughly 30 inches (0.8 m) from the wall or screen. The largest the image can be is 300" (7.6 m) when the projector is about 400 inches (10 m) from the wall or screen.

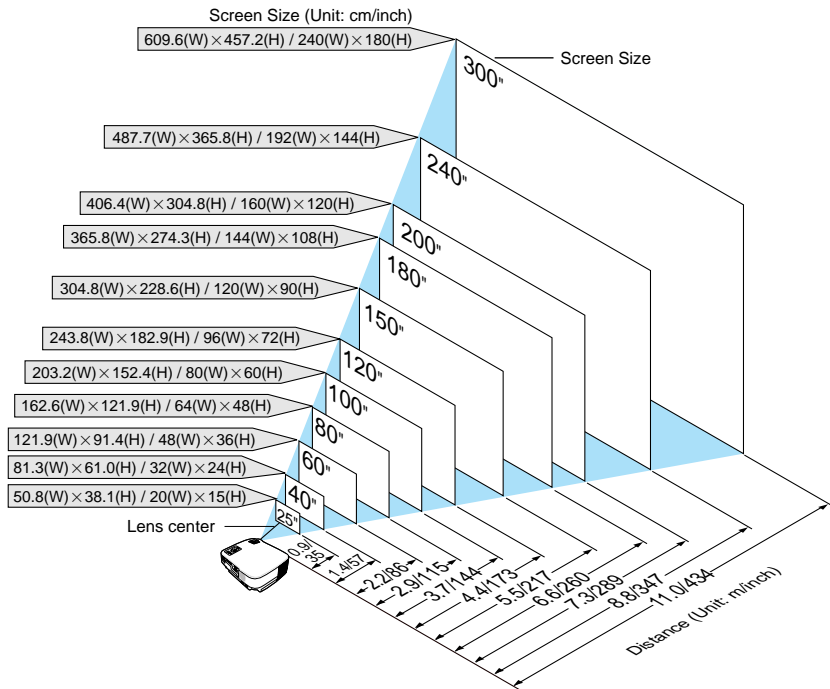


TIP:

- The distances are indicated by intermediate values between tele and wide. Use as a rule of thumb.
- The Zoom lever adjusts the image size +/-10%
- For more details on throw distance, see page 11.

Selecting a Location (VT48)

The further your projector is from the screen or wall, the larger the image. The minimum size the image can be is approximately 25" (0.64 m) measured diagonally when the projector is roughly 35 inches (0.9 m) from the wall or screen. The largest the image can be is 300" (7.6 m) when the projector is about 434 inches (11.0 m) from the wall or screen. Use the drawing below as a guide.



TIP:

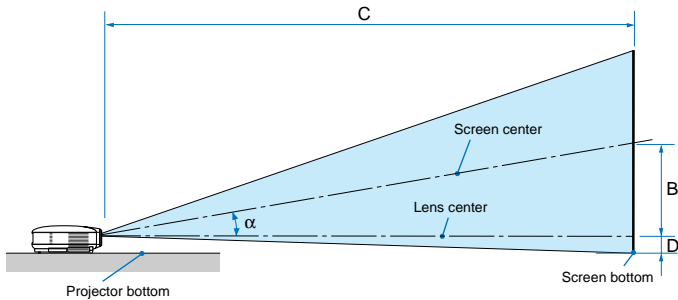
- The distances are indicated by intermediate values between tele and wide. Use as a rule of thumb.
- Digital Zoom can result in a blurry image due to the electronic zoom.
- The Zoom button adjusts the image size -10%
- For more details on throw distance, see next page.

2. Installation and Connections

Throw Distance and Screen Size

The following shows the proper relative positions of the projector and screen. Refer to the table to determine the position of installation.

Distance Chart



- B = Vertical distance between lens center and screen center
- C = Throw distance
- D = Vertical distance between lens center and screen bottom (top of screen for ceiling application)
- α = Throw angle

NOTE: Distances may vary +/-5%.

VT580/VT480/VT58

Diagonal		Screen Size				B		C				D		α			
		Width		Height				wide		tele				wide	tele		
inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	-	inch	mm	inch	mm	degree	-	degree
21	533	17	427	13	320	4	110	-	-	-	30	750	-2	-50	-	-	8.6
25	635	20	508	15	381	5	140	29	740	-	35	900	-2	-60	10.3	-	8.5
30	762	24	610	18	457	6	160	35	900	-	43	1090	-3	-70	10.2	-	8.5
40	1016	32	813	24	610	9	220	48	1210	-	57	1460	-3	-90	10.1	-	8.4
60	1524	48	1219	36	914	13	320	72	1830	-	87	2200	-5	-130	10.1	-	8.4
72	1829	58	1463	43	1097	15	390	87	2200	-	104	2650	-6	-160	10.0	-	8.4
80	2032	64	1626	48	1219	17	430	96	2450	-	116	2940	-7	-180	10.0	-	8.4
84	2134	67	1707	50	1280	18	450	101	2570	-	122	3090	-7	-190	10.0	-	8.4
90	2286	72	1829	54	1372	19	490	109	2760	-	131	3310	-8	-200	10.0	-	8.4
100	2540	80	2032	60	1524	21	540	121	3070	-	145	3690	-9	-220	10.0	-	8.3
120	3048	96	2438	72	1829	26	650	145	3690	-	174	4430	-10	-270	10.0	-	8.3
150	3810	120	3048	90	2286	32	810	182	4620	-	218	5540	-13	-330	10.0	-	8.3
180	4572	144	3658	108	2743	38	970	218	5540	-	262	6660	-16	-400	10.0	-	8.3
200	5080	160	4064	120	3048	43	1080	243	6160	-	291	7400	-17	-440	10.0	-	8.3
210	5334	168	4267	126	3200	45	1140	255	6470	-	306	7770	-18	-460	10.0	-	8.3
240	6096	192	4877	144	3658	51	1300	291	7400	-	350	8890	-21	-530	9.9	-	8.3
270	6858	216	5486	162	4115	57	1460	328	8330	-	394	10000	-24	-600	9.9	-	8.3
300	7620	240	6096	180	4572	64	1620	365	9260	-	438	11120	-26	-660	9.9	-	8.3

VT48

Diagonal		Screen Size				B		C		D		α
		Width		Height								
inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	degree
25	635	20	508	15	381	5	140	35	890	-2	-60	8.7
30	762	24	610	18	457	6	160	42	1070	-3	-70	8.6
40	1016	32	813	24	610	9	220	57	1440	-3	-90	8.5
60	1524	48	1219	36	914	13	320	86	2180	-5	-130	8.5
72	1829	58	1463	43	1097	15	390	103	2620	-6	-160	8.4
80	2032	64	1626	48	1219	17	430	115	2920	-7	-180	8.4
84	2134	67	1707	50	1280	18	450	121	3060	-7	-190	8.4
90	2286	72	1829	54	1372	19	490	129	3290	-8	-200	8.4
100	2540	80	2032	60	1524	21	540	144	3650	-9	-220	8.4
120	3048	96	2438	72	1829	26	650	173	4390	-10	-270	8.4
150	3810	120	3048	90	2286	32	810	217	5500	-13	-330	8.4
180	4572	144	3658	108	2743	38	970	260	6610	-16	-400	8.4
200	5080	160	4064	120	3048	43	1080	289	7340	-17	-440	8.4
210	5334	168	4267	126	3200	45	1140	304	7710	-18	-460	8.4
240	6096	192	4877	144	3658	51	1300	347	8820	-21	-530	8.4
270	6858	216	5486	162	4115	57	1460	391	9930	-24	-600	8.4
300	7620	240	6096	180	4572	64	1620	434	11030	-26	-660	8.4

WARNING

- * Installing your projector on the ceiling must be done by a qualified technician. Contact your NEC dealer for more information.
- * Do not attempt to install the projector yourself.
- Only use your projector on a solid, level surface. If the projector falls to the ground, you can be injured and the projector severely damaged.
- Do not use the projector where temperatures vary greatly. The projector must be used at temperatures between 41°F (5°C) and 104°F (40°C) (Eco mode selected automatically at 95°F to 104°F/35°C to 40°C).
- Do not expose the projector to moisture, dust, or smoke. This will harm the screen image.
- Ensure that you have adequate ventilation around your projector so heat can dissipate. Do not cover the vents on the side or the front of the projector.

Reflecting the Image

Using a mirror to reflect your projector's image enables you to enjoy a much larger image when a smaller space is required. Contact your NEC dealer if you need a mirror system. If you're using a mirror system and your image is inverted, use the MENU and SELECT buttons on your projector cabinet or your remote control to correct the orientation. (→ page 44)

② Making Connections

NOTE: When using with a notebook PC, be sure to connect the projector and notebook PC while the projector is in standby mode and before turning on the power to the notebook PC.

In most cases the output signal from the notebook PC is not turned on unless connected to the projector before being powered up.

* If the screen goes blank while using your remote control, it may be the result of the computer's screen-saver or power management software.

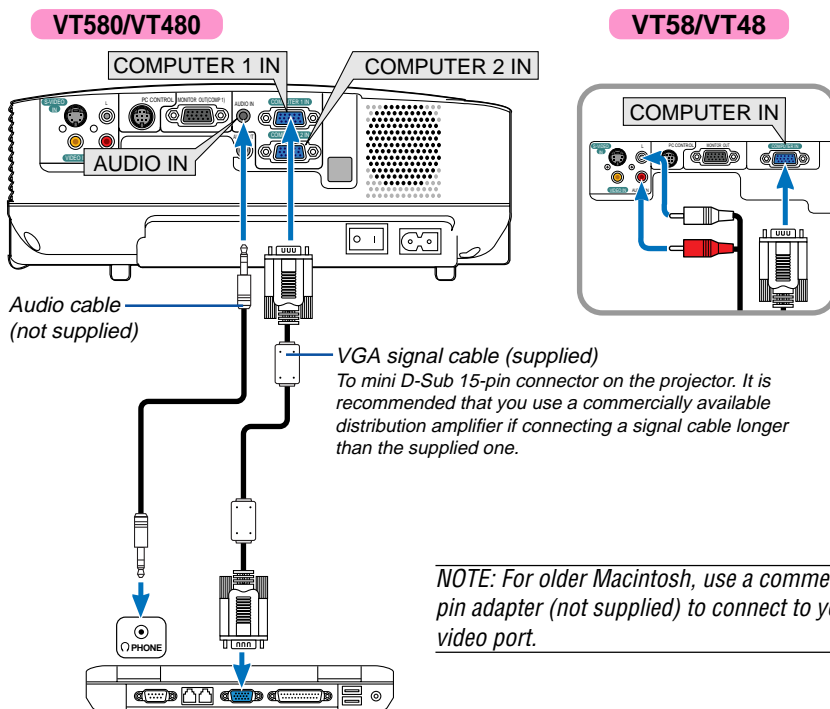
Enabling the computer's external display

Displaying an image on the notebook PC's screen does not necessarily mean it outputs a signal to the projector. When using a PC compatible laptop, a combination of function keys will enable/disable the external display. Usually, the combination of the 'Fn' key along with one of the 12 function keys gets the external display to come on or off. For example, NEC laptops use Fn + F3, while Dell laptops use Fn + F8 key combinations to toggle through external display selections.

Connecting Your PC or Macintosh Computer

NOTE: • VT580/VT480: The COMPUTER 1 connector supports Plug & Play (DDC2).

• VT58/VT48: The COMPUTER connector supports Plug & Play (DDC2).



NOTE: For older Macintosh, use a commercially available pin adapter (not supplied) to connect to your Mac's video port.

IBM VGA or Compatibles (Notebook type) or Macintosh (Notebook type)

NOTE: The projector is not compatible with video decoded outputs of either the NEC ISS-6020 and ISS-6010 switchers.

NOTE: An image may not be displayed correctly when a Video or S-Video source is played back via a commercially available scan converter.

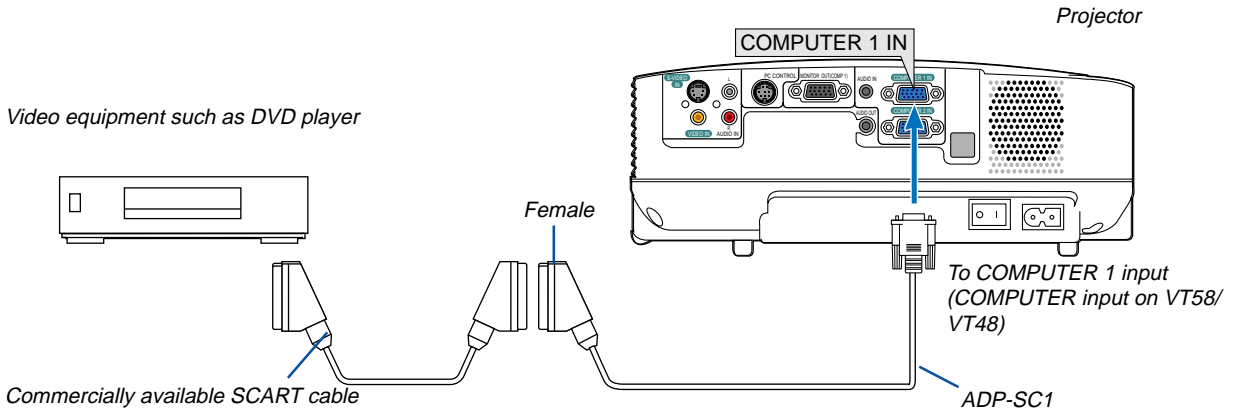
This is because the projector will process a video signal as a computer signal at the default setting. In that case, do the following.

* When an image is displayed with the lower and upper black portion of the screen or a dark image is not displayed correctly:

Project an image to fill the screen and then press the AUTO ADJ button on the remote control or the projector cabinet.

2. Installation and Connections

To connect SCART output (RGB)



Before connections: An exclusive SCART adapter (ADP-SC1) and a commercially available SCART cable are required for this connection.

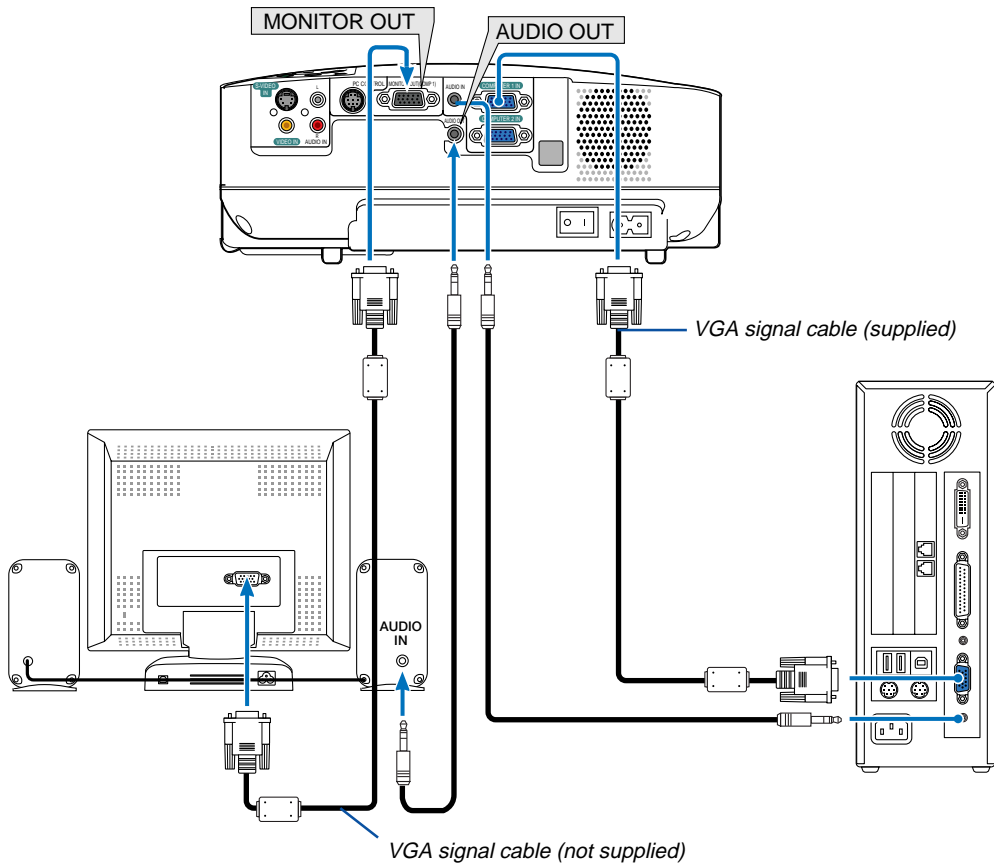
From the menu, select [Setup] → [Options] → [Signal Select] → [Computer 1 ([Computer] on VT58/VT48)] → [Scart]. SCART is a standard European audio-visual connector for TVs, VCRs and DVD players. It is also referred to as Euro-connector.

TIP: If a DVD or VCR source will not be displayed correctly, stop playback and restart it.

NOTE: Audio signal is not available for this connection.

TIP: The ADP-SC1 SCART adapter is obtainable from your NEC dealer in Europe. Contact your NEC dealer in Europe for more information.

Connecting an External Monitor

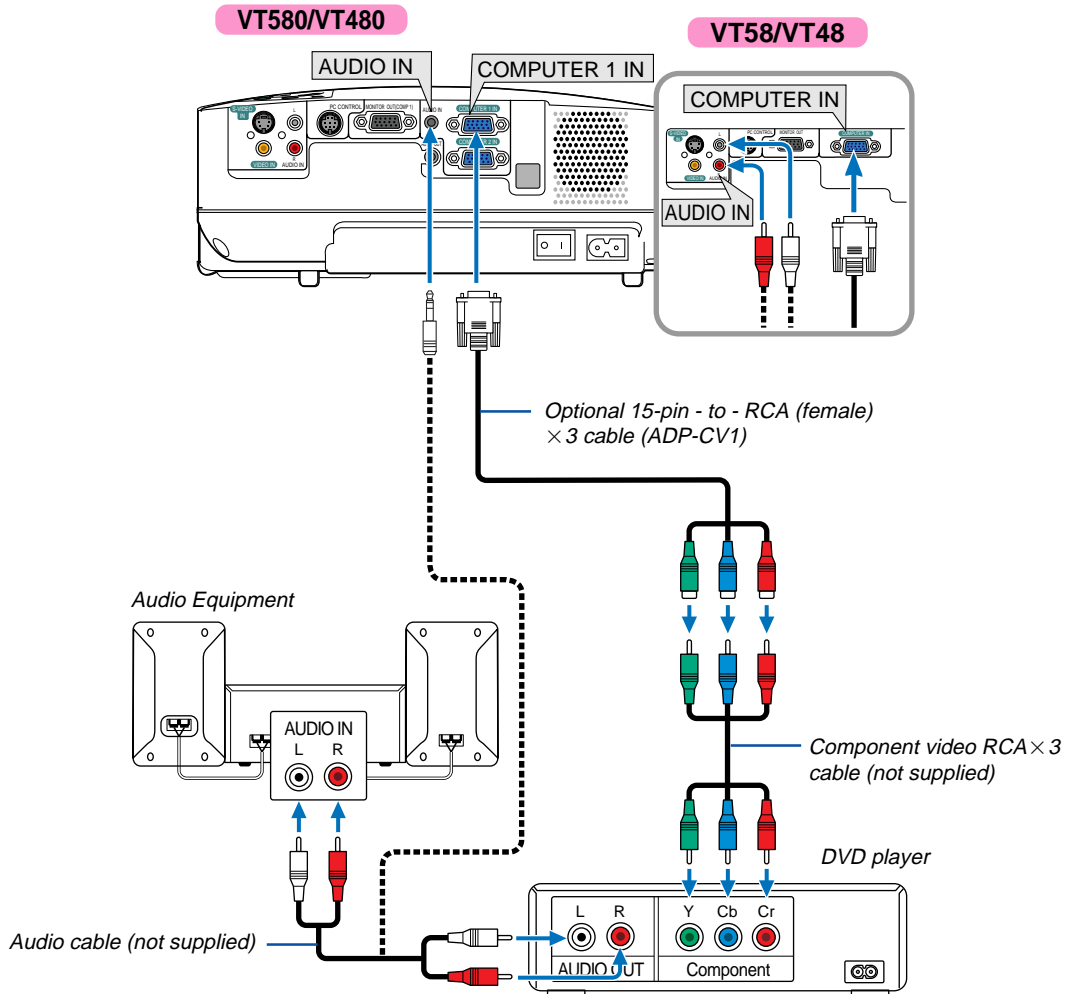


You can connect a separate, external monitor to your projector to simultaneously view on a monitor the RGB analog image you're projecting.

NOTE:

- *Daisy chain connection is not possible.*
 - *The signal from the COMPUTER 2 IN connector cannot be output from the MONITOR OUT connector on VT580 and VT480.*
 - *The VT58 and VT48 do not have the AUDIO OUT connector.*
-

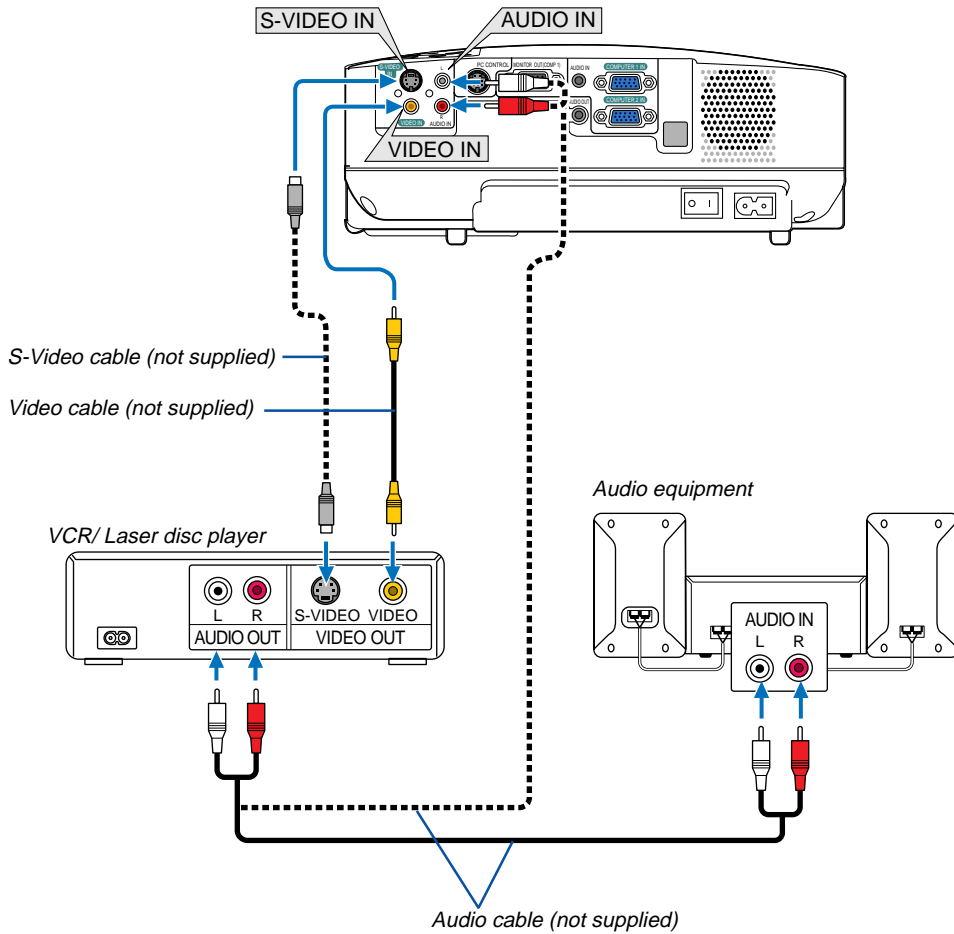
Connecting Your DVD Player with Component Output



A component signal will be automatically displayed. If not, from the menu, select [Setup] → [Options] → [Signal Select] → [Computer 1 ([Computer] on VT58/VT48)], and then place a check mark in the Component radio button.

NOTE: Refer to your DVD player's owner's manual for more information about your DVD player's video output requirements.

Connecting Your VCR or Laser Disc Player



NOTE: The AUDIO IN L/MONO and R jacks (RCA) are shared between the Video and S-Video inputs.

NOTE: Refer to your VCR or laser disc player owner's manual for more information about your equipment's video output requirements.

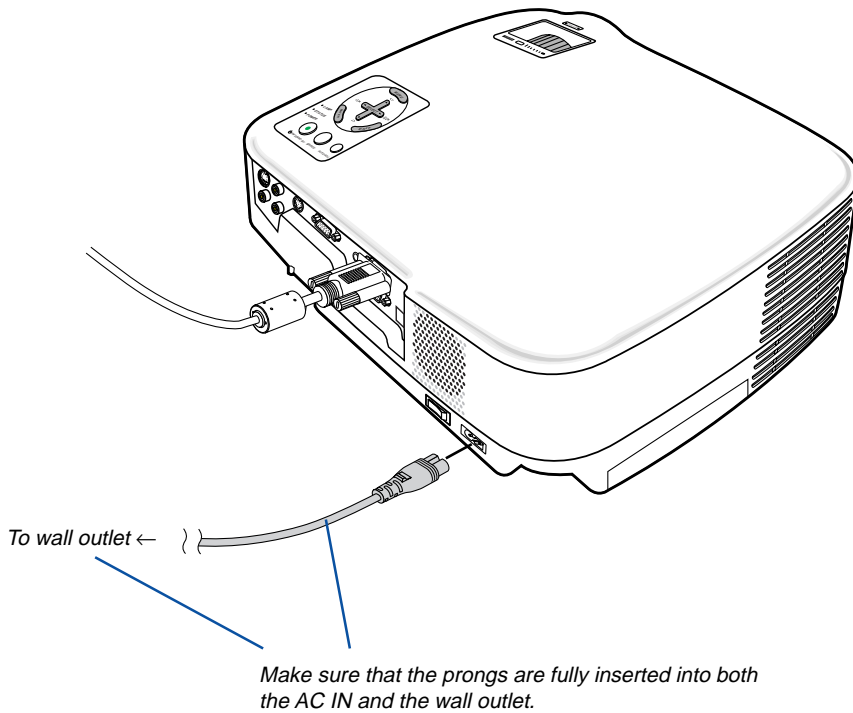
NOTE: An image may not be displayed correctly when a Video or S-Video source is played back in fast-forward or fast-rewind via a scan converter.

2. Installation and Connections

Connecting the Supplied Power Cable

Connect the supplied power cable to the projector.

First connect the supplied power cable's two-pin plug to the AC IN of the projector, and then connect the other plug of the supplied power cable in the wall outlet.



⚠ CAUTION:

Do not try to touch the ventilation outlet on the left front (when seen from the front) as it can become heated while the projector is turned on and immediately after the projector is turned off.

⚠ CAUTION:

Do not turn off the AC power by pressing the main power switch or by unplugging the power cable when the projector is powered on. Doing so can cause damage to the projector.

TIP: The projector can be turned off (by either the main power switch or by unplugging the power cable) during its cool down period after it is turned off using the remote control or via the power button on the control panel.

3. Projecting an Image (Basic Operation)

This section describes how to turn on the projector and to project a picture onto the screen.

1 Turning on the Projector

NOTE:

- The projector has two power switches: a main power switch and a POWER (ON/STAND BY) button (POWER ON and OFF on the remote control).
- When plugging in or unplugging the supplied power cable, make sure that the main power switch is pushed to the off (O) position. Failure to do so may cause damage to the projector.

1. To turn on the main power to the projector, press the Main Power switch to the on position (I).

The POWER indicator will light orange.

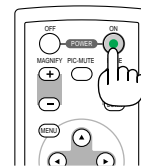
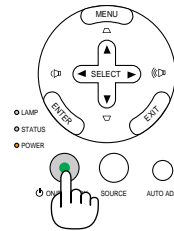
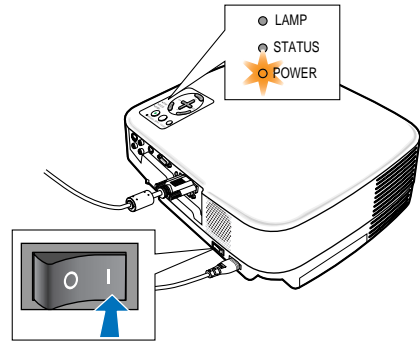
See the Power Indicator section.(→ page 54)

2. Remove the lens cap

3. Press the POWER (ON/STAND BY) button on the projector cabinet or the POWER ON button on the remote control for 1 second.

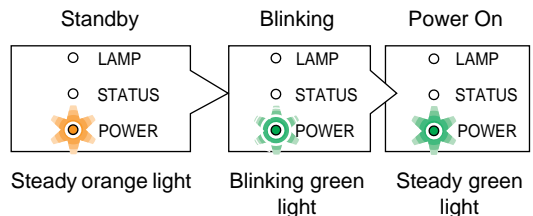
The POWER indicator will turn to green and the projector will become ready to use.

After you turn on your projector, ensure that the computer or video source is turned on and that your lens cap is removed.



NOTE: When no signal is available, a blue or black screen is displayed. (only black screen on VT48)
When the projector displays a blue or black screen, the projector will automatically switch to the Eco mode.
The projector will return to the Normal mode once a signal is connected.

NOTE: If you turn on the projector immediately after the lamp is turned off or when the temperature is high, the fans run without displaying an image for some time and then the projector will display the image.



(→ page 54)

CAUTION:

The projector cannot be turned off for 60 seconds after the lamp is turned on and while the POWER indicator is blinking green. Doing so could cause premature lamp failure.

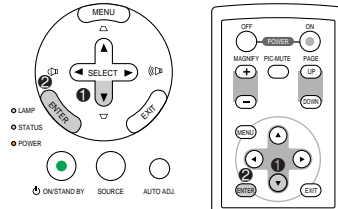
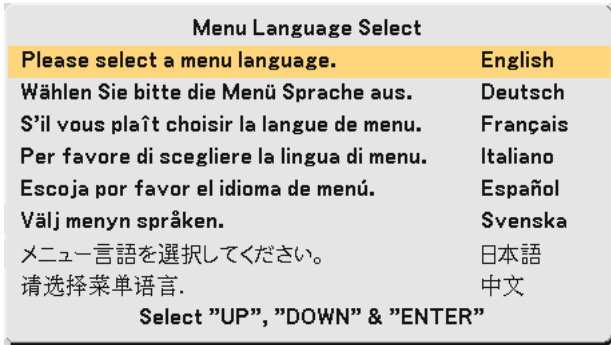
3. Projecting an Image (Basic Operation)

Note on Startup screen (Menu Language Select screen)

When you first turn on the projector, you will get the Startup menu. This menu gives you the opportunity to select one of the 8 menu languages.

To select a menu language, follow these steps:

1. Use the **SELECT ▲** or **▼** button to select one of the 8 languages from the menu.



2. Press the **ENTER** button to execute the selection.

After this has been done, you can proceed to the menu operation.

If you want, you can select the menu language later.

(→ [Language] on page 38 and 43)

NOTE: Immediately after turning on the projector, screen flicker may occur. This is normal. Wait 3 to 5 minutes until the lamp lighting is stabilized.

When the Lamp mode is set to Eco, the LAMP indicator will light green.

If one of the following things happens, the projector will not turn on.

- If the internal temperature of the projector is too high, the projector detects abnormal high temperature. In this condition the projector will not turn on to protect the internal system. If this happens, wait for the projector's internal components to cool down.
- When the lamp reaches its end of usable life, the projector will not turn on. If this happens, replace the lamp.
- If the lamp fails to light, and if the STATUS indicator flashes on and off in a cycle of six times, wait a full minute and then turn on the power.

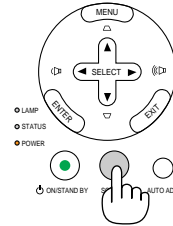
2 Selecting a Source

Selecting the computer or video source

NOTE: Turn on the computer or VCR connected to the projector.

Selecting from Source List

Press and quickly release the SOURCE button on the projector cabinet to display the Source list. Each time the SOURCE button is pressed, the input source will change as follows: "Computer 1", "Computer 2" (VT580/VT480 only), "Video" (VCR or laser disc player), "S-Video". To display the selected source, allow 1 second to elapse.



Detecting the Signal Automatically

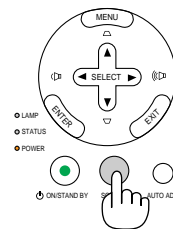
Press and hold the SOURCE button for a minimum of 2 seconds, the projector will search for the next available input source. Each time you press and hold the SOURCE button for a minimum of 2 seconds, the input source will change as follows:

VT580/VT480

Computer1 → Computer2 → Video → S-Video → Computer1 → ...

VT58/VT48

Computer → Video → S-Video → Computer → ...



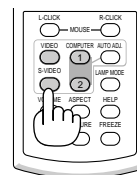
TIP:

If no input signal is present, the input will be skipped. When the input source you wish to project is displayed, release the SOURCE button.

Using the Remote Control

Press any one of the COMPUTER 1/2, VIDEO, S-VIDEO buttons.

NOTE: the COMPUTER 2 button is not available on the VT58 and VT48.



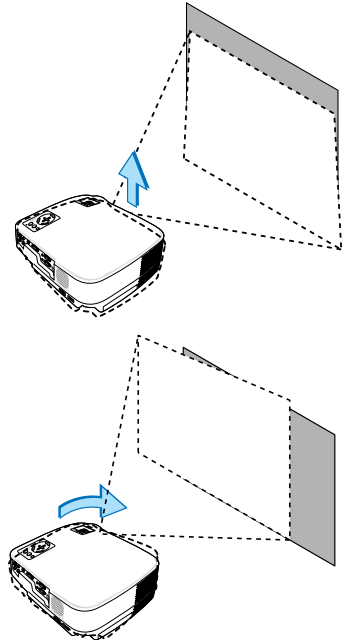
③ Adjusting the Picture Size and Position

Place your projector on a flat level surface and ensure that the projector is square to the screen.

Lift the front edge of the projector to center the image vertically.

* If the projected image does not appear square to the screen then use the Keystone feature for proper adjustment. (→ page 24)

Move the projector left to center the image horizontally on the screen.



Adjust the Tilt Foot

1. Lift the front edge of the projector.

⚠ CAUTION:

Do not try to touch the ventilation outlet during Tilt Foot adjustment as it can become heated while the projector is turned on and during its cool down period after it is turned off.

2. Push and hold the Adjustable Tilt Foot Button on the front of the projector to extend the adjustable tilt foot.

3. Lower the front of the projector to the desired height.

4. Release the Adjustable Tilt Foot Button to lock the Adjustable tilt foot.

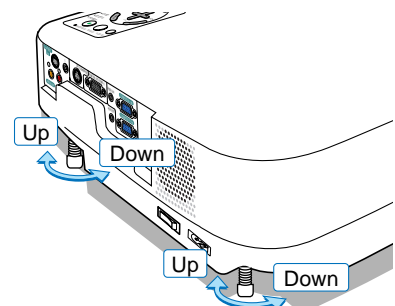
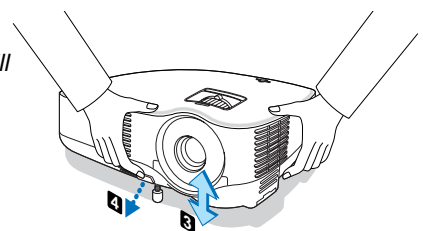
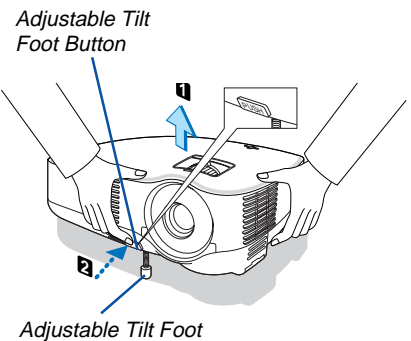
There is approximately 10 degrees (up) of adjustment for the front of the projector.

Adjusting the height of a projected image or changing projection angle will run the Auto Keystone correction function to quickly correct the vertical distortion. The "Keystone" screen will be displayed.

For operating the "Keystone" screen, see "Correcting Keystone Distortion" on page 24.

The rear foot can be adjusted up to 0.4 inch/10 mm.

Rotate the rear foot to the desired height in order to square the image on the projection surface, but the vertical distance from the bottom to the desk or floor should be 0.4 inch /10mm to make the projector horizontal on the flat surface.



NOTE: If you rotate the rear foot too much, it will come off from the bottom.

⚠ CAUTION:

- Do not use the tilt-foot for purposes other than originally intended. Misuses such as using the tilt foot to carry or hang (from the wall or ceiling) the projector can cause damage to the projector.

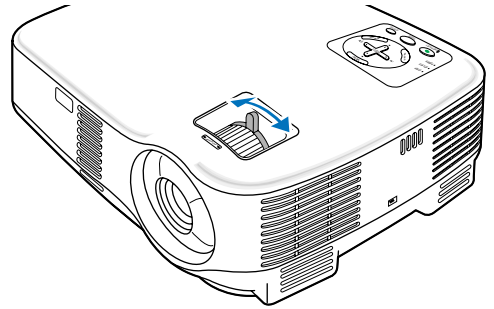
3. Projecting an Image (Basic Operation)

Zoom

VT580/VT480/VT58

Use the ZOOM lever to adjust the image size on the screen.

VT580/VT480/VT58

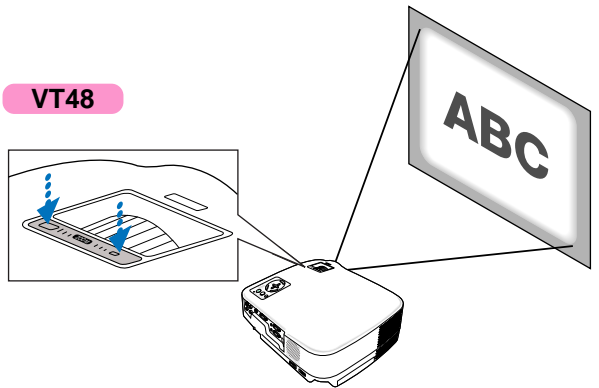


VT48

Use the Digital ZOOM button on the projector cabinet to electronically enlarge or reduce the image size.

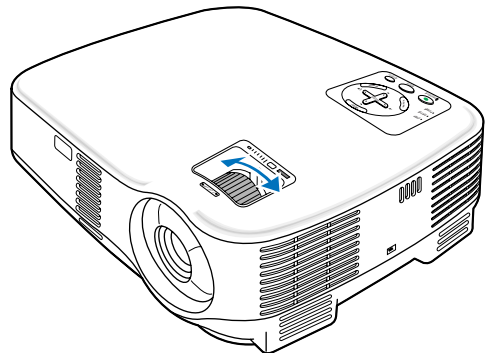
NOTE: Digital Zoom can result in a blurry image due to the electronic zoom.

VT48



Focus

Use the FOCUS ring to obtain the best focus.



4 Correcting Keystone Distortion

Correcting Keystone Distortion

If the screen is tilted vertically, keystone distortion becomes large. Proceed with the following steps to correct keystone distortion



NOTE: The Keystone correction can cause an image to be slightly blurred because the correction is made electronically.

NOTE: The Keystone correction range can be made narrower, depending on a signal or its aspect ratio selection.

Adjusting with buttons on the cabinet

1. Press the **SELECT ▲** or **▼** button with no menus displayed

After the Keystone screen is displayed, press the **SELECT ▲** or **▼** button to correct the keystone distortion.



2. Press the **EXIT** button.

The Keystone screen will be closed. The changes will take effect.

*NOTE: When the menu is displayed, the above operation is not available. When the menu is displayed, press the **MENU** button to display the menu and start the Keystone correction from the menu.*

From the menu, select [Setup] → [General] → [Keystone]. The changes can be saved with [Keystone Save]. (→page 43)

Adjusting with the Remote Control

1. Press the **MENU** button.

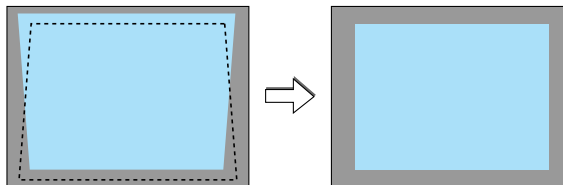
The menu will be displayed.

2. Press the **SELECT ▼** button to select [Setup] and press the **ENTER** button.

3. Press the **SELECT ▼** button to select [Keystone].

4. Press the **SELECT ◀** or **▶** button.

Adjust so that the image is rectangular.



5. Press the **MENU** button.

The menu will be closed.

NOTE: The Keystone correction can cause an image to be slightly blurred because the correction is made electronically.

TIP: The changes can be saved with [Keystone Save]. (→page 43)

3. Projecting an Image (Basic Operation)

Adjusting with the Auto Keystone Function (VT580 only)

The Auto Keystone correction feature will correct the vertical distortion of a projected image on the screen. No special operation required. Just put the projector on a flat surface.

TIP: Even when the menu setting for [Auto Keystone] is turned on, [Keystone] can be adjusted manually.

To turn on [Auto Keystone], proceed the following steps.

1. Press the MENU button

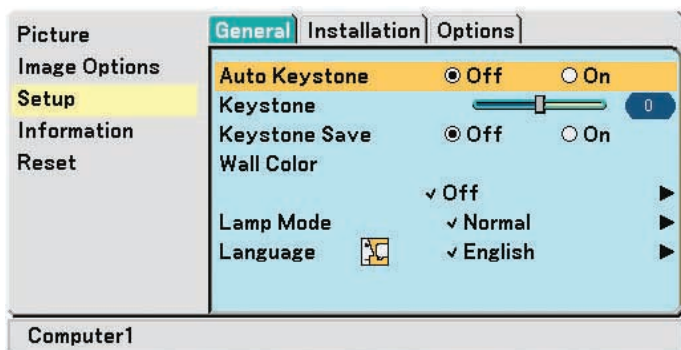
The menu will be displayed.

2. Press the SELECT ▼ button to select [Setup] and press the ENTER button.

The [General] tab will be highlighted.

3. Press the SELECT ▼ button.

The [Auto Keystone] will be highlighted.



4. Press the SELECT ◀ or ▶ button to select [On].

5. Press the MENU button.

The menu will be closed.

NOTE:

- Vertical distortions between offset angles of +/- 30 degrees can be corrected.
- The Auto Keystone correction will take effect in 2 seconds after changing the projection angle during projection.
- The left and right (horizontal) keystone correction is not available.

Place the projector so that the lens surface is parallel to the screen.

The rear feet of the projector can be adjusted to level the projector.

NOTE:

- Auto and Manual Keystone correction angle could be less than 30 degrees depending on the signal and/or aspect ratios.
 - Using keystone correction can cause the image to be slightly blurred because the correction is made electronically.
-

NOTE:

- When the menu is displayed, the Keystone Correction operation is not available by using the buttons on the projector cabinet. When the menu is displayed, press the EXIT button to close the menu and then perform the Keystone correction.
- From the menu, select [Setup] → [General] → [Keystone]. The changes can be saved with [Keystone Save].

(→page 43)

5 Optimizing RGB Picture Automatically

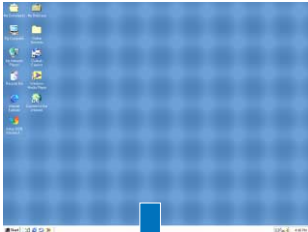
Adjusting the Image Using Auto Adjust

Optimizing an RGB image automatically.

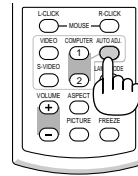
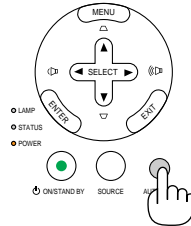
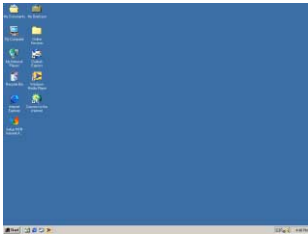
Press the AUTO ADJ. button to optimize an RGB image automatically.

This adjustment may be necessary when you connect your computer for the first time.

[Poor picture]



[Normal picture]

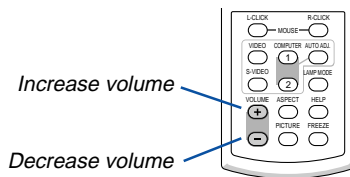


NOTE:

Some signals may take time to display or may not be displayed correctly.

- The Auto Adjust function does not work for component and video signal.
- If the Auto Adjust operation cannot optimize the RGB signal, try to adjust Horizontal/Vertical Position Clock and Phase manually. (→page 42)

6 Turning Up or Down Volume



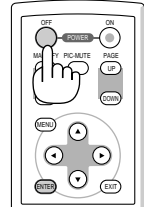
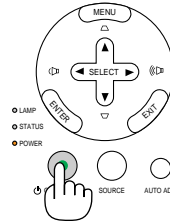
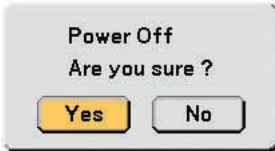
Sound level from the speaker can be adjusted.

TIP: When no menus appear, the SELECT ◀ and ▶ buttons on the projector cabinet work as a volume control.

7 Turning off the Projector

To turn off the projector:

1. First, press the **POWER (ON/STAND BY)** button on the projector cabinet or the **POWER OFF** button on the remote control. The [Power Off / Are you sure?] message will appear.



2. Secondly, press the **ENTER** button or press the **POWER (ON/STAND BY)** or the **POWER OFF** button again.

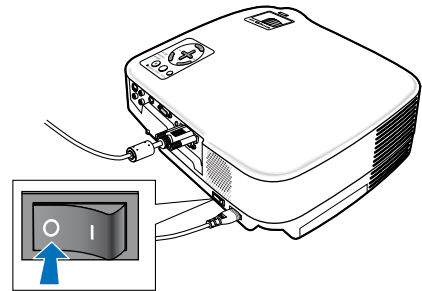
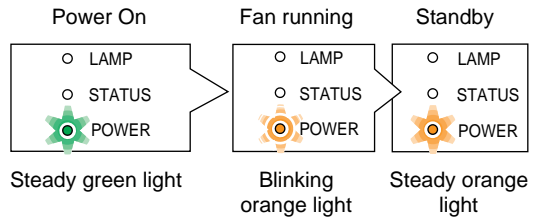
The power indicator will glow orange. After the projector turns off, the cooling fans keep operating for 30 seconds (Cool-down time).

Immediately after turning on the projector and displaying an image, you cannot turn off the projector for 60 seconds.

3. Finally, turn off the Main Power switch. The power indicator will go out.

TIP: The main power of the projector can be turned off by pressing the main power switch or by unplugging the power cable even during the cool down period after the projector is turned off.

NOTE: Do not turn off the main power within 10 seconds of making adjustment or setting changes and closing the menu. Doing so can cause loss of adjustments and settings.



CAUTION:

Parts of the projector will become heated during operation. Use caution when picking up the projector immediately after it has been operating.

CAUTION:

- The projector cannot be turned off for 60 seconds after the lamp is turned on and while the POWER indicator is blinking green. Doing so could cause premature lamp failure.
- Do not turn off the AC power by pressing the main power switch or by unplugging the power cable when the projector is powered on. Doing so can cause damage to the projector.

8 After Use

Preparation: Make sure that the projector is turned off.

1. *Unplug the power cable.*
2. *Disconnect any other cables.*
3. *Retract adjustable tilt feet if extended.*
4. *Cover the lens with the lens cap.*
5. *Put the projector and accessories in the supplied soft case.*

 **CAUTION:**

Use caution when putting the projector in the soft case immediately after the projector has been operating. The projector cabinet is hot.

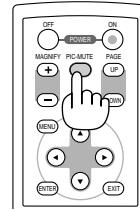
4. Convenient Features

❶ Turning off the Image and Sound

Press the PIC-MUTE button to turn off the image and sound for a short period of time. Press again to restore the image and sound.

NOTE:

Sound from the AUDIO OUT jack (Stereo mini) on the VT580/VT480 can be turned off.



❷ Freezing a Picture

Press the FREEZE button to freeze a picture. Press again to resume motion.



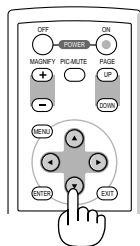
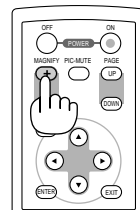
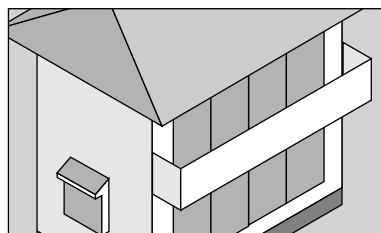
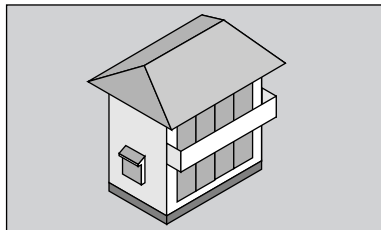
❸ Enlarging a Picture

You can enlarge the picture up to four times.

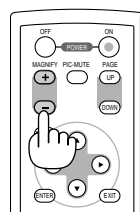
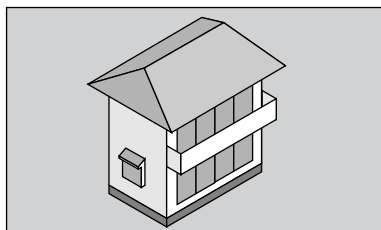
NOTE: The maximum magnification may be less than four times depending on a signal.

To do so:

1. Press the **MAGNIFY (+)** button to magnify the picture.
To move the magnified image, use the **SELECT ▲, ▼, ◀, ▶** button.



2. Press the **MAGNIFY (-)** button to return the image to the original size.



4 Changing Lamp Mode

This feature enables you to select two brightness modes of the lamp: Normal and Eco modes. The lamp life can be extended by using the Eco mode.

Lamp Mode	Description	Status of LAMP indicator
Normal Mode	This is the default setting (100% Brightness).	Off
Eco Mode	Select this mode to increase the lamp life (80% Brightness).	Steady Green light

To change to the [Eco] mode, do the following:

1. Press the **LAMP MODE** button on the remote control to display [Lamp Mode] screen.
2. Use the **SELECT ▲** or **▼** button to select [Eco] mode.
3. Press the **ENTER** button.
To change from [Eco] to [Normal], Go back to Step 2 and select [Normal]. Repeat Step 3.

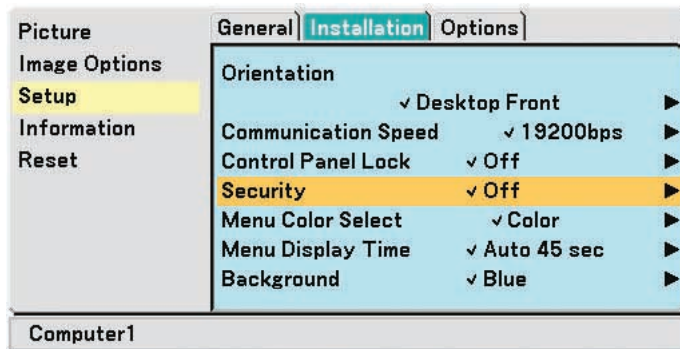
NOTE:

- The Lamp Mode can be changed by using the menu.
Select [Setup] → [General] → [Lamp Mode].
- The lamp life remaining and lamp hours used can be checked in [Usage Time]. Select [Information] → [Usage Time].
- If the projector is overheated in Normal mode, there may be a case where the Lamp mode automatically changes to Eco mode to protect the projector. When the projector is in Eco mode, the picture brightness decreases. When the projector comes back to normal temperature, the Lamp mode returns to Normal mode.
Thermometer symbol [🌡] indicates the lamp mode is automatically set to Eco mode because the internal temperature is too high.

5 Preventing the Unauthorized Use of the Projector

To enable the Security function:

1. Press the **MENU** button.
The menu will be displayed.
2. Use the **SELECT ▲** or **▼** button to select [Setup] and press the **ENTER** button.



Example of menu for VT580, VT480 and VT58

3. Use the **SELECT ◀** or **▶** button to select [Installation].
4. Use the **SELECT ▲** or **▼** button to select [Security] and press the **SELECT ▶** button.