

Data Projector

Operating Instructions _____

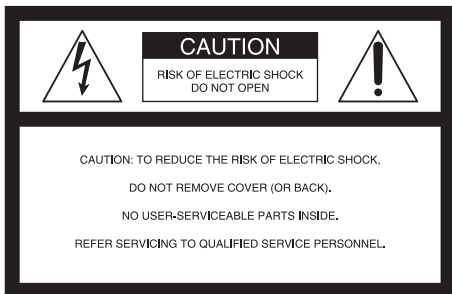
GB

VPL-CX85

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.



This symbol is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

For the customers in the USA

If you have any questions about this product, you may call:

Sony Customer Information Service Center
1-800-222-7669 or <http://www.sony.com/>
The number below is for FCC related matters only.

Declaration of Conformity

Trade Name: SONY
Model No.: VPL-CX85
Responsible Party: Sony Electronics Inc.

Address: 16450 W. Bernardo Dr, San Diego, CA 92127 U.S.A.

Telephone Number: 858-942-2230

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.

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.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

This product contains mercury. Disposal of this product may be regulated if sold in the United States. For disposal or recycling information, please contact your local authorities or Electronics Industries Alliance (www.eiae.org).

Important Notice

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

This equipment should be installed and operated with minimum distance 20cm between the radiator and body (excluding extremities: hands, wrists and feet).



This label is located on the rear of the Remote Commander.



This label is located on the rear of the Remote Commander.

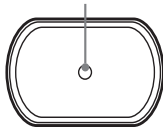


This label is located on the rear of the Remote Commander.

AVOID EXPOSURE LASER RADIATION IS EMITTED FROM THIS APERTURE.

This label is located on the rear of the Remote Commander.

Laser light shines out of this window.



Caution

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Notes

- Do not aim the laser at people or not look into the laser transmitter.
- When the Remote Commander causes malfunction, consult with qualified Sony

personnel. We change the Remote Commander as new one according to the guarantee.

For the customers in Canada

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

Voor de klanten in Nederland



Gooi de batterij niet weg maar lever deze in als klein chemisch afval (KCA).

The socket-outlet should be installed near the equipment and be easily accessible.

CAUTION

RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.
DISPOSED OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

Table of Contents

Overview

| | |
|--------------------------------------|----|
| Precautions | 6 |
| Notes on Installation | 7 |
| Unsuitable Installation | 7 |
| Usage in High Altitude | 8 |
| Unsuitable Conditions | 8 |
| About the Supplied Manuals | 9 |
| Features | 9 |
| Location and Function of Controls .. | 12 |
| Top/Front/Left Side | 12 |
| Rear/Right Side/Bottom | 12 |
| Control Panel | 13 |
| Connector Panel | 14 |
| Remote Commander | 15 |
| Presentation Tool | 17 |

Setting Up and Projecting

| | |
|----------------------------------|----|
| Installing the Projector | 19 |
| Connecting the Projector | 20 |
| Connecting with a Computer | 20 |
| Connecting with a VCR | 22 |
| Projecting | 23 |
| Turning Off the Power | 25 |

Convenient Function

| | |
|---|----|
| Selecting the Menu Language | 26 |
| Security Lock | 27 |
| Other Functions | 28 |
| Switching from the Intelligent Auto- setup Function to Manual Adjustments | 28 |

| | |
|--|----|
| Controlling the Computer Using the Supplied Remote Commander (When Using the USB Cable) | 28 |
| Controlling the Computer Using the Supplied Presentation Tool (When Using the Air Shot) | 28 |
| Off & Go Function | 29 |
| Direct Power On/Off Function | 29 |
| Effective Tools for Your Presentation | 29 |

Adjustments and Settings Using the Menu

| | |
|--------------------------------|----|
| Using the MENU | 31 |
| The PICTURE SETTING Menu | 33 |
| The INPUT SETTING Menu | 34 |
| The SET SETTING Menu | 36 |
| The MENU SETTING Menu | 38 |
| The INSTALL SETTING Menu | 39 |
| The INFORMATION Menu | 40 |

Maintenance

| | |
|-------------------------------|----|
| Maintenance | 41 |
| Replacing the Lamp | 41 |
| Cleaning the Air Filter | 43 |
| Troubleshooting | 44 |
| Warning Messages | 47 |
| Caution Messages | 48 |

Others

| | |
|---|----|
| Specifications | 49 |
| Installation Diagram | 56 |
| Floor Installation (Front Projection) | 56 |
| Ceiling Installation (Front Projection) | 58 |
| “Side Shot” and “V Keystone” Adjustments | 60 |
| Dimensions | 62 |
| Index | 64 |

Precautions

On safety

- Check that the operating voltage of your unit is identical with the voltage of your local power supply.
- Should any liquid or solid object fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it further.
- Unplug the unit from the wall outlet if it is not to be used for several days.
- To disconnect the cord, pull it out by the plug. Never pull the cord itself.
- The wall outlet should be near the unit and easily accessible.
- The unit is not disconnected to the AC power source (mains) as long as it is connected to the wall outlet, even if the unit itself has been turned off.
- Do not look into the lens while the lamp is on.
- Do not place your hand or objects near the ventilation holes. The air coming out is hot.
- Be careful not to have your fingers caught by the adjuster. The powered tilt adjuster of this unit automatically extends when the power is turned on, and is put away automatically when the power is turned off. Do not touch the unit while the adjuster is in operation. Adjust the powered tilt adjuster carefully after its automatic operation is completed.
- Do not spread a cloth or paper under the unit.

On illumination

- To obtain the best picture, the front of the screen should not be exposed to direct lighting or sunlight.
- Ceiling-mounted spot lighting is recommended. Use a cover over fluorescent lamps to avoid lowering the contrast ratio.
- Cover any windows that face the screen with opaque draperies.
- It is desirable to install the unit in a room where floor and walls are not of light-reflecting material. If the floor and walls

are of reflecting material, it is recommended that the carpet and wall paper be changed to a dark color.

On preventing internal heat build-up

After you turn off the power with the I / ⏻ key, do not disconnect the unit from the wall outlet while the cooling fan is still running.

Caution

The unit is equipped with ventilation holes (intake) and ventilation holes (exhaust). Do not block or place anything near these holes, or internal heat build-up may occur, causing picture degradation or damage to the projector.

On cleaning

- To keep the cabinet looking new, periodically clean it with a soft cloth. Stubborn stains may be removed with a cloth lightly dampened with a mild detergent solution. Never use strong solvents, such as thinner, benzene, or abrasive cleansers, since these will damage the cabinet.
- Avoid touching the lens. To remove dust on the lens, use a soft dry cloth. Do not use a damp cloth, detergent solution, or thinner.
- Clean the filter at regular intervals.

On LCD data projector

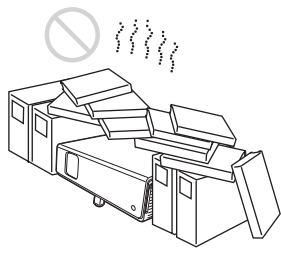
- The LCD data projector is manufactured using high-precision technology. You may, however, see tiny black points and/or bright points (red, blue, or green) that continuously appear on the LCD data projector. This is a normal result of the manufacturing process and does not indicate a malfunction.

Notes on Installation

Unsuitable Installation

Do not install the projector in the following situations. **These installations may cause malfunction or damage** to the unit.

Poorly ventilated



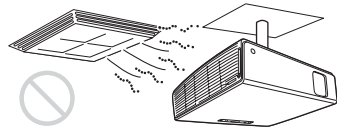
- Allow adequate air circulation to prevent internal heat build-up. Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation holes. When the internal heat builds up due to the block-up, the temperature sensor will function with the message “High temp.! Lamp off in 1 min.” The power will be turned off automatically after one minute.
- Leave space of more than 30 cm (11 7/8 inches) around the unit.
- Be careful that the ventilation holes may inhale tininess such as a piece of paper.

Highly heated and humid



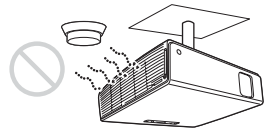
- Avoid installing the unit in a location where the temperature or humidity is very high, or temperature is very low.
- To avoid moisture condensation, do not install the unit in a location where the temperature may rise rapidly.

Subject to direct cool or warm air from an air-conditioner



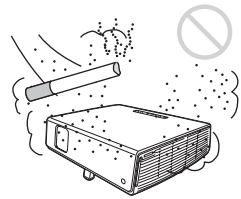
Installing in such a location may cause malfunction of the unit due to moisture condensation or rise in temperature.

Near a heat or smoke sensor



Malfunction of the sensor may be caused.

Very dusty, extremely smoky



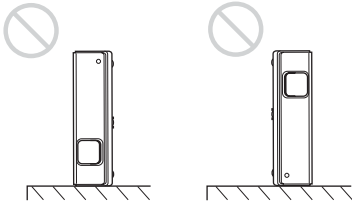
Avoid installing the unit in a very dusty or extremely smoky environment. Otherwise, the air filter will become obstructed, and this may cause a malfunction of the unit or damage it. Dust preventing the air passing through the filter may cause a rise in the internal temperature of the unit. Clean the filter periodically.

Unsuitable Conditions

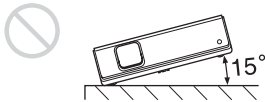
Do not use the projector under the following conditions.

Topping the unit

Avoid using as the unit topples over on its side. It may cause malfunction.

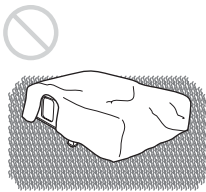


Tilting the unit to the right or left



Avoid tilting the unit to an angle of 15°, and avoid installing the unit in any way other than placing on the floor or suspending from the ceiling. Such installation may cause color shading or shorten the lamp life excessively.

Blocking the ventilation holes



Avoid using a thick-piled carpet or anything that covers the ventilation holes (exhaust/intake); otherwise, the internal heat may build up.

For details on the ventilation holes (intake/exhaust), see “Location and Function of Controls” on page 12.

Usage in High Altitude

When using the projector at an altitude of 1,500 m or higher, turn on “High Altitude Mode” in the INSTALL SETTING menu. Failing to set this mode when using the projector at high altitudes could have adverse effects, such as reducing the reliability of certain components.

Note on carrying the projector

The unit is manufactured using high-precision technology. When transporting the unit stored in the carrying case, do not drop the unit or subject it to shock, as this may cause damage. When storing the unit in the carrying case, disconnect the AC power cord and all other connecting cables or cards, and store the supplied accessories in a pocket of the carrying case.

Note on the screen

When using a screen with an uneven surface, stripes pattern may rarely appear on the screen depending on the distance between the screen and the projector or the zooming magnifications. This is not a malfunction of the projector.

About the Supplied Manuals

Names of Manuals

The following manuals are supplied with this unit.

Operating Instructions (this manual)

The Operating Instruction describe the setup and operations of this unit.

Operating Instructions for Memory Stick (contained in the CD-ROM)

The Operating Instructions describe how to view slides using the files stored in the **Memory Stick**.

Operating Instructions for Air Shot (contained in the CD-ROM)

The Operating Instructions describe how to set up and operate the Air Shot.

PROJECTOR STATION for Air Shot Help (contained in the CD-ROM)

This help describes how to operate the PROJECTOR STATION for Air Shot (Wireless connecting function) software.

Operating Instructions for USB Storage Media

The Operating Instructions describe how to use the USB storage Media.

USB Wireless LAN Module Utility (contained in the CD-ROM)

The Operating Instructions describe how to set up the USB Wireless LAN module.

PROJECTOR STATION for Presentation Help (contained in the CD-ROM)

The PROJECTOR STATION for Presentation is an application software for creating the files for a presentation performed using the **Memory Stick** without connecting a computer.

This help explains the configuration of the PROJECTOR STATION for Presentation windows and how to use it.

Note

It is necessary that Adobe Acrobat Reader 5.0 or more is installed to read the Operating Instructions contained in the supplied CD-ROM.

Features

High brightness, high picture quality

High brightness

Adopting Sony's unique new optical system that incorporates newly developed LCD panels provides a high-efficiency optical system. It allows the 190 W UHP lamp to give a light output of 3000ANSI lumen.

High picture quality

Three super-high-aperture 0.79-inch XGA panels with approximately 790,000-pixel micro-lens array, produce a resolution of 1024 × 768 dots (horizontal/vertical) for RGB input, and 750 horizontal TV lines for video input.

Variety of network presentations

Air Shot feature incorporated

Air Shot features data transmission from a computer to the projector via wireless LAN. Use of the supplied wireless LAN card (for the projector) and the USB wireless LAN module (for a computer) enables a wireless presentation.

A Simple Mode is also available without setting up the network and wireless LAN configurations, allowing you to start the wireless presentation easily if you are using the wireless LAN for the first time.

For details on the Air Shot feature, refer to "Operating Instructions for Air Shot" and "PROJECTOR STATION for Air Shot Help" contained in the supplied CD-ROM.

Presentation without connecting a computer

Use of a **Memory Stick** enables you to run a simple presentation without connecting a computer.

“PROJECTOR STATION for Presentation” software is supplied, allowing you to create files for a presentation.

For more information, refer to “Operating Instructions for Memory Stick” and “PROJECTOR STATION for Presentation” in Help.

Presentation tool with a laser pointer

The supplied presentation tool allows you to use a laser pointer, or to advance a slide to the next or previous page for your Air Shot presentation.

Quiet presentation environment

Low fan noise is achieved and offensive sound to the ear is also reduced, allowing you to run an optimum presentation even in a quiet environment.

Easy setup and simple operation

Intelligent Auto-setup function

Simply press the power key, and the projector automatically performs the setups required before use. The projector opens the lens protector, corrects the V Keystone, detects a signal, and sets optimum conditions for projection.

Powered zoom/focus equipped

The projector is equipped with a powered zoom and powered focus lens, allowing you to adjust the size and focus of an image with the Remote Commander away from the projector.

Short focal lens equipped

The projection distance is very short, approximately 2.4 m (7.8 feet), when projecting an 80-inch image, which allows projection on a larger screen even in a limited space.

Side Shot

The projector supports the Side Shot feature (horizontal trapezoidal correction function), enabling projection from the side of the screen. Installation availability becomes wider.

Off & Go feature

The cooling fan built in the projector will work even after turning the power off and the power cord is disconnected. This enables you to move the projector to another location immediately after turning it off.

Versatile installation capability

Capable of floor, ceiling or tilt installation

In addition to the front floor or ceiling installation, you can install the projector by tilting it 90 degrees at the rear or 90 degrees in front.

Direct Power On/Off function

The AC power of the entire system can be directly turned on/off with a breaker or other switch without pressing the power key on the projector.

System expandability using a network

Connection to a wireless LAN allows you to obtain projector status information such as the lamp timer or to control the projector away from the installation location via a Web browser.


Security Functions

Security lock

This function makes it possible to project no picture on the screen unless the required password is entered when the projector is turned on.

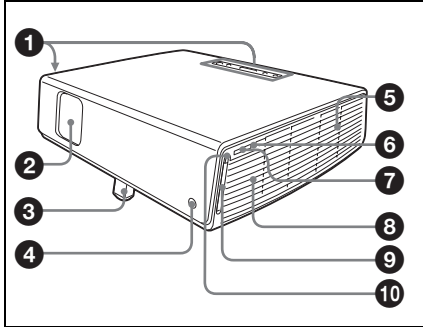
Panel key lock

This function locks all the operation keys on the control panel of the projector, allowing use of the keys on the Remote Commander. This prevents the projector from operating incorrectly.

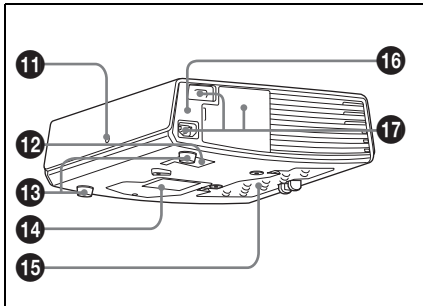
-
- Adobe Acrobat Reader is a trademark of Adobe Systems Incorporated.
 - Windows is a registered trademark of Microsoft Corporation in the United States and/or other countries.
 - VGA, SVGA, XGA and SXGA are registered trademarks of the International Business Machines Corporation, U.S.A.
 - Kensington is a registered trademark of Kensington Technology Group.
 - Macintosh is a registered trademark of Apple Computer, Inc.
 - VESA is a registered trademark of Video Electronics Standard Association.
 - Display Data Channel is a trademark of Video Electronics Standard Association.
 - **Memory Stick** and  are trademarks of Sony Corporation.
 - Air Shot is trademark of Sony Corporation.
 - Side Shot is trademark of Sony Corporation.

Location and Function of Controls

Top/Front/Left Side



Rear/Right Side/Bottom



1 Control panel

For details, see “Control Panel” on page 13.

2 Lens protector (lens cover)

The lens protector automatically opens when the power is turned on.

3 Powered tilt adjuster

4 Front remote control detector

5 Ventilation holes (exhaust)

6 Access lamp

Lights during access to the **Memory Stick**.

Do not remove the **Memory Stick** while the access lamp is lit.

7 Memory Stick slot

The **Memory Stick** can be inserted. Never insert an object other than the **Memory Stick**.

For details, see the attached “Operating Instructions for Memory Stick” stored in the CD-ROM.

8 Speaker

9 Wireless LAN card slot

The supplied wireless LAN card can be inserted. Never insert anything other than the supplied wireless LAN card.

Notes

Remove the wireless LAN card from the wireless LAN card slot when storing the projector in the carrying case.

For details, see *Operating Instruction for Air Shot* (stored in the CD-ROM).

10 Wireless LAN card eject button

11 Rear remote control detector

12 Ventilation holes (intake)

13 Adjuster (hind pad)

Turn the adjuster to the right or left for minor tilt adjustment of the projected picture.

14 Ventilation holes (intake)/Lamp cover

15 Ventilation holes (intake)/Air filter cover

Notes

- Do not place anything near the ventilation holes as this may cause internal heat build-up.
- Do not place your hand or objects near the ventilation holes as this may cause a heat build-up.
- To maintain optimal performance, clean the air filter every 1000 hours.

For details, see “Cleaning the Air Filter” on page 43.

16 Security lock

Connects to an optional security cable (Kensington’s).

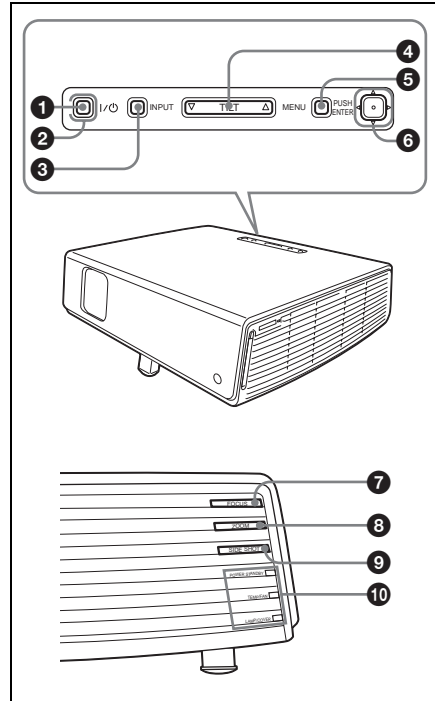
Web page address:

<http://www.kensington.com/>

17 Connector/Connector Panel

For details, see “Connector Panel” on page 14.

Control Panel



1 I / ⏻ (on/standby) key

Turns on the projector when the projector is in standby mode. The ON/STANDBY indicator around the I / ⏻ key lights in green when the power is turned on.

2 ON/STANDBY indicator (located around the I / ⏻ key)

Lights up or flashes under the following conditions:

- Lights in red when an AC power cord is plugged into a wall outlet. Once in standby mode, you can turn on the projector with the I / ⏻ key.
- Lights in green when the power is turned on.
- Flashes in green while the cooling fan is running after the power is turned off with the I / ⏻ key. The fan runs for about 60 seconds after the power is turned off.

For details on the *V*/*B* indicators, see page 25.

3 INPUT key

4 TILT adjustment key

For details, see “Projecting” on page 23.

5 MENU key

Displays the on-screen menu. Press again to clear the menu.

6 ENTER/Arrow($\Delta/\nabla/\leftarrow/\rightarrow$) keys

Enter the settings of items in the menu system.
Select the menu or make various adjustments.

7 FOCUS +/- keys

Adjusts the picture focus.

8 ZOOM +/- keys

Adjusts the picture size.

9 SIDE SHOT +/- key

Adjusts the horizontal trapezoidal distortion/H keystone correction of the picture.

For details, see “Side Shot” on page 39 and ““Side Shot” and “V Keystone Adjustments” on page 60.

10 Indicators

• POWER SAVING

Lights when the projector is in power saving mode.

• TEMP (Temperature)/FAN

Lights or flashes under the following conditions:

- Lights when the temperature inside the projector becomes unusually high.
- Flashes when the fan is broken.

For details on the TEMP/FAN indicator, see page 47.

• LAMP/COVER

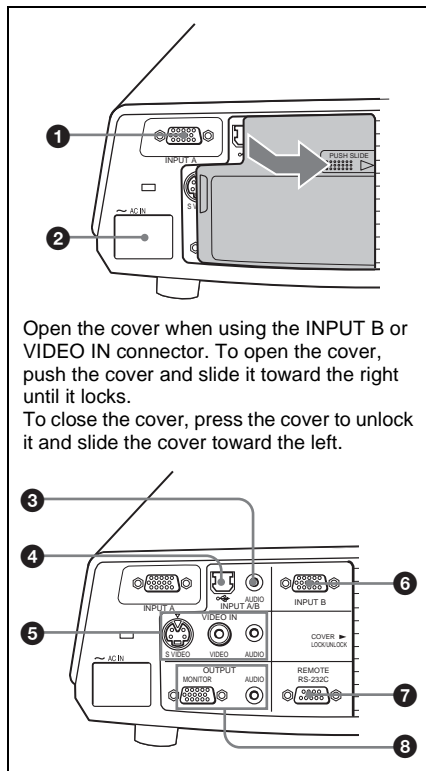
Lights or flashes under the following conditions:

- Lights when the lamp has reached the end of its life or reaches a high temperature.

- Flashes when the lamp cover or air filter cover is not secured firmly.

For details on the LAMP/COVER and TEMP/FAN indicator, see page 47.

Connector Panel



1 INPUT A connector (HD D-sub 15-pin, female)

Inputs a computer signal, video GBR signal, component signal, or DTV signal depending on equipment to be connected.

Connects to the output connector of equipment using the supplied cable or an optional cable.

For details, see “Connecting with a Computer” on page 20 and “Connecting with a VCR” on page 22.

2 AC IN socket

Connects the supplied AC power cord.

3 AUDIO (stereo minijack) connector (common INPUT A/B)

When listening to sound output from the computer, connect to the audio output of the computer.

4 USB connector (USB plug for upstream, 4-pin)

Connect to the USB connector of a computer. When you connect the projector to the computer, you can control the mouse function with the supplied Remote Commander.

5 VIDEO IN (Video input) connector

Connect to external video equipment such as a VCR.

- **S VIDEO (mini DIN 4-pin):** Connects to the S video output (Y/C video output) of video equipment.
- **VIDEO (phono type):** Connects to the composite video output of video equipment.
- **AUDIO (stereo minijack):** Connects to the audio output of the VCR.

6 INPUT B connector (HD D-sub 15-pin, female)

Connect to external equipment such as a computer.

Connects to the monitor output of a computer using an optional cable.

7 RS-232C connector (D-sub 9-pin, female)

Connects to a computer to operate the projector from the computer.

8 OUTPUT connector (HD D-sub 15-pin, female)

• **MONITOR:** Connect to the video input connector of the monitor. Outputs signals from the selected channel and computer signals only from among the signals from the INPUT A or INPUT B.

• **AUDIO (stereo minijack):** Connects to external active speakers. The

volume of the speakers can be controlled by the VOLUME+/- keys on the Remote Commander.

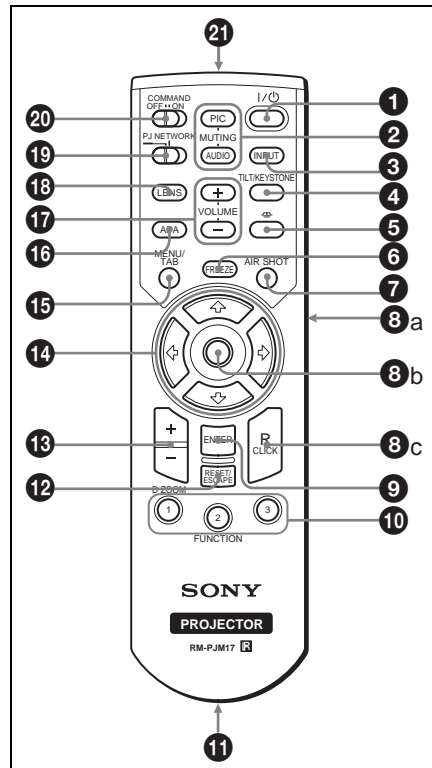
When INPUT A or B is selected, the sound input to the AUDIO connector which is common for INPUT A/B is output.

When the **Memory Stick** is selected in INPUT C, the sound saved in the **Memory Stick** is output. When "Air Shot" is selected, no sound is output.

When VIDEO or S VIDEO is selected, the sound input to the AUDIO input connector of VIDEO IN is output.

Remote Commander

The keys that have the same names as those on the control panel function identically.



1 I / ⏻ (on/standby) key

2 MUTING keys

Cut off the picture and sound.

- **PIC:** Cuts off the picture. Press again to restore the picture.
- **AUDIO:** Press to temporarily cut off the audio output from the speaker, and the output on the AUDIO jack in the OUTPUT section. Press again or press VOLUME + key to restore the sound.

3 INPUT key

4 TILT/KEYSTONE (Vertical/horizontal trapezoidal distortion correction) key

Adjusts the tilt of the projector, or the horizontal/vertical trapezoidal distortion of the image manually. Each time you press this key, the Tilt menu, the V Keystone menus and Side Shot menu are displayed. Use the arrow keys (↑/↓/←/→) for adjustment.

5  (Memory Stick) key

Displays the Memory Stick Home. When the input signal is other than **Memory Stick**, it switches to **Memory Stick**. When there are the files to be displayed in the Memory Stick Home, the slide show begins.

For details, see Operating Instructions for Memory Stick (stored in the CD-ROM).

6 FREEZE key

Freezes the picture projected. To cancel the frozen picture, press the key again.

7 AIR SHOT key

Displays the Air Shot Home. When the input signal is other than Air Shot, it switches to Air Shot. When using the Air Shot, the list box of the computers that can be connected appears.

For details on Air Shot, see Operating Instruction for Air Shot (stored in the CD-ROM).

8 Keys that emulate a mouse

These keys function as mouse buttons of a computer only when the projector is connected to the computer using the USB cable.

For details, see “Controlling the Computer Using the Supplied Remote Commander (When Using the USB Cable)” on page 28.

9 ENTER key

10 FUNCTION 1, 2, 3 keys

These keys do not work in this unit.

11 Strap holder

For attaching a strap.

12 RESET/ESCAPE key

Functions as a RESET key. Resets the value of an item to its factory preset value or returns the enlarged image to its original size. This key functions when the menu or a setting item is displayed on the screen.

13 D ZOOM (Digital Zoom) +/- key

Enlarges the image at a desired location on the screen.

14 Arrow keys (↑/↓/←/→)

15 MENU/TAB key

Functions as a MENU key.

16 APA (Auto Pixel Alignment) key

Automatically adjusts a picture to its clearest while a signal is input from a computer.

For details on APA, see “Smart APA” in the SET SETTING menu on page 36.

17 VOLUME +/- keys

18 LENS key

Each time you press this key, Focus adjustment menu and Zoom adjustment menu are displayed alternately.

19 PJ/NETWORK (Projector/Network) selector switch

Normally, set to “PJ”.

20 COMMAND ON/OFF switch

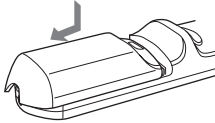
When this switch is set to OFF, no key on the Remote Commander function. This saves battery power.

21 Infrared transmitter

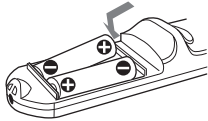
To install batteries

- 1 Push and slide to open the lid, then install the two size AA (R6) batteries (supplied) with the correct polarity.

While pressing the lid, slide it.



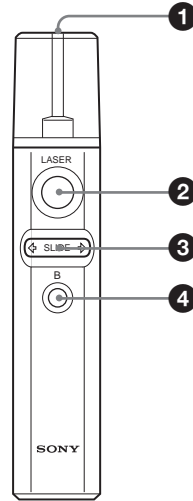
Be sure to install the battery from the ⊖ side.



- 2 Replace the lid.

Presentation Tool

When projecting the picture using the Air Shot, you can control the presentation file made by Microsoft PowerPoint.



- 1 **Laser transmitter**

- 2 **LASER key**

Emits a laser beam from the laser transmitter while you keep this key pressed.

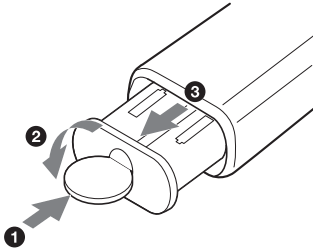
- 3 **SLIDE ⇄ key**

Used to change pages of the slide show in the forward/backward direction.

- 4 **B key**

This key corresponds to the “B” key of a keyboard. When you press this key during the slide show, a black screen is displayed. To cancel the black screen, press this key again.

To install batteries



Open the cover (2) with a coin (1) and remove the battery case (3). Install the two size AAA (R03) batteries with the correct polarity.

Notes on laser beam

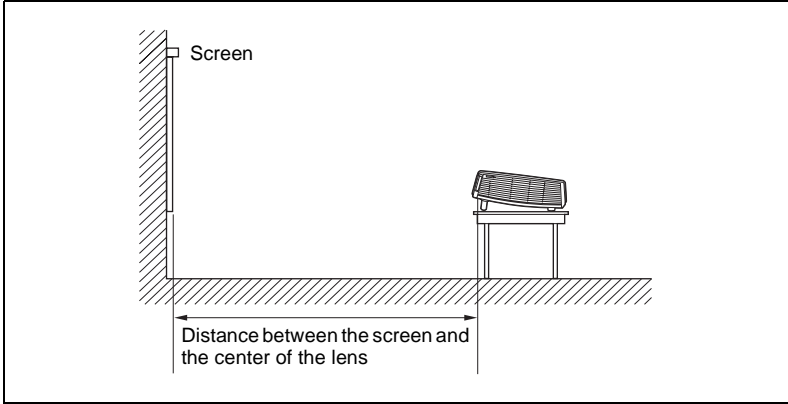
- Do not look into the laser transmitter.
- Do not aim the laser at people.

Notes on Remote Commander/ Presentation tool operation

- Make sure that nothing obstructs the infrared beam between the Remote Commander/Presentation tool and the remote control detector on the projector. Direct the Remote Commander/Presentation tool toward the front or rear remote control detector.
- The operation range is limited. The shorter the distance between the Remote Commander/Presentation tool and the projector is, the wider the angle within which the commander can control the projector becomes.

Installing the Projector

The distance between the lens and the screen varies depending on the size of the screen. Use the following table as a guide.



Setting Up and Projecting

Unit: m (feet)

| Screen size (inches) | 40 | 60 | 80 | 100 | 120 | 150 | 180 | 200 | 250 | 300 |
|-------------------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|
| Minimum Distance | 1.2 (3.9) | 1.8 (5.9) | 2.4 (7.9) | 3.0 (9.8) | 3.6 (11.8) | 4.5 (14.8) | 5.4 (17.7) | 6.0 (19.7) | 7.5 (24.6) | 9.0 (29.5) |
| Maximum Distance | 1.4 (4.6) | 2.0 (6.6) | 2.7 (8.9) | 3.4 (11.2) | 4.1 (13.5) | 5.2 (17.1) | 6.2 (20.3) | 6.9 (22.6) | 8.7 (28.5) | 10.4 (34.1) |

There may be a slight difference between the actual value and the design value shown in the table above.

For details on installation, see “Installation Diagram” on page 56.

Connecting the Projector

When you connect the projector, make sure to:

- Turn off all equipment before making any connections.
- Use the proper cables for each connection.
- Insert the cable plugs firmly; loose connections may increase noise and reduce performance of picture signals. When pulling out a cable, be sure to pull it out from the plug, not the cable itself

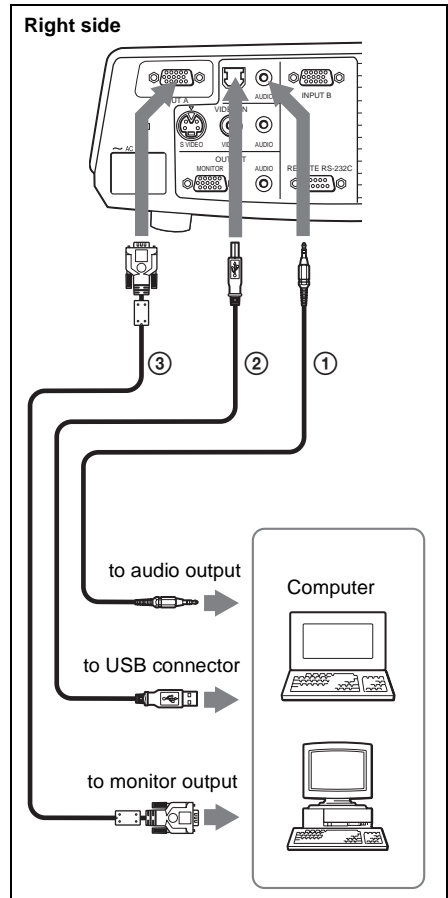
When connecting to a wireless LAN by using the Air Shot, see "Operating Instructions for Air Shot" contained in the CD-ROM.

To connect the projector, refer to the illustrations on the next and the following pages.

Connecting with a Computer

This section describes how to connect the projector to a computer. For more information, refer to the computer's instruction manual.

To connect a computer



- ① Stereo audio connecting cable (not supplied)
(Use a no-resistance cable.)
- ② USB cable (supplied)
(Connect the USB cable to use a wireless mouse.)
- ③ HD D-sub 15-pin cable (supplied)

Notes

- The projector accepts VGA, SVGA, XGA, SXGA and SXGA+ signals. However, we recommend that you set the output mode of

your computer to XGA mode for the external monitor.

- If you set your computer, such as a notebook type, to output the signal to both your computer's display and the external monitor, the picture of the external monitor may not appear properly. Set your computer to output the signal to only the external monitor.

For details, refer to the computer's operating instructions supplied with your computer.

On the USB function

When connecting the projector to a computer by using the USB cable for the first time, the computer recognizes the USB human interface device (wireless mouse function) automatically.

Recommended operating environment

When you use the USB function, connect the USB cable as illustrated above. The USB function can be used on a computer loaded with Windows 98, Windows 98 SE, Windows ME, Windows 2000 or Windows XP preinstall models.

Notes

- Your computer may not start correctly when connected to the projector via the USB cable. In this case, disconnect the USB cable, restart the computer, then connect the computer to the projector using the USB cable.
- This projector is not guaranteed for suspend, standby mode. When you use the projector in suspend, standby mode, disconnect the projector from the USB port on the computer.
- Operations are not guaranteed for all the recommended computer environments.
- A **Memory Stick** inserted into the Memory Stick slot on the projector cannot be accessed from the PROJECTOR STATION for Presentation.

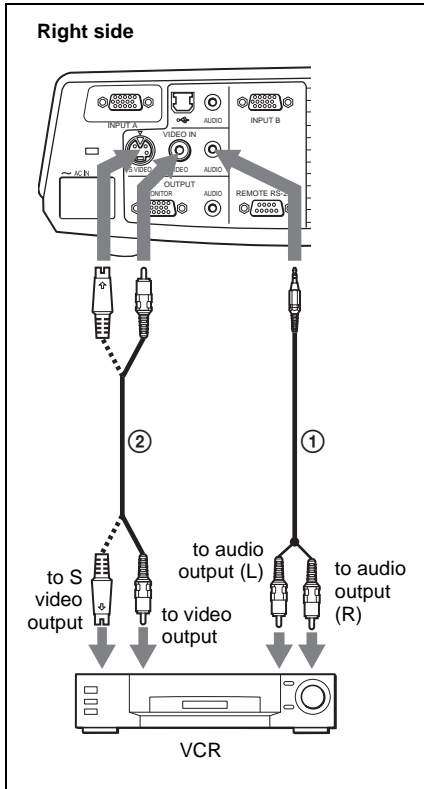
To connect a Macintosh computer

To connect a Macintosh computer equipped with video output connector of a type having two rows of pins, use a commercially available plug adaptor. When you connect a USB capable Macintosh computer using the USB cable to the projector, wireless mouse functions become available.

Connecting with a VCR

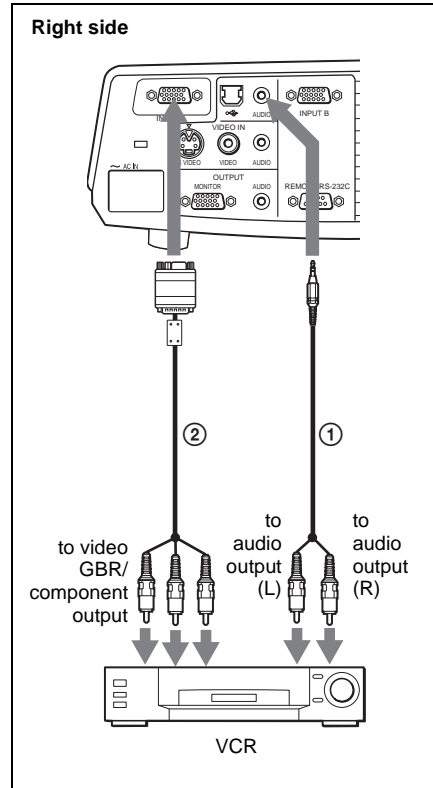
This section describes how to connect the projector to a VCR.
For more information, refer to the instruction manuals of the equipment you are connecting.

To connect to a video or S video output connector



- ① Stereo audio connecting cable (not supplied)
(Use a no-resistance cable.)
- ② Video cable (not supplied) or S-Video cable
(not supplied)

To connect to a video GBR/ Component output

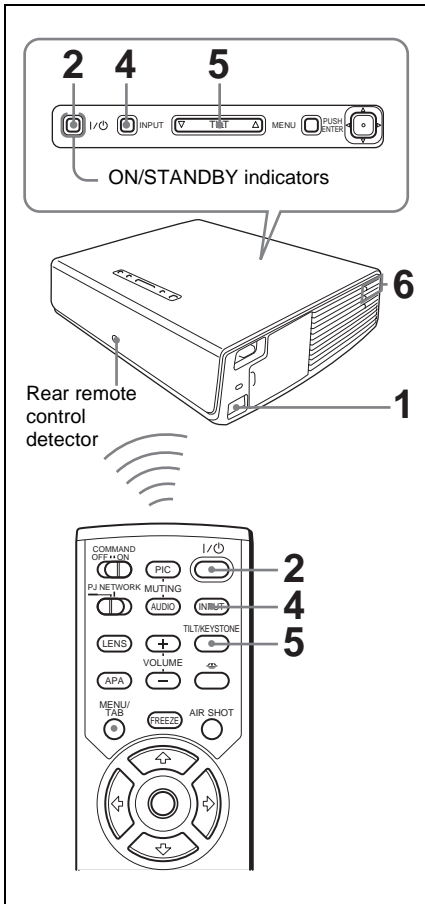


- ① Stereo audio connecting cable (not supplied)
(Use a no-resistance cable.)
- ② SMF-402 Signal Cable
(not supplied)
HD D-sub 15-pin (male) ↔ 3 × phono jack

Notes

- Set the aspect ratio using “Wide Mode” in the INPUT SETTING menu according to the input signal.
- When you connect the projector to a video GBR or component output connector, select “Video GBR” or “Component” with the “Input-A Signal Sel.” setting in the SET SETTING menu.
- Use the composite sync signal when you input the external sync signal from video GBR/component equipment.

Projecting



- 1 Plug the AC power cord into a wall outlet, then connect all equipment. The ON/STANDBY indicator lights in red and the projector goes into standby mode.
- 2 Press the I / ⏻ key. The ON/STANDBY indicator lights in green and the Intelligent Auto-setup starts. The lens protector opens, and the

powered tilt adjuster rises and stops at the previously adjusted position.

Note

When the projector is turned on, the Startup screen is projected. For details on the Startup screen, see the attached “Operating Instructions for **Memory Stick**” stored in the CD-ROM.


- 3 Turn on the equipment connected to the projector.
- 4 Press the INPUT key to select the input source. Each time you press the key, the input signal switches as follows:

INPUT-A → INPUT-B → INPUT-C → VIDEO → S-VIDEO
 ↑

| To input from | Press INPUT to display |
|--|------------------------|
| Computer connected to the INPUT A connector | INPUT-A |
| Computer connected to the INPUT B connector | INPUT-B |
| Air Shot/Memory Stick (when you use the Air Shot/Memory Stick) | INPUT-C |
| Video equipment connected to the VIDEO input connector | VIDEO |
| Video equipment connected to the S VIDEO input connector | S-VIDEO |

Smart APA (Auto Pixel Alignment) adjusts the picture of the connected equipment so that it is projected clearly.

Notes



- For INPUT C, input of the “Air Shot” or “Memory Stick” can be switched by selecting with the INPUT C selection menu, or pressing the  key or the AIR SHOT key on the Remote Commander. The Air Shot Home or the Memory Stick Home is displayed on the screen.

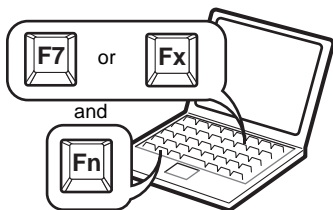
- If “Auto Input Search” is set to “On,” the projector searches for the signals from the connected equipment and displays the input channel where the input signals are found.

For details, see “Auto Input Search” on page 37.

- The Smart APA is effective for the input signal from a computer only.





5 Switch the equipment to be connected to output to the projector.

Depending on the type of your computer, for example a notebook, or an all-in-one LCD type, you may have to switch the computer to output to the projector by pressing certain keys (e.g., LCD/VGA, , , etc.), or by changing your computer's settings.





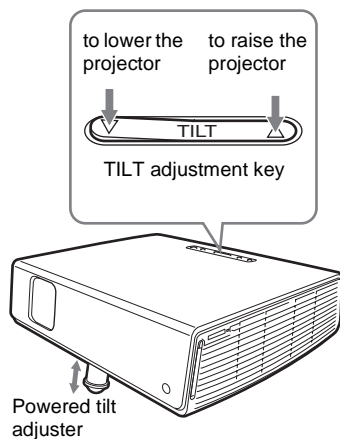
6 Adjust the upper or lower position of the picture.

To adjust using the Remote Commander





Press the TILT/KEystone key on the Remote Commander to display the Tilt menu and adjust the tilt using the / keys.

To adjust using the control panel

Press  or  of the TILT key to adjust the tilt of the projector.



Notes

- When you adjust the powered tilt adjuster with the TILT key, the V keystone adjustment is performed at the same time. If you do not want to perform the automatic keystone adjustment, set the V Keystone menu to “Manual.” (See page 39.)
- If you set the “V Keystone” adjustment to “Auto,” the “V Keystone” correction is automatically adjusted. However, it may not be perfectly adjusted depending on the room temperature or the screen angle. In this case, adjust it manually.
- Press the TILT/KEystone key on the Remote Commander until “V Keystone” appears on the screen, and adjust the value with the  key. The corrected value is effective until the power turn off.
- Be careful not to let the projector down on your fingers.
- Do not push hard on the top of the projector with the powered tilt adjuster out.
It may be occurred malfunction.

7 Adjust the horizontal trapezoidal distortion () of the picture with the “Side Shot.”

To adjust using the Remote Commander

Press the TILT/KEystone key on the Remote Commander to display the Side Shot menu (horizontal trapezoidal distortion/H keystone correction) and adjust the tilt using the **↑/↓/←/→** keys.

To adjust using the control panel

Press the SIDE SHOT +/- key on the control panel to adjust the distortion. For details, see ““Side Shot” and “V Keystone” Adjustments” on page 60.

- 8** Adjust the size of the picture and the focus.

To adjust using the Remote Commander

Select the item to be adjusted by pressing the LENS key, then adjust with the **↑/↓/←/→** key. Each time you press the key, the menu changes to LENS FOCUS and LENS ZOOM in order.

To adjust using the control panel

Press the ZOOM +/- keys on the projector to adjust the size of the picture and press the FOCUS +/- keys to adjust the focus.

light up again the ON/STANDBY indicator with the **I / ⏻** key.

- 3** Unplug the AC power cord from the wall outlet after the fan stops running and the ON/STANDBY indicator lights in red.

When you cannot confirm the on-screen message

When you cannot confirm the on-screen message in a certain condition, you can turn off the power by holding the **I / ⏻** key for about two seconds instead of steps **1** and **2**.

Note

- The internal circuitry of the Off & Go and Direct Power On/Off functions may cause the fan to continue to operate for a short time even after the **I / ⏻** key is pressed to turn off the power and the ON/STANDBY indicator changes to red.

Turning Off the Power

- 1** Press the **I / ⏻** key.
“POWER OFF? Please press **I / ⏻** key again.” appears to confirm that you want to turn off the power.

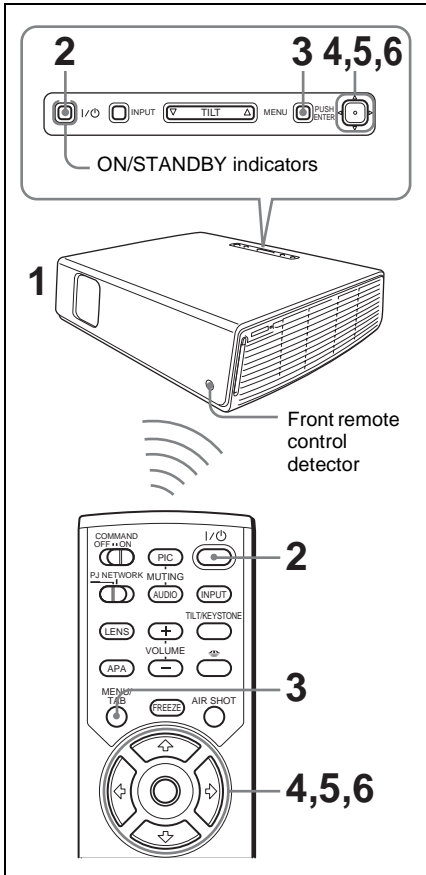
Notes

A message disappears if you press any key except the **I / ⏻** key, or if you do not press any key for five seconds.

- 2** Press the **I / ⏻** key again.
The lens protector close and the powered tilt adjuster is put away in the projector. The ON/STANDBY indicator flashes in green and the fan continues to run for about 60 seconds to reduce the internal heat. Also, the ON/STANDBY indicator flashes quickly for the first 45 seconds. During this time, you will not be able to

Selecting the Menu Language

You can select one of thirteen languages for displaying the menu and other on-screen displays. The factory setting is English. To change the menu language, proceed as follows:



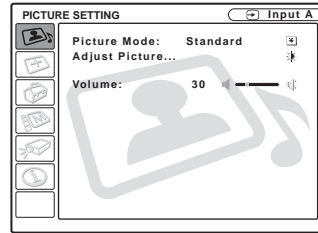
1 Plug the AC power cord into a wall outlet.

2 Press the I / ⏻ key to turn on the projector.

3 Press the MENU key.

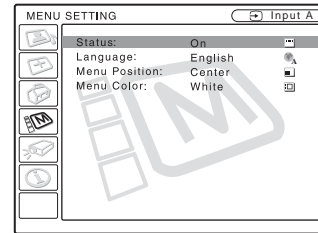
The menu appears.

The menu presently selected is shown as a yellow button.

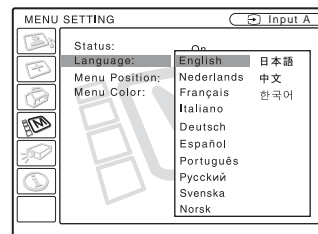


4 Press the ↑ or ↓ key to select the MENU SETTING menu, then press the → or ENTER key.

The selected menu appears.



5 Press the ↑ or ↓ key to select "Language," then press the → or ENTER key.



6 Press the ↑, ↓, ← or → key to select a language, then press the ENTER key.

The menu changes to the selected language.

To clear the menu

Press the MENU key.

The menu disappears automatically if a key is not pressed for one minute.

Security Lock

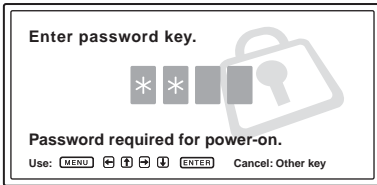
The projector is equipped with a security lock function. When you turn the power of the projector on, you are required to input the previously set password. If you do not input the correct password, you will not be able to project the picture.

Note

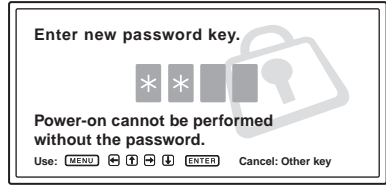
You will not be able to use the projector if you forget your password and the password administrator is not available. Be please aware that using the security lock can prevent valid usage in such cases. It is recommended that you make a note of the selected password.

To use the security lock

- 1 Press the MENU key and then, in the INSTALL SETTING menu, turn on the “Security Lock” setting.
- 2 Enter the password.
Use the MENU, $\uparrow/\downarrow/\leftarrow/\rightarrow$, and ENTER keys to enter the four-digit password. (The default initial password setting is “ENTER, ENTER, ENTER, ENTER”. After this is entered you can put in your own password. Therefore when you use this function for the first time, please input “ENTER” four times.)



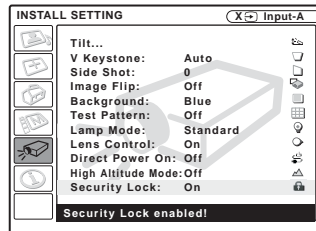
Next, the screen for entering the new password is displayed. (Enter the password at this screen even if you want to keep the current password.)



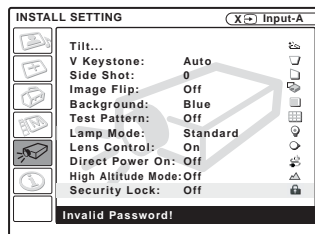
- 3 Enter the password again to confirm.



When the following message is displayed, the setting for security lock is completed.



If “Invalid Password!” is displayed on the menu screen, perform again from step 1.



- Turn the main power off and disconnect the AC power cord.
The security lock is set to on, then it becomes effective. The screen for entering the password is displayed when the power is turned on the next time.

Security certification

When the screen for entering the password is displayed, enter the password that was set. If you fail to enter the correct password after three tries, the projector cannot be used. In this case, press the **I** / **⏻** key to turn off the power.

To cancel the security lock

- Press the **MENU** key, then turn off the “Security Lock” setting in the **INSTALL SETTING** menu.
- Enter the password.
Enter the password that was set.

Note

If you call the customer service center because you have forgotten the password, you will need to be able to verify the projector’s serial number and your identity. (This process may differ in other countries.) Once your identity has been confirmed, we will provide you with the password.

Other Functions

Switching from the Intelligent Auto-setup Function to Manual Adjustments

You can switch the following functions of the Intelligent Auto-setup to manual adjustments using the menu.

- V Keystone correction (correction of trapezoidal distortion)**
Set “V Keystone” in the **INSTALL SETTING** menu to “Manual.”

- Smart APA (Auto Pixel Alignment)**
Set “Smart APA” in the **SET SETTING** menu to “Off.”
- Auto Input Search**
Set “Auto Input Search” in the **SET SETTING** menu to “Off.”

For details on the menu operations, see “Using the **MENU**” on page 31.

Controlling the Computer Using the Supplied Remote Commander (When Using the USB Cable)

When you connect a computer to the projector by using the USB cable, you can control the mouse of the computer using the Remote Commander.

The **R/L CLICK** keys and joystick function as follows.

| Key and joystick | Function |
|------------------------|---|
| R CLICK (front) | Right button |
| L CLICK (rear) | Left button |
| Joystick | Corresponds with the movements of the mouse |

For details on USB connection, see “To connect a computer” on page 20.

Note

Make sure that nothing obstructs the infrared beam between the Remote Commander and the remote control detector on the projector.

Controlling the Computer Using the Supplied Presentation Tool (When Using the Air Shot)

When you are using the Air Shot to project the picture from a computer, you can perform some operations for a slide show using the supplied presentation tool. The following keys on the presentation tool are usable.

| Key | Function |
|-----------|--|
| LASER | Emits a laser beam.* |
| ⇄ SLIDE ⇄ | Changes the slides in the forward/backward direction. |
| B | Displays/cancels a black screen during the slide show. |

* Also available when not using the Air Shot.

Note

If there is any obstruction between the presentation tool and the remote control detector on the projector, the presentation tool may not function properly.

Off & Go Function

If you are leaving the conference room immediately, turn the projector off, and then, after the lens protector closes and the powered tilt adjuster is put away in the projector, you can unplug the AC power cord. After the AC power cord is unplugged, the fan runs automatically.

Notes

- When unplugging the AC power cord, ensure that the lens protector closes and the powered tilt adjuster is put away in the projector. Moving the projector with the powered tilt adjuster raised may damage the adjuster.
- Turn off the projector according to the procedure in “Turning off the power”, then cool it down when storing the projector in the carrying case.

Direct Power On/Off Function

If you will be using a circuit breaker to turn the power for the entire system on and off, set the direct power on function to “On.” When you turn off the power, you can also just unplug the power cord without pressing the I / ⏻ key. The internal circuitry will cause the fan to automatically operate for a

certain time even after the power cord is removed.

Note

However, if the unit has been on for less than 15 minutes, the fan might not begin to turn as a result of inadequate charging. In that case, follow the procedure for turning off the power as described in “Turning Off the Power” on page 25.

Effective Tools for Your Presentation

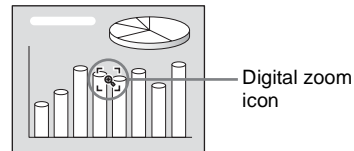
To enlarge the image (Digital Zoom function)

You can select a point in the image to enlarge. This function works when a signal from a computer is input, or when a still picture (except a movie picture) stored in a **Memory Stick** is projected.

This function does not work when a video signal is input.

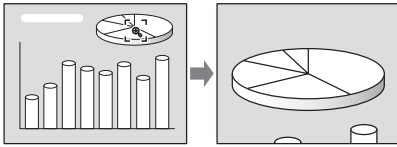
- 1 Project a normal image, and press the D ZOOM + key on the Remote Commander.

The digital zoom icon appears in the center of the image.

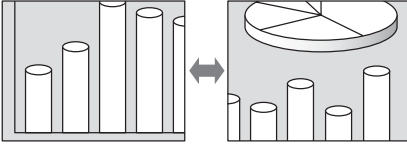


- 2 Move the icon to the point on the image you want to enlarge. Use the arrow key (↑/↓/←/→) to move the icon.

- 3 Press the D ZOOM + key again. The image where the icon is located is enlarged. The enlargement ratio is displayed on the screen for a few seconds. By pressing the + key repeatedly, the image size increases (ratio of enlargement: max. 4 times.)



Use the arrow key (↑/↓/←/→) to scroll the enlarged image.



To return the image back to its original size

Press the D ZOOM – key.

Just pressing the RESET key returns the image back to its original size immediately.

To freeze the image projected (Freeze function)

Press the FREEZE key. “Freeze” appears when the key is pressed. This function works when a signal from a computer is input or when a still picture stored in a **Memory Stick** is projected.

To restore the original screen, press the FREEZE key again.

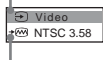
Using the MENU

The projector is equipped with an on-screen menu for making various adjustments and settings. The setting items are displayed in a pop-up menu or in a sub menu. If you select an item name followed by dots (...), a sub menu with setting items appear. You can change the tone of the menu display and the menu language displayed in the on-screen menu.

To change the menu language, see “Selecting the Menu Language” on page 26.

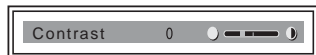
Display items

Input signal indicator



Input signal setting indicator

Picture adjustment menu



Input signal indicator

Shows the selected input channel. x(→) is displayed when no signal is input. You can hide this indicator using “Status” in the MENU SETTING menu.

Input signal setting indicator

For Input A: Shows “Computer,” “Component” or “Video GBR.”

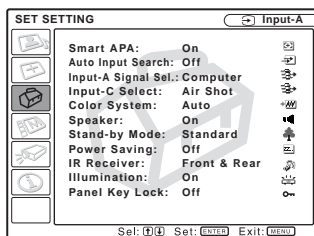
For Input C: Shows “Air Shot” or “Memory Stick”

For Video/S Video input: Shows “Auto” or the “Color System” setting in the SET SETTING menu.

1 Press the MENU key.

The menu appears.

The menu presently selected is shown as a yellow button.



2 Use the ↑ or ↓ key to select a menu, then press the → or ENTER key.

The selected menu appears.

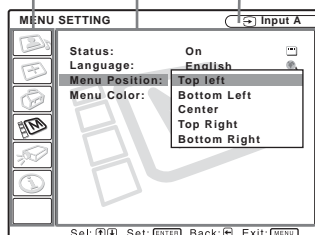
3 Select an item.

Use the ↑ or ↓ key to select the item, then press the → or ENTER key.

The setting items are displayed in a pop-up menu or in a sub menu.

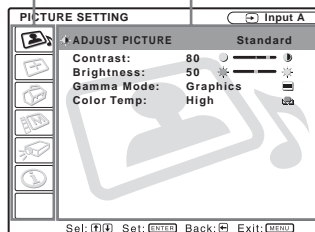
Pop-up menu

Menu Setting items Selected input signal



Sub menu

Menu Setting items



4 Make the setting or adjustment on an item.

• **When changing the adjustment level:**

To increase the number, press the **↑** or **➡** key.

To decrease the number, press the **↓** or **←** key.

Press the ENTER key to restore the previous screen.

• **When changing the setting:**

Press the **↑** or **↓** key to change the setting.

Press the ENTER or **←** key to restore the previous screen.

When setting the Menu Language, see “Selecting the Menu Language” on page 26.

To clear the menu

Press the MENU key.

The menu disappears automatically if a key is not pressed for one minute.

To reset items that have been adjusted

Press the RESET key on the Remote Commander.

“Complete!” appears on the screen and **the settings appearing on the screen are reset to their factory preset values.**

Items that can be reset are:

- “Contrast,” “Brightness,” “Color,” “Hue” and “Sharpness” in the Adjust Picture... menu.
- “Dot Phase,” “H Size,” and “Shift” in the Adjust Signal... menu

About the memory of the settings

The settings are automatically stored in the projector memory.

If no signal is input

If there is no input signal, “Cannot adjust this item.” appears on the screen.

About the menu display

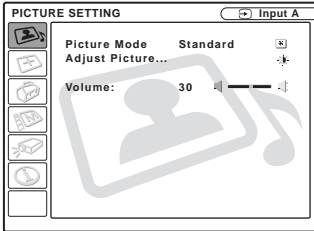
You can set the display position of the menu, intensity of the background picture and tone of the menu items as you like.

For details, see “The MENU SETTING Menu” on page 38.

The PICTURE SETTING Menu

The PICTURE SETTING menu is used for adjusting the picture or volume. Items that cannot be adjusted depending on the input signal are not displayed in the menu.

For details on the unadjustable items, see page 52.



Menu Items

Picture Mode

Selects the picture mode.

Dynamic: Emphasizes the contrast to produce a “dynamic” picture.

Standard: Normally select this setting. If the picture has roughness with the “Dynamic” setting, this setting reduces the roughness.

Volume

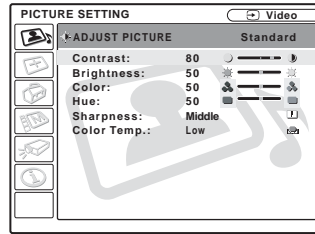
Adjusts the volume.

Adjust Picture...

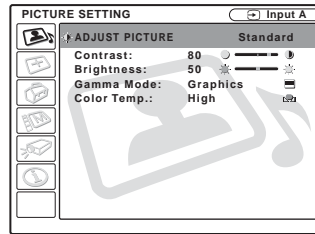
The unit can store the setting values of the following sub menu items for each “Dynamic” or “Standard” picture mode separately.

Adjust Picture...Menu Items

When the video signal is input



When the computer signal is input



Contrast

Adjusts the picture contrast. The higher the setting, the greater the contrast between a dark portion and a bright portion of the picture. The lower the setting, the lower the contrast.

Brightness

Adjusts the picture brightness. The higher the setting, the brighter the picture. The lower the setting, the darker the picture.

Color

Adjusts color intensity. The higher the setting, the greater the intensity. The lower the setting, the lower the intensity.

Hue

Adjusts color tones. The higher the setting, the picture becomes greenish. The lower the setting, the picture becomes purplish.

Sharpness

Selects the picture sharpness from among “High,” “Middle” and “Low.” The “High” setting makes the picture sharp; the “Low” setting makes it soft.

Gamma Mode

Selects a gamma correction curve.

Graphics: Improves the reproduction of halftones. Photos can be reproduced in natural tones.

Text: Contrasts black and white. Suitable for images that contain lots of text.

Color Temp.

Adjusts the color temperature.

High: Makes the white color bluish.

Low: Makes the white color reddish.

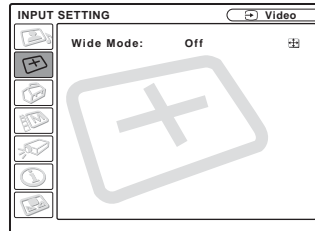
The INPUT SETTING Menu

The INPUT SETTING menu is used to adjust the input signal.

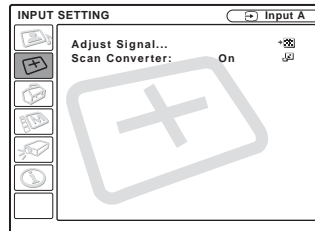
Items that cannot be adjusted depending on the input signal are not displayed in the menu.

For details on the unadjustable items, see page 52.

When the video signal is input



When the computer signal is input



MENU Items

Wide Mode

Sets the aspect ratio of the picture. When inputting 16:9 (squeezed) signal from equipment such as a DVD player, set to “On”.

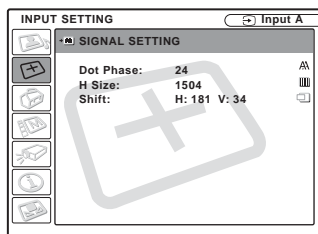
Off: When the picture with ratio 4:3 is input.

On: When the picture with ratio 16:9 (squeezed) is input.

Note

Note that if the projector is used for profit or for public viewing, modifying the original picture by switching to the wide mode may constitute an infringement of the rights of authors or producers, which are legally protected.

Adjust Signal... Menu Items (Only when the computer signal is input)



Dot Phase

Adjusts the dot phase of the LCD panel and the signal output from a computer.

Adjust the picture further for finer picture after the picture is adjusted by pressing the APA key.

Adjust the picture to where it looks clearest.

H Size

Adjusts the horizontal size of picture output from a connector. The higher the setting, the larger the horizontal size of the picture. The lower the setting, the smaller the horizontal size of the picture. Adjust the setting according to the dots of the input signal.

For details on the suitable value for the preset signals, see page 53.

Shift

Adjusts the position of the picture. H adjusts the horizontal position of the picture. V adjusts the vertical position of the picture.

As the setting for H increases, the picture moves to the right, and as the setting decreases, the picture moves to the left.

As the setting for V increases, the picture moves up, and as the setting decreases, the picture moves down. Use the ← or the →

key to adjust the horizontal position and the ↑ and ↓ key for the vertical position.

Scan Converter

Converts the signal to display the picture according to the screen size.

On: Displays the picture according to the screen size. The picture will lose some clarity.

Off: Displays the picture while matching one pixel of input picture element to that of the LCD. The picture will be clear but the picture size will be smaller.

Note

When XGA, SXGA or SXGA+ signal is input, this item will not be displayed.

About the Preset Memory No.

This projector has 45 types of preset data for input signals (the preset memory). When a preset signal is input, the projector automatically detects the signal type and recalls the data for the signal from the preset memory to adjust it to an optimum picture. The memory number and signal type of that signal are displayed in the INFORMATION menu (See page 40). You can also adjust the preset data through the INPUT SETTING menu.

This projector has 20 types of user memories for INPUT-A into which you can save the setting of the adjusted data for an unpreset input signal.

When an unpreset signal is input for the first time, a memory number is displayed as 0. When you adjust the data of the signal in the INPUT SETTING menu, it will be registered to the projector. If more than 20 user memories are registered, the newest memory always overwrites the oldest one.

See the chart on page 53 to find if the signal is registered to the preset memory.

Since the data is recalled from the preset memory about the following signals, you can use these preset data by adjusting “H Size.” Make fine adjustment by adjusting “Shift.”

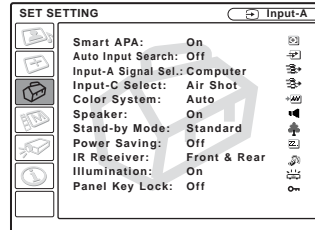
| Signal | Memory No. | SIZE |
|------------------------|------------|------|
| Super Mac-2 | 23 | 1312 |
| SGI-1 | 23 | 1320 |
| Macintosh 19" | 25 | 1328 |
| Macintosh 21" | 27 | 1456 |
| Sony News | 36 | 1708 |
| PC-9821 1280 × 1024 | 36 | 1600 |
| WS Sunmicro | 37 | 1664 |

Note

When the aspect ratio of input signal is other than 4:3, a part of the screen is displayed in black.

The SET SETTING Menu

The SET SETTING menu is used for changing the settings of the projector.



Menu Items

Smart APA

Activates or deactivates the Smart APA ¹⁾.

On: Normally select this setting. When a signal is input from a computer, the APA functions automatically so that the picture can be seen clearly. Once the specified input signal has been adjusted by the “Smart APA,” it will not be readjusted even when the cable is disconnected and connected again or the input channel is changed. You can adjust the picture by pressing APA key on the Remote Commander even if the “Smart APA” set to “On.”

Off: The APA functions when you press the APA key on the Remote Commander.

Notes

- Press the APA key when the full image is displayed on the screen. If the projected image includes much black portion around it, the APA function will not work properly and some parts of the image may not be displayed on the screen.
- You can cancel the adjustment by pressing the APA key again while “Adjusting” appears on the screen.
- The picture may not be adjusted properly depending on the kinds of input signals.

- Adjust the items “Dot Phase,” “H Size” and “Shift” in the INPUT SETTING menu when you adjust the picture manually.

- 1) The APA (Auto Pixel Alignment) automatically adjusts “Dot Phase,” “H Size” and “Shift” in the INPUT SETTING menu for the input signal from a computer.

Auto Input Search

Normally set to “Off.”

When set to “On,” the projector detects input signals in the following order: Input-A/ Input-B/Input-C/Video/S-Video. It indicates the input channel when the power is turned on or the INPUT key is pressed.

Input-A Signal Sel.

Selects the computer, component or video GBR signal input from the INPUT A connector.

Note

If the setting is not correct, the color of the picture becomes strange or “Please check Input-A Signal Sel.” appears on the screen and the picture is not displayed.

Input-C Select

Select “Air Shot” or “Memory Stick” as the input source that you want to project in the INPUT C.

Color System

Selects the color system of the input signal. If you select “Auto,” the projector detects the color system of the input signal automatically. If the picture is distorted or colorless, select the color system according to the input signal.

When the color system of the input signal is PAL60, select “PAL.” If “Auto” is selected, the color system cannot be detected.

Speaker

Set to “Off” to cut off the sound of the internal speakers. When set to “Off,” “Speaker: Off” appears on the screen when you turn on the power.

Stand-by Mode

You can lower the power consumption in standby mode.

Standard: Normally, select this position when you use the Air Shot even in standby mode.

Low: Select this position when you do not use the Air Shot, and want to lower the power consumption in standby mode.

Power Saving

When set to “On,” the projector goes into power saving mode if no signal is input for 10 minutes. Although the lamp goes out, the cooling fan keeps running. The power saving mode is canceled when a signal is input or any key is pressed. In power saving mode, any key does not function for the first 60 seconds after the lamp goes out.

IR Receiver

Selects the remote control detectors (IR receiver) on the front and rear of the projector.

Front&Rear: Activates both the front and rear detectors.

Front: Activates the front detector only.

Rear: Activates the rear detector only.

Illumination

Selects whether the SONY logo on the top panel of the projector lights when the projector is on. Normally, this setting is “On”. If you want complete darkness or if the illuminated logo is a distraction, change this setting to “Off”.

Panel Key Lock

Locks all the control panel keys on the top and side panels of the projector so that the projector can be operated only with the Remote Commander.

To lock the control panel keys, set to “On.”

When it is set to “On,” keeping the I/⏻ key on the control panel pressed for 10 seconds turns the projector on when it is in standby mode, and turns the projector to standby mode when the power is on. If you keep

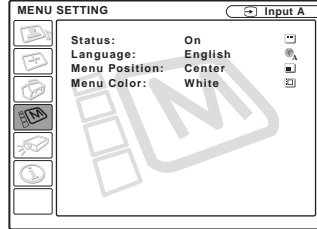
pressing the MENU key for about 10 seconds when the power is on, the lock will be released and “Panel Key Lock” is automatically set to “Off.”

Note

The function can be controlled with the REMOTE RS-232C connector.

The MENU SETTING Menu

The MENU SETTING menu is used for changing the menu displays.



Menu Items

Status (on-screen display)

Sets up the on-screen display.

On: Shows all of the on-screen displays.

Off: Turns off the on-screen displays except for the menus, a message when turning off the power, and warning messages.

Language

Selects the language used in the menu and on-screen displays. Available languages are: English, Nederlands, Français, Italiano, Deutsch, Español, Português, Русский, Svenska, Norsk, 日本語, 中文 and 한국어.

Menu Position

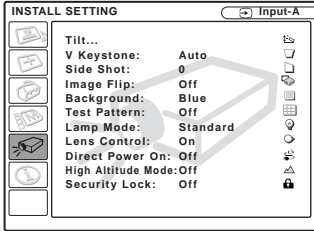
Selects the display position of the menu from “Top Left,” “Bottom Left,” “Center,” “Top Right” and “Bottom Right”.

Menu Color

Selects the tone of the menu display from “Black” or “White”.

The INSTALL SETTING Menu

The INSTALL SETTING menu is used for changing the settings of the projector.



Menu Items

Tilt...

Adjusts the position (height) of the projected picture. Pressing the Δ on the TILT adjustment key or \uparrow/\rightarrow key on the Remote Commander, the more the projector tilts and the higher the position of the picture. Pressing the ∇ on the TILT adjustment key or \downarrow/\leftarrow key on the Remote Commander, the less the projector tilts and the lower the position of the picture.

V Keystone

Corrects the trapezoidal distortion caused by the projection angle. Select "Auto" for automatic correction, or "Manual" for manual correction using the \leftarrow or \rightarrow key.

When the bottom of the trapezoid is longer than the top \square : Sets a lower value.

When the top of the trapezoid is longer than the bottom \square : Sets a higher value.

Note

The auto V Keystone adjustment may not correct the trapezoidal distortion perfectly, depending on the room temperature or the screen angle.

Side Shot

Corrects the horizontal trapezoidal distortion of the picture using the \leftarrow or \rightarrow key on the Remote Commander.

When the right side is longer than the left side \square

Set to a higher value (+ direction).

When the left side is longer than the right side \square

Set to a lower value (- direction).

Set the adjustment level to "0" if you want to adjust the picture more widely using "V Keystone" only.

Note

Even when projecting using "Side Shot", the four sides of a picture may sometimes not be parallel to the respective sides of a screen frame.

Image Flip

Flips the image on the screen horizontally and/or vertically.

Off: The image does not flip.

HV: Flips the image horizontally and vertically.

H: Flips the image horizontally.

V: Flips the image vertically.

Background

Select the background color of the screen when no signal is input to the projector. Select "Black" or "Blue". Normally, set to "Blue."

Test Pattern

The factory setting is "Off." When set to "On," a test pattern is displayed on the screen during the "Lens Zoom" adjustment, "Lens Focus," "Side Shot" or "V Keystone." If you do not want to display a test pattern, set to "Off."

Lamp Mode

Sets the lamp brightness in the projection.

High: Illuminates the projected image brightly.

Standard: Reduces fan noise and power consumption. The brightness of the projected image will be lower compared with the “High” setting.

Direct Power On

Set to “On” if you are using a circuit breaker to turn the power on/off the entire system. You can turn off the power just by unplugging the power cord without pressing the I/O key.

Lens Control

When set to “Off,” the LENS (FOCUS, ZOOM) key on the Remote Commander, and the FOCUS and ZOOM keys on the projector do not function.

High Altitude Mode

The factory setting is “Off.”

Set to “On” when the projector is used at an altitude of 1,500 m or higher.

Security Lock

Turns on the projector’s security lock function.

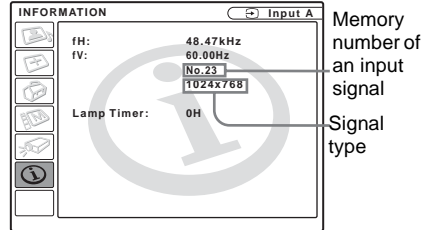
Off: Turns off the security lock function.

On: Turns on the security lock function, which locks the projector once a password has been set.

For details, see “Security Lock” on page 27.

The INFORMATION Menu

The INFORMATION menu displays the horizontal and vertical frequencies of the input signal and the used time of the lamp.



Menu Items

fh

Displays the horizontal frequency of the input signal.

The displayed value is approximate.

fv

Displays the vertical frequency of the input signal.

The displayed value is approximate.

Lamp Timer

Indicates how long the lamp has been turned on.

Note

These only display on the screen. You cannot alter the display.

Maintenance

Replacing the Lamp

Replace the lamp with a new one in the following case.

- When the lamp has burnt out or dims
 - “Please replace the LAMP.” appears on the screen
 - The LAMP/COVER indicator lights up
- The lamp life varies depending on conditions of use.

Use LMP-C190 Projector Lamp as the replacement lamp.

Use of any other lamps than the LMP-C190 may cause damage of the projector.

Caution

The lamp becomes a high temperature after turning off the projector with the I / ⏻ key. **If you touch the lamp, you may scald your finger. When you replace the lamp, wait for at least an hour for the lamp to cool.**

Notes

- **If the lamp breaks, consult with qualified Sony personnel.**
- Pull out the lamp by holding the handle. If you touch the lamp, you may be burned or injured.
- When removing the lamp, make sure it remains horizontal, then pull straight up. Do not tilt the lamp. If you pull out the lamp while tilted and if the lamp breaks, the pieces may scatter, causing injury.

- 1** Turn off the projector, and disconnect the AC power cord from the AC outlet.

Note

When replacing the lamp after using the projector, wait for at least an hour for the lamp to cool.

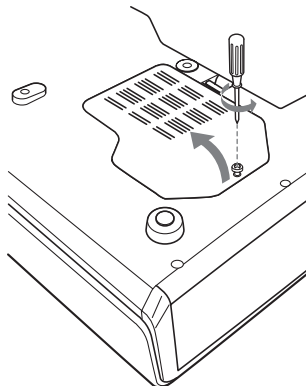
- 2** Place a protective sheet (cloth) beneath the projector. Turn the

projector over so you can see its underside.

Note

Be sure that the projector is stable after turning it over.

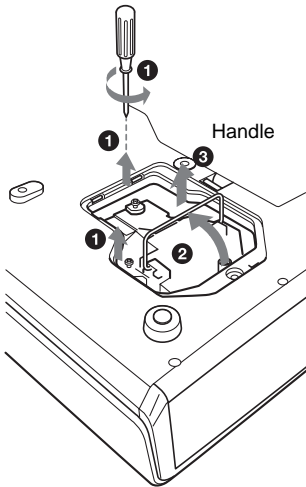
- 3** Open the lamp cover by loosening a screw with the Phillips screwdriver.



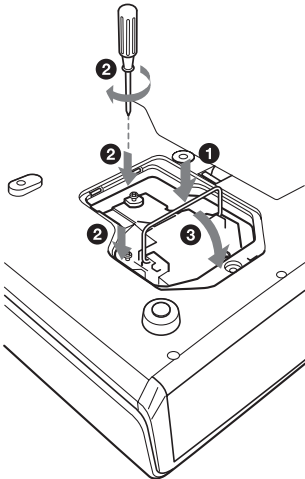
Note

For safety sake, do not loosen any other screws.

- 4** Loosen the two screws on the lamp unit with the Phillips screwdriver (1). Fold out the handle (2), then pull out the lamp unit by the handle (3).



- 5** Insert the new lamp all the way in until it is securely in place (1). Tighten the two screws (2). Hold down the handle to replace (3).



Notes

- Be careful not to touch the glass surface of the lamp.

- The power will not turn on if the lamp is not secured properly.

- 6** Close the lamp cover and tighten a screw.
- 7** Turn the projector back over.
- 8** Connect the power cord.
The ON/STANDBY indicator around the I/⏻ key lights in red.
- 9** Press the following keys on the Remote Commander in the following order for less than five seconds each: RESET, ←, →, ENTER.

Note

Do not put your hands into the lamp replacement spot, or not fall any liquid or object into it **to avoid electrical shock or fire.**

Disposal of the used lamp

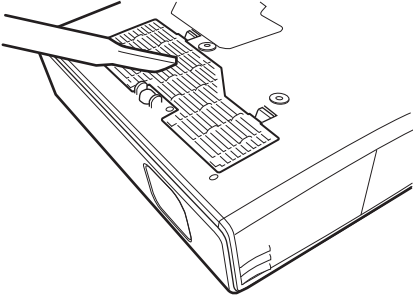
For the customers in the USA

This product contains mercury. Disposal of this product may be regulated if sold in the United States. For disposal or recycling information, please contact your local authorities or Electronics Industries Alliance (www.eiae.org <http://www.eiae.org>).

Cleaning the Air Filter

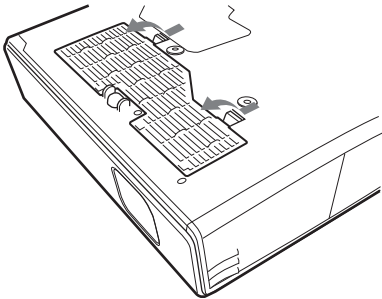
The air filter should be cleaned every 1000 hours.

Remove dust from the outside of the ventilation holes with a vacuum cleaner. 1,000 hours are approximate. This value varies depending on the environment or how the projector is used.

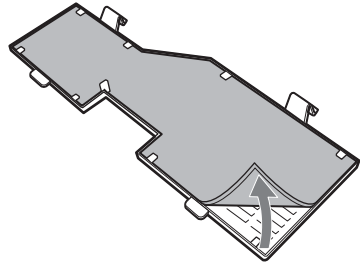


When it becomes difficult to remove the dust from the filter with a vacuum cleaner, remove the air filter and wash it.

- 1 Turn off the power and unplug the power cord.
- 2 Place a protective sheet (cloth) beneath the projector and turn the projector over.
- 3 Remove the air filter cover.



- 4 Remove the air filter.



- 5 Wash the air filter with a mild detergent solution and dry it in a shaded place.
- 6 Attach the air filter and replace the cover.

Notes

- If you neglect to clean the air filter, dust may accumulate, clogging it. As a result, the temperature may rise inside the unit, leading to a possible malfunction or fire.
- If the dust cannot be removed from the air filter, replace the air filter with the supplied new one.
- Be sure to attach the air filter cover firmly; the power will not be turned on if it is not closed securely.
- The air filter has a face and a reverse side. Place the air filter so that it fits in a notch on the air filter cover.

Troubleshooting

If the projector appears to be operating erratically, try to diagnose and correct the problem using the following instructions. If the problem persists, consult with qualified Sony personnel.

Power

| Symptom | Cause and Remedy |
|--|---|
| The power is not turned on. | <ul style="list-style-type: none">• The power has been turned off and on with the I / ⏻ key at a short interval. → Wait for about 60 seconds before turning on the power (see page 25).• The lamp cover is detached. → Close the lamp cover securely (see page 41).• The air filter cover is detached. → Close the air filter cover securely (see page 43). |
| Both the LAMP/COVER and TEMP/FAN indicators light up. | <ul style="list-style-type: none">• The electrical system breaks down. → Consult with qualified Sony personnel. |
| The powered tilt adjuster and the lens protector do not close. | <ul style="list-style-type: none">• The AC power cord is unplugged with the power of the projector turned on. → Connect the power cord to the AC outlet again, turn on the power of the projector, then turn it off. |
| The lens protector cannot open. | <ul style="list-style-type: none">• The electrical system breaks down. → Consult with qualified Sony personnel. If it is necessary to use the projector in case of emergency, slide the lens protector by hand, and then press the I / ⏻ key. You can use the projector. |

Picture

| Symptom | Cause and Remedy |
|---|---|
| No picture. | <ul style="list-style-type: none"> • Cable is disconnected or the connections are wrong. → Check that the proper connections have been made (see page 20). • The connections are wrong. → This projector is compatible with a DDC2B (Digital Data Channel 2B). If your computer is compatible with a DDC, turn the projector on according to the following procedures. <ol style="list-style-type: none"> 1 Connect the projector to the computer. 2 Turn the projector on. 3 Start the computer. • Input selection is incorrect. → Select the input source correctly using the INPUT key (see page 23). • The picture is muted. → Press the PIC MUTING key to release the picture muting (see page 16). • A black screen is displayed. → Press the B key on the presentation tool to release the black screen (see page 17). • The computer signal is not set to output to an external monitor or set to output both to an external monitor and a LCD monitor of a computer. → Set the computer signal to output only to an external monitor (see page 21). |
| The picture is noisy. | <ul style="list-style-type: none"> • Noise may appear on the background depending on the combination of the numbers of dot input from the connector and numbers of pixel on the LCD panel. → Change the desktop pattern on the connected computer. |
| The picture from INPUT A connector is colored strange. | <ul style="list-style-type: none"> • Setting of “Input-A Signal Sel.” in the SET SETTING menu is incorrect. → Select “Computer,” “Video GBR” or “Component” correctly according to the input signal (see page 37). |
| “Please check Input-A Signal Sel.” appears in spite of inputting the correct signal from INPUT A. | <ul style="list-style-type: none"> • Setting of “Input-A Signal Sel.” in the SET SETTING menu is incorrect. → Select “Computer,” “Video GBR” or “Component” correctly according to the input signal (see page 37). |
| On-screen display does not appear. | <ul style="list-style-type: none"> • “Status” in the MENU SETTING menu has been set to “Off.” → Set “Status” in the MENU SETTING menu to “On” (see page 38). |
| Color balance is incorrect. | <ul style="list-style-type: none"> • Picture has not been adjusted properly. → Adjust the picture (see page 33). • Projector is set to wrong color system. → Set “Color System” in the SET SETTING menu to match the color system being input (see page 37). |

| Symptom | Cause and Remedy |
|--------------------------------------|--|
| The picture is too dark. | <ul style="list-style-type: none"> • Contrast or brightness has not been adjusted properly. <ul style="list-style-type: none"> → Adjust the contrast or brightness in the “Adjust Picture...” menu properly (see page 33). • The lamp has burnt or dims. <ul style="list-style-type: none"> → Replace the lamp with a new one (see page 41). |
| The picture is not clear. | <ul style="list-style-type: none"> • Picture is out of focus. <ul style="list-style-type: none"> → Adjust the focus (see page 25). • Condensation has occurred on the lens. <ul style="list-style-type: none"> → Leave the projector for about two hours with the power on. |
| The image extends beyond the screen. | <ul style="list-style-type: none"> • The APA key is pressed although there are black edges around the image. <ul style="list-style-type: none"> → Display the full image on the screen and press the APA key. → Adjust “Shift” in the INPUT SETTING menu properly (see page 35). |
| The picture flickers. | <ul style="list-style-type: none"> • “Dot Phase” in the INPUT SETTING menu has not been adjusted properly. <ul style="list-style-type: none"> → Adjust “Dot Phase” in the INPUT SETTING menu properly (see page 35). |

Sound

| Symptom | Cause and Remedy |
|-----------|--|
| No sound. | <ul style="list-style-type: none"> • Cable is disconnected or the connections are wrong. <ul style="list-style-type: none"> → Check that the proper connections have been made (see page 20). • The audio connecting cable is incorrect. <ul style="list-style-type: none"> → Use a no-resistance stereo audio cable (see page 20). • The sound is muted. <ul style="list-style-type: none"> → Press the AUDIO MUTING key to release the audio muting (see page 16). • The sound is not adjusted properly. <ul style="list-style-type: none"> → Adjust the sound with the VOLUME +/- key on the Remote Commander or adjust “Volume” in the PICTURE SETTING menu (see page 33). • “Speaker” is set to “Off.” <ul style="list-style-type: none"> → Set “Speaker” in the SET SETTING menu to “On” (see page 37). |

Remote Commander/Presentation tool

| Symptom | Cause and Remedy |
|--|--|
| The Remote Commander does not work. | <ul style="list-style-type: none"> • The Remote Commander batteries are dead. <ul style="list-style-type: none"> → Replace with a new battery (see page 17). • The COMMAND ON/OFF switch is set to OFF. <ul style="list-style-type: none"> → Set to ON. • The PJ/NETWORK selector switch is set to NETWORK. <ul style="list-style-type: none"> → Set to PJ. |
| The computer cannot be controlled with the Remote Commander. | <ul style="list-style-type: none"> • The USB cable is not connected. <ul style="list-style-type: none"> → Connect the projector to the computer using the USB cable. • You are operating the Air Shot. <ul style="list-style-type: none"> → When using the Air Shot, the computer cannot be controlled with the Remote Commander. |

| Symptom | Cause and Remedy |
|---|--|
| The computer cannot be controlled with the presentation tool. | <ul style="list-style-type: none"> • The USB cable is used. • The Air Shot is not used. <ul style="list-style-type: none"> → The presentation tool is designed to use with the Air Shot. Use the Remote Commander to operate the device connected via the USB cable. |

Others

| Symptom | Cause and Remedy |
|---|--|
| The LAMP/COVER indicator flashes. | <ul style="list-style-type: none"> • The lamp cover or the air filter cover is detached. <ul style="list-style-type: none"> → Attach the cover securely (see pages 42 and 43). • The lens protector does not open due to a problem. <ul style="list-style-type: none"> → Slide the lens protector by hand, and then press the I/O key. |
| The LAMP/COVER indicator lights up. | <ul style="list-style-type: none"> • The lamp has reached the end of its life. <ul style="list-style-type: none"> → Replace the lamp (see page 41). • The lamp becomes a high temperature. <ul style="list-style-type: none"> → Wait for 60 seconds to cool down the lamp and turn on the power again. |
| The TEMP/FAN indicator flashes. | <ul style="list-style-type: none"> • The fan is broken. <ul style="list-style-type: none"> → Consult with qualified Sony personnel. |
| The TEMP/FAN indicator lights up. | <ul style="list-style-type: none"> • The internal temperature is unusually high. <ul style="list-style-type: none"> → Check to see if nothing is blocking the ventilation holes. • The projector is used at a high altitude. <ul style="list-style-type: none"> → Ensure that “High Altitude Mode” in the INSTALL SETTING menu is set to “On.” |
| Both the LAMP/COVER and TEMP/FAN indicators light up. | <ul style="list-style-type: none"> • The electrical system breaks down. <ul style="list-style-type: none"> → Consult with qualified Sony personnel. |
| The control panel keys do not function. | <ul style="list-style-type: none"> • The control panel keys are locked. <ul style="list-style-type: none"> → Unlock the control panel keys (see page 37). |

Warning Messages

Use the list below to check the meaning of the messages displayed on the screen.

| Message | Meaning and Remedy |
|--|---|
| High temp.! Probably use in high altitude. Switch to high altitude mode on? Yes ▲ No ▼ | <ul style="list-style-type: none"> • Internal temperature is too high. <ul style="list-style-type: none"> → When using the projector at an altitude of 1,500 m or higher, set “High Altitude Mode” in the INSTALL SETTING menu to “On” (see page 40). → If this message appears on the screen when using the projector at normal altitudes, check to see if anything is blocking the ventilation holes (exhaust). |
| High temp.! Lamp off in 1 min. | <ul style="list-style-type: none"> • Internal temperature is too high. <ul style="list-style-type: none"> → Turn off the power. → Check to see if nothing is blocking the ventilation holes. |

| Message | Meaning and Remedy |
|----------------------------------|---|
| Frequency is out of range! | <ul style="list-style-type: none"> • This input signal cannot be projected as the frequency is out of the acceptable range of the projector. → Input a signal that is within the range of the frequency. • The resolution setting of the output signal of a computer is too high. → Set the setting of output to XGA (see page 20). |
| Please check Input-A Signal Sel. | <ul style="list-style-type: none"> • You have input RGB signal from the computer when “Input-A Signal Sel.” in the SET SETTING menu is set to “Component.” → Set “Input-A Signal Sel.” correctly (see page 37). |
| Please replace the LAMP. | <ul style="list-style-type: none"> • It is time to replace the lamp. → Replace the lamp. |

Caution Messages

Use the list below to check the meaning of the messages displayed on the screen.

| Message | Meaning and Remedy |
|-----------------------------|---|
| Not applicable! | <ul style="list-style-type: none"> • You have pressed the wrong key. → Press the appropriate key. |
| The panel keys are locked ! | <ul style="list-style-type: none"> • “Panel Key Lock” in the INSTALL SETTING menu is set to “On.” → All the keys on the control panel of the projector are locked. Operate the projector with the keys on the Remote Commander (see page 37). |

Specifications

Optical characteristics

| | |
|---|---|
| Projection system | 3 LCD panels, 1 lens, projection system |
| LCD panel | 0.79-inch XGA panel, about 2,360,000 pixels (786,432 pixels × 3) |
| Lens | 1.2 times zoom lens (powered) f 23.5 to 28.2 mm/F1.6 to 1.78 |
| Lamp | 190 W UHP |
| Projection picture size | 40 to 300 inches (measured diagonally) |
| Light output | ANSI lumen ¹⁾ 3000 lm (When the Lamp Mode is set to “High”) |
| Throwing distance (When placing on the floor) | When the XGA signal is input |
| | 40-inch: 1.2 to 1.4 m (3.9 to 4.6 feet) |
| | 60-inch: 1.8 to 2.0 m (5.9 to 6.6 feet) |
| | 80-inch: 2.4 to 2.7 m (7.9 to 8.9 feet) |
| | 100-inch: 3.0 to 3.4 m (9.8 to 11.2 feet) |
| | 120-inch: 3.6 to 4.1 m (11.8 to 13.5 feet) |
| | 150-inch: 4.5 to 5.2 m (14.8 to 17.1 feet) |
| | 180-inch: 5.4 to 6.2 m (17.7 to 20.3 feet) |
| | 200-inch: 6.0 to 6.9 m (19.7 to 22.6 feet) |
| | 250-inch: 7.5 to 8.7 m (24.6 to 28.5 feet) |
| | 300-inch: 9.0 to 10.4 m (29.5 to 34.1 feet) |

There may be a slight difference between the actual value and the design value shown above.

1) ANSI lumen is a measuring method of American National Standard IT 7.228.

Electrical characteristics

| | |
|--------------|---|
| Color system | NTSC ^{3.58} /PAL/SECAM/ NTSC ^{4.43} /PAL-M/PAL-N/ PAL60 system, switched automatically/manually (NTSC ^{4.43} is the color system used when playing back a video |
|--------------|---|

| | |
|---|--|
| Resolution | 750 horizontal TV lines (Video input) 1,024 × 768 dots (RGB input) |
| Acceptable computer signals ¹⁾ | fH: 19 to 92 kHz fV: 48 to 92 Hz (Maximum input signal resolution: SXGA+ 1400 × 1050 fV: 60 Hz |
| 1) Set the resolution and the frequency of the signal of the connected computer within the range of acceptable preset signals of the projector. | |

| | |
|--------------------------|--|
| Applicable video signals | 15 k RGB 50/60 Hz, Progressive component 50/60 Hz, DTV (480/60I, 575/50I, 480/60P, 575/50P, 540/60P, 720/60P, 720/50P, 1080/60I, 1080/50I), Composite video, Y/C video |
| Speaker | Monaural speaker system, 40 × 20 mm (1 ³ / ₈ × ¹³ / ₁₆ inches), max. 1 W |

Input/Output

| | |
|-------------|---|
| Video input | VIDEO: phono type Composite video: 1 Vp-p ±2 dB sync negative (75 ohms terminated) S VIDEO: Y/C mini DIN 4-pin type Y (luminance): 1 Vp-p ±2 dB sync negative (75 ohms terminated) C (chrominance): burst 0.286 Vp-p ±2 dB (NTSC) (75 ohms terminated), burst 0.3 Vp-p ±2 dB (PAL) (75 ohms terminated) AUDIO: stereo minijack 500 mVrms, impedance more than 47 kilohms |
| INPUT A | HD D-sub15-pin (female) Analog RGB/component: R/R-Y: 0.7 Vp-p ±2 dB (75 ohms terminated) G: 0.7 Vp-p ±2 dB (75 ohms terminated) G with sync/Y: 1 Vp-p ±2 dB sync negative (75 ohms terminated) B/B-Y: 0.7 Vp-p ±2 dB (75 ohms terminated) SYNC/HD: |

Composite sync input: 1-5 Vp-p high impedance, positive/negative
 Horizontal sync input: 1-5 Vp-p high impedance, positive/negative
 VD:
 Vertical sync input: 1-5 Vp-p high impedance, positive/negative

INPUT B AUDIO: Stereo minijack (Common INPUT A/B)
 500 mVrms, impedance more than 47 kilohms

Analog RGB: HD D-sub 15-pin (female)
 R: 0.7 Vp-p ± 2 dB (75 ohms terminated)
 G: 0.7 Vp-p ± 2 dB (75 ohms terminated)
 G with sync: 1 Vp-p ± 2 dB sync negative (75 ohms terminated)
 B: 0.7 Vp-p ± 2 dB (75 ohms terminated)
 SYNC HD: Composite sync input: 1 - 5 Vp-p high impedance, positive/negative
 Horizontal sync input: 1 - 5 Vp-p high impedance, positive/negative
 VD: Vertical sync input: 1 - 5 Vp-p high impedance, positive/negative

USB Up (female) $\times 1$

Wireless LAN card slot $\times 1$

Memory Stick slot $\times 1$

OUTPUT MONITOR OUT: HD D-sub 15-pin (female)
 R, G, B: Gain Unity: 75 ohms
 SYNC/HD, VD: 4 Vp-p (open), 1 Vp-p (75 ohms)

AUDIO OUT (variable out): Stereo minijack
 max. 1 Vrms, when an input signal is 500 mVrms, impedance less than 5 kilohms

REMOTE RS-232C: D-sub 9 pin

Safety regulations
 UL60950, cUL (CSA No. 60950), FCC Class B, IC Class B, DEMKO (EN60950), CE (LVD, EMC), C-Tick

Output 1 mW

General

Dimensions 328 \times 92.6 \times 283.8 mm (13 \times 3 ³/₄ \times 11 ¹/₄ inches) (w/h/d) (without the projection parts)

Mass Approx. 3.8 kg (8 lb 6 oz)

Power requirements
 AC 100 to 240 V, 2.8 to 1.2 A, 50/60 Hz

Power consumption
 Max. 280 W
 (in standby (standard): 7 W
 in standby (low): 0.5 W)

Heat dissipation 921.3 BTU

Operating temperature 0°C to 35°C (32°F to 95°F)

Operating humidity 35% to 85% (no condensation)

Storage temperature -20°C to +60°C (-4°F to +140°F)

Storage humidity 10% to 90%

Supplied accessories
 Remote Commander (1)
 Size AA (R6) batteries (2)
 Presentation tool (1)
 Size AAA (R03) batteries (2)
 HD D-sub 15 pin cable (2 m) (1) (1-791-992-21)
 USB cable A type - B type (1) (1-790-081-31)
 CD-ROM (Application software and Operating instruction) (1)
 Wireless LAN card (1)
 USB wireless LAN module (1)
 USB storage media (1)
 Carrying case (1)
 AC power cord (1)
 Air filter (for replacement) (1)
 Operating Instructions (1)
 Quick Reference Card (1)
 Security Label (1)

Design and specifications are subject to change without notice.

Laser

Laser type Class 2
 Wavelength 640 nm - 660 nm

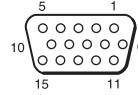
Optional accessories

- Projector Lamp LMP-C190 (for replacement)
 Signal Cable SMF-402 (HD D-sub 15-pin
 (male) ↔ 3 × phono type
 (male))

Some of the items may not be available in some areas. For details, please consult your nearest Sony office.

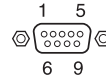
Pin assignment

INPUT A/B connector (HD D-sub 15-pin, female)



| | | | |
|---|---------|----|-----------|
| 1 | R/R-Y | 9 | N.C. |
| 2 | G/Y | 10 | GND |
| 3 | B/B-Y | 11 | GND |
| 4 | GND | 12 | DDC/SDA |
| 5 | GND | 13 | HD/C.Sync |
| 6 | GND (R) | 14 | VD |
| 7 | GND (G) | 15 | DDC/SCL |
| 8 | GND (B) | | |

RS-232C connector (D-sub 9 pin, female)



| | | | |
|---|------|---|-----|
| 1 | DCD | 6 | DSR |
| 2 | RXDA | 7 | RTS |
| 3 | TXDA | 8 | CTS |
| 4 | DTR | 9 | RI |
| 5 | GND | | |

Others

Input signals and adjustable/setting items

Adjust Picture... menu

| Item | Input signal | | | | | |
|-------------|-------------------------|-----------|-----------|----------|-----|--------------------------|
| | Video or S video (Y/C) | Component | Video GBR | Computer | B&W | Air Shot or Memory Stick |
| Contrast | ● | ● | ● | ● | ● | ● |
| Brightness | ● | ● | ● | ● | ● | ● |
| Color | ● | ● | ● | — | — | — |
| Hue | ● (NTSC 3.58/4.43 only) | — | — | — | — | — |
| Sharpness | ● | ● | ● | — | ● | — |
| Gamma Mode | — | — | ●* | ● | — | ● |
| Color Temp. | ● | ● | ● | ● | ● | ● |
| Volume | ● | ● | ● | ● | ● | ● |

● : Adjustable/can be set

— : Not adjustable/cannot be set

*: Preset memory no.3, 4 only

INPUT SETTING menu

| Item | Input signal | | | | | |
|----------------|------------------------|-----------|-----------|------------------------|-----|--------------------------|
| | Video or S video (Y/C) | Component | Video GBR | Computer | B&W | Air Shot or Memory Stick |
| Dot Phase | — | — | — | ● | — | — |
| H Size | — | ●*1 | — | ● | — | — |
| Shift | — | ●*1 | — | ● | — | — |
| Scan Converter | — | — | — | ● (lower than SVGA) | — | — |
| Wide Mode | ● | ●*2 | ● | — | ● | — |

● : Adjustable/can be set

— : Not adjustable/cannot be set

*1: Expect preset memory no.3, 4

*2: Expect preset memory no.5, 45, 47, 48, 50

Preset signals

| Memory No. | Preset signal | | fH (kHz) | fV (Hz) | Sync | SIZE |
|------------|---------------|--------------------|----------|---------|----------------------------|------|
| 1 | Video 60 Hz | 60 Hz | 15.734 | 59.940 | | |
| 2 | Video 50 Hz | 50 Hz | 15.625 | 50.000 | | |
| 3 | 480/60i | 480/60i | 15.734 | 59.940 | S on G/Y or Composite Sync | |
| 4 | 575/50i | 575/50i | 15.625 | 50.000 | S on G/Y or Composite Sync | |
| 5 | 1080/60i | 1035/60i, 1080/60i | 33.750 | 60.000 | | |
| 6 | 640 × 350 | VGA mode 1 | 31.469 | 70.086 | H-pos, V-neg | 800 |
| 7 | | VGA VESA 85 Hz | 37.861 | 85.080 | H-pos, V-neg | 832 |
| 8 | 640 × 400 | PC-9801 Normal | 24.823 | 56.416 | H-neg, V-neg | 848 |
| 9 | | VGA mode 2 | 31.469 | 70.086 | H-neg, V-pos | 800 |
| 10 | | VGA VESA 85 Hz | 37.861 | 85.080 | H-neg, V-pos | 832 |
| 11 | | VGA mode 3 | 31.469 | 59.940 | H-neg, V-neg | 800 |
| 12 | 640 × 480 | Macintosh 13" | 35.000 | 66.667 | H-neg, V-neg | 864 |
| 13 | | VGA VESA 72 Hz | 37.861 | 72.809 | H-neg, V-neg | 832 |
| 14 | | VGA VESA 75 Hz | 37.500 | 75.000 | H-neg V-neg | 840 |
| 15 | | VGA VESA 85 Hz | 43.269 | 85.008 | H-neg V-neg | 832 |
| 16 | 800 × 600 | SVGA VESA 56 Hz | 35.156 | 56.250 | H-pos, V-pos | 1024 |
| 17 | | SVGA VESA 60 Hz | 37.879 | 60.317 | H-pos, V-pos | 1056 |
| 18 | | SVGA VESA 72 Hz | 48.077 | 72.188 | H-pos, V-pos | 1040 |
| 19 | | SVGA VESA 75 Hz | 46.875 | 75.000 | H-pos, V-pos | 1056 |
| 20 | | SVGA VESA 85 Hz | 53.674 | 85.061 | H-pos, V-pos | 1048 |
| 21 | 832 × 624 | Macintosh 16" | 49.724 | 74.550 | H-neg, V-neg | 1152 |
| 22* | 1024 × 768 | XGA VESA 43 Hz | 35.524 | 86.958 | H-pos, V-pos | 1264 |
| 23 | | XGA VESA 60 Hz | 48.363 | 60.004 | H-neg V-neg | 1344 |
| 24 | | XGA VESA 70 Hz | 56.476 | 69.955 | H-neg V-neg | 1328 |
| 25 | | XGA VESA 75 Hz | 60.023 | 75.029 | H-pos, V-pos | 1312 |
| 26 | | XGA VESA 85 Hz | 68.677 | 84.997 | H-pos, V-pos | 1376 |
| 27 | 1152 × 864 | SXGA VESA 70 Hz | 63.995 | 70.019 | H-pos, V-pos | 1472 |
| 28 | | SXGA VESA 75 Hz | 67.500 | 75.000 | H-pos, V-pos | 1600 |
| 29 | | SXGA VESA 85 Hz | 77.487 | 85.057 | H-pos, V-pos | 1568 |
| 30 | 1152 × 900 | Sunmicro LO | 61.795 | 65.960 | H-neg, V-neg | 1504 |
| 31 | | Sunmicro HI | 71.713 | 76.047 | Composite Sync | 1472 |

Others

| Memory No. | Preset signal | | fH (kHz) | fV (Hz) | Sync | SIZE |
|------------|---------------|------------------------------------|------------------------------------|---------|--------------|--------|
| 32 | 1280 × 960 | SXGA VESA 60 Hz | 60.000 | 60.000 | H-pos, V-pos | 1800 |
| 33 | | SXGA VESA 75 Hz | 75.000 | 75.000 | H-pos, V-pos | 1728 |
| 34* | 1280 × 1024 | SXGA VESA 43 Hz | 46.433 | 86.872 | H-pos, V-pos | 1696 |
| 35 | | SGI-5 | 53.316 | 50.062 | S on G | 1680 |
| 36 | | SXGA VESA 60 Hz | 63.974 | 60.013 | H-pos, V-pos | 1696 |
| 37 | | SXGA VESA 75 Hz | 79.976 | 75.025 | H-pos, V-pos | 1688 |
| 38 | | SXGA VESA 85 Hz | 91.146 | 85.024 | H-pos, V-pos | 1476 |
| 43 | | 480/60p | 480/60p (Progressive component) | 31.470 | 60.000 | S on G |
| 44 | 575/50p | 575/50p (Progressive component) | 31.250 | 50.000 | S on G | |
| 45 | 1080/50i | 1080/50i | 28.130 | 50.000 | | |
| 47 | 720/60p | 720/60p | 45.000 | 60.000 | | |
| 48 | 720/50p | 720/50p | 37.500 | 50.000 | | |
| 50 | 540/60p | 540/60p | 33.750 | 60.000 | | |
| 52 | 1400 × 1050 | SXGA+ 60 Hz | 63.981 | 60.020 | H-pos, V-pos | 1688 |

Notes

- When a signal other than the preset signals shown above is input, the picture may not appear properly.
- Memory No. 22 and 34 show the interlace signal.
- When a SXGA+ signal is input, the image may extend beyond the screen. In this case, input a signal with no black edges around the image, and disconnect and reconnect the cable or select the input signal by pressing INPUT key.

Warning on power connection

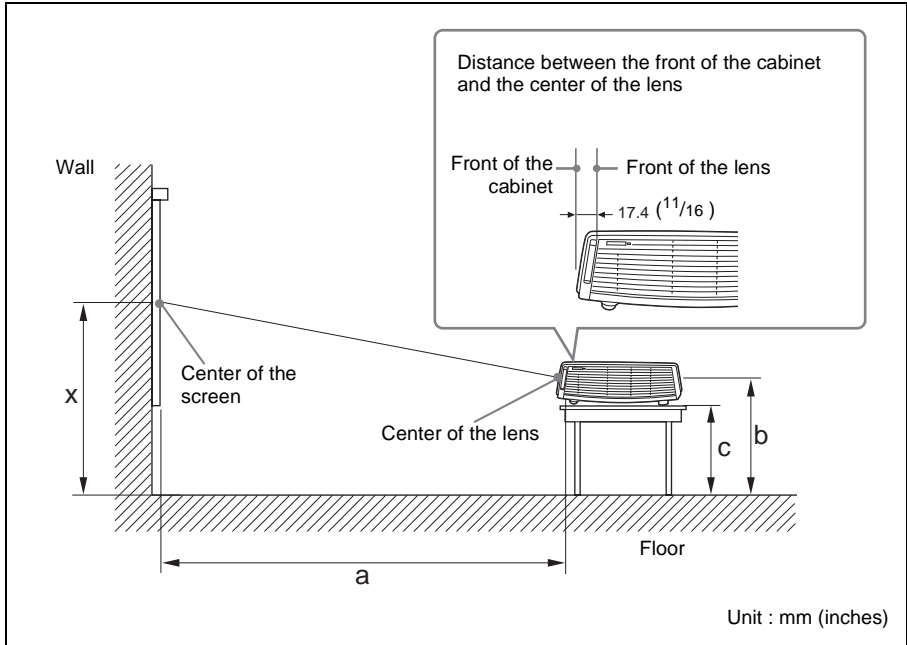
Use the supplied power cord when you use the projector in your country.
 Otherwise, use a proper power cord meeting the following specification.

| | The United States, Canada | | Continental Europe | | UK, Ireland, Australia, New Zealand | Japan |
|----------------------------|--|--------------|--------------------|--------------|---|---------|
| Plug type | VM0233 | 290B | YP-12A | COX-07 | – ¹⁾ | YP332 |
| Female end | VM0089 | 386A | YC-13B | COX-02 | VM0310B | YC-13 |
| Cord type | SJT | SJT | H05VV-F | H05VV-F | N13237/CO-228 | VCTF |
| Rated Voltage & Current | 10A/ 125V | 10A/ 125V | 10A/ 250V | 10A/ 250V | 10A/250V | 7A/125V |
| Safety approval | UL/CSA | UL/CSA | VDE | VDE | VDE | DENAN |
| Cord length (max.) | 4.5 m (177 ¹ / ₄ inches) | | – | | | |

¹⁾ Use the correct plug for your country.

Installation Diagram

Floor Installation (Front Projection)



This section describes the examples of installing the projector on a desk, etc.

See the chart on page 57 concerning the installation measurements.

The alphabetical letters in the illustration indicate the distances below.

a: distance between the screen and the center of the lens

b: distance between the floor and the center of the lens

c: distance between the floor and the bottom of the adjusters of the projector

x: distance between the floor and the center of the screen (free)

| SS | | 40 | 60 | 80 | 100 | 120 | 150 | 180 | 200 | 250 | 300 |
|----|---|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| a | N | 1160 (45 ^{3/4}) | 1760 (69 ^{3/8}) | 2360 (93) | 2970 (117) | 3570 (140 ^{5/8}) | 4470 (176 ^{1/8}) | 5380 (211 ^{7/8}) | 5980 (235 ^{1/2}) | 7490 (295) | 9000 (354 ^{3/8}) |
| | M | 1350 (53 ^{1/4}) | 2040 (80 ^{3/8}) | 2740 (108) | 3440 (135 ^{1/2}) | 4140 (163 ^{1/8}) | 5180 (204) | 6230 (245 ^{3/8}) | 6930 (272 ^{7/8}) | 8670 (341 ^{1/2}) | 10420 (410 ^{3/8}) |
| b | | x-237 (x-9 ^{3/8}) | x-356 (x-14) | x-474 (x-18 ^{3/4}) | x-593 (x-23 ^{3/8}) | x-711 (x-28) | x-889 (x-35) | x-1067 (x-42) | x-1185 (x-46 ^{3/4}) | x-1482 (x-58 ^{3/8}) | x-1778 (x-70 ^{1/8}) |
| c | | x-299 (x-11 ^{7/8}) | x-417 (x-16 ^{1/2}) | x-536 (x-21 ^{1/8}) | x-654 (x-25 ^{7/8}) | x-773 (x-30 ^{1/2}) | x-951 (x-37 ^{1/2}) | x-1129 (x-44 ^{1/2}) | x-1247 (x-49 ^{1/8}) | x-1543 (x-60 ^{7/8}) | x-1840 (x-72 ^{1/2}) |

$$a (N) = \{(SS \times 23.177 / 0.7874) - 50.4\} \times 1.025$$

$$a (M) = \{(SS \times 28.177 / 0.7874) - 50.4\} \times 0.975$$

$$b = x - (SS / 0.7874 \times 4.667)$$

$$c = x - (SS / 0.7874 \times 4.667 + 61.8)$$

The installation measurements and their calculation method for each lens are shown above.

The alphabetical letters in the charts and calculation methods indicate the following.

SS: screen size measured diagonally (inches)

a: distance between the screen and the center of the lens

b: distance between the floor and the center of the lens

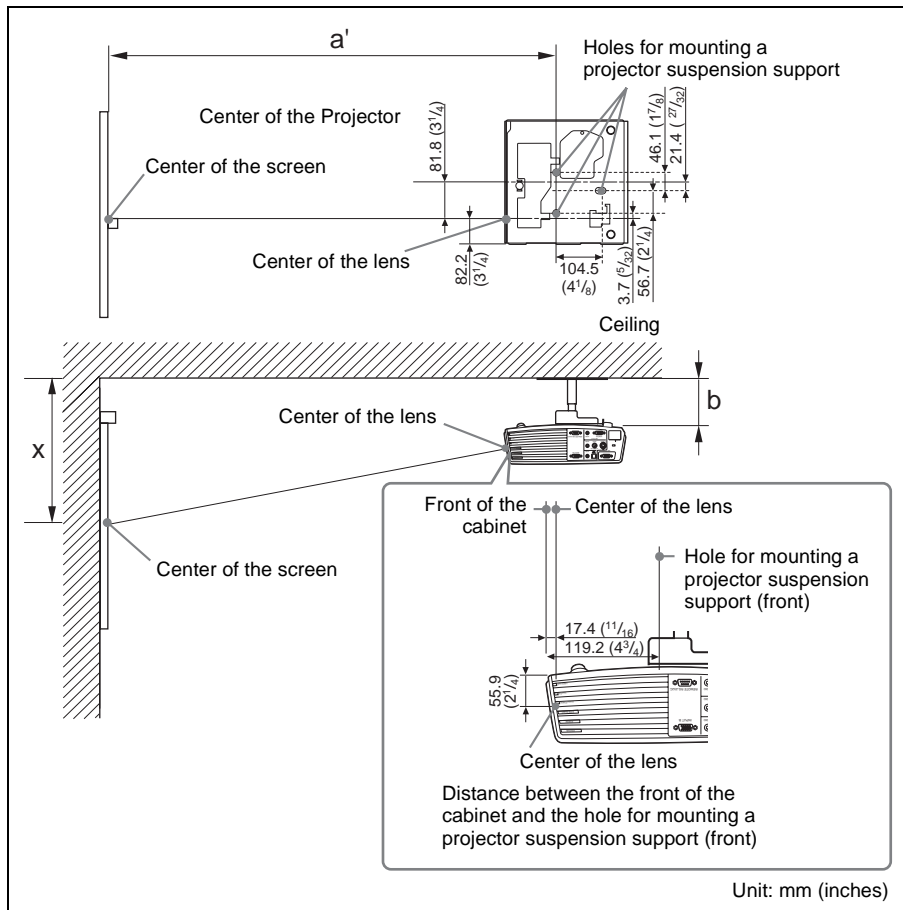
c: distance between the floor and the adjusters of the projector

x: free

N: minimum

M: maximum

Ceiling Installation (Front Projection)



This section describes the examples for installing the projector on the ceiling. When installing the projector on the ceiling, use a Projector Suspension Support recommended by Sony.

For ceiling installation, ask for qualified Sony personnel.

See the chart on page 59 concerning the installation measurements.

The alphabetical letters in the illustrations indicate the distances below.

a': distance between the hole (front) for mounting a projector suspension support on bottom surface of this projector and the center of the screen

b: distance between the hole (front) for mounting a projector suspension support on bottom surface of this projector and the ceiling

x: distance between the ceiling and the center of the screen

| SS | 40 | 60 | 80 | 100 | 120 | 150 | 180 | 200 | 250 | 300 | |
|----|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|--------------------------------|
| a' | N | 1260 (49 ⁵ /8) | 1860 (73 ¹ /4) | 2470 (97 ³ /8) | 3070 (121) | 3670 (144 ⁵ /8) | 4580 (180 ³ /8) | 5480 (215 ⁷ /8) | 6090 (239 ⁷ /8) | 7600 (299 ¹ /4) | 9100 (358 ³ /8) |
| | M | 1450 (57 ¹ /8) | 2140 (84 ³ /8) | 2840 (111 ⁷ /8) | 3540 (139 ¹ /2) | 4240 (167) | 5280 (208) | 6330 (249 ¹ /4) | 7030 (276 ¹³ /16) | 8770 (345 ³ /8) | 10520 (414 ¹ /4) |
| x | b+293 (b+11 ⁵ /8) | b+411 (b+16 ¹ /4) | b+530 (b+20 ⁷ /8) | b+649 (b+25 ⁵ /8) | b+767 (b+30 ¹ /4) | b+945 (b+37 ¹ /4) | b+1123 (b+44 ¹ /4) | b+1241 (b+48 ⁷ /8) | b+1538 (b+60 ⁵ /8) | b+1834 (b+72 ¹ /4) | |
| b | Free | | | | | | | | | | |

$$a' (N) = \{(SS \times 23.177 / 0.7874) + 51.4\} \times 1.025$$

$$a' (M) = \{(SS \times 28.177 / 0.7874) + 51.4\} \times 0.975$$

$$x = b + (SS / 0.7874 \times 4.667 + 55.8)$$

The installation measurements and their calculation method for each lens are shown above.

The alphabetical letters in the charts and calculation methods indicate the following.

SS: screen size measured diagonally (inches)

a': distance between the hole (front) for mounting a projector suspension support on bottom surface of this projector and the center of the screen

b: distance between the hole (front) for mounting a projector suspension support on bottom surface of this projector and the ceiling

x: distance between the center of the screen and the ceiling





N: minimum

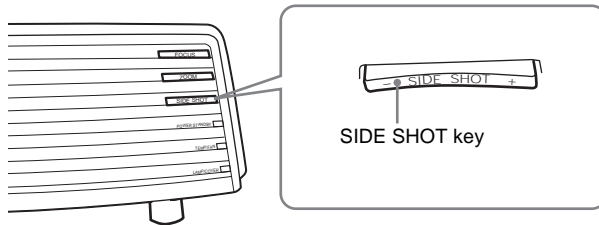
M: maximum

“Side Shot” and “V Keystone” Adjustments

With “Side Shot” (horizontal keystone adjustment) provided for the projector, you can project the picture from the side of the screen.

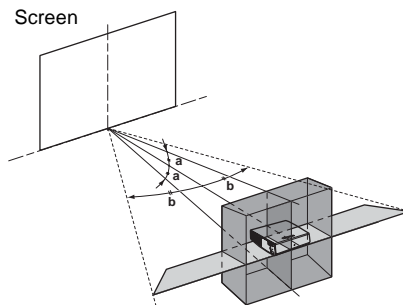
When projecting with “Side Shot” adjustment only, you can adjust the horizontal distortion of the screen using “Side Shot” to the maximum.

When projecting with both “Side Shot” and “V Keystone” (vertical keystone adjustment), you can adjust the vertical ( ) and horizontal ( ) distortion of the screen.



Adjustment Areas of “Side Shot” and “V Keystone”

The adjustable distortion area using “Side Shot” and “V Keystone” is described below.



- a:** Tilting angle of the projector in the “V Keystone” adjustment area
- b:** “Side Shot” (H Keystone adjustment) area

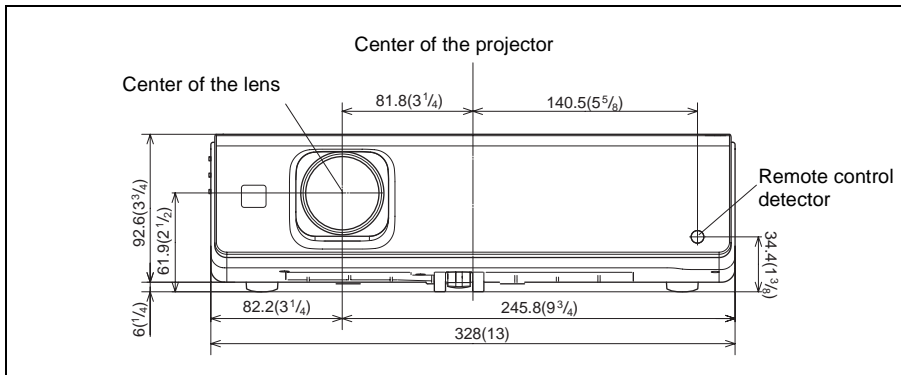
| Input signals | | a | b |
|--|------------|-------|-------|
| Video/60, Video/50, 480/60i, 575/50i, 480/60p, 575/50p | a=0 | 0 | +/-20 |
| | a≠0 or b≠0 | +/-20 | +/-11 |
| | b=0 | +/-30 | 0 |
| 1080/60i, 1080/50i, 540/60p | a=0 | 0 | +/-16 |
| | a≠0 or b≠0 | +/-20 | +/-11 |
| | b=0 | +/-30 | 0 |
| 720/60p, 720/50p | a=0 | 0 | +/-16 |
| | a≠0 or b≠0 | +/-20 | +/-7 |
| | b=0 | +/-30 | 0 |
| PC, Air Shot, Memory Stick | a=0 | 0 | +/-14 |
| | a≠0 or b≠0 | +/-20 | +/-7 |
| | b=0 | +/-30 | 0 |

Notes

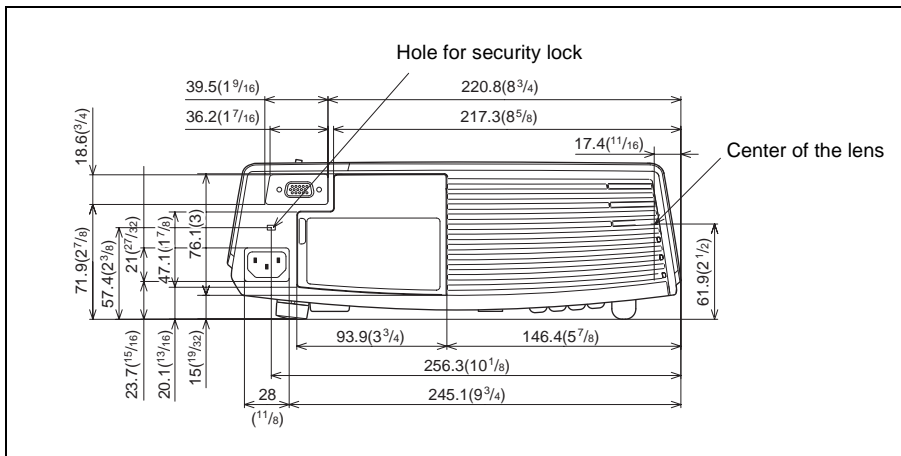
- If “V Keystone” is set to “Auto,” the “Side Shot” adjustment area may be narrow.
- “V Keystone” of the INSTALL SETTING menu is set to “Auto” at the factory, and the vertical distortion of the picture is automatically corrected. However, the distortion may not be perfectly corrected depending on the room temperature or the screen angle. In this case, set to “Manual,” and correct the distortion using values.

Dimensions

Front

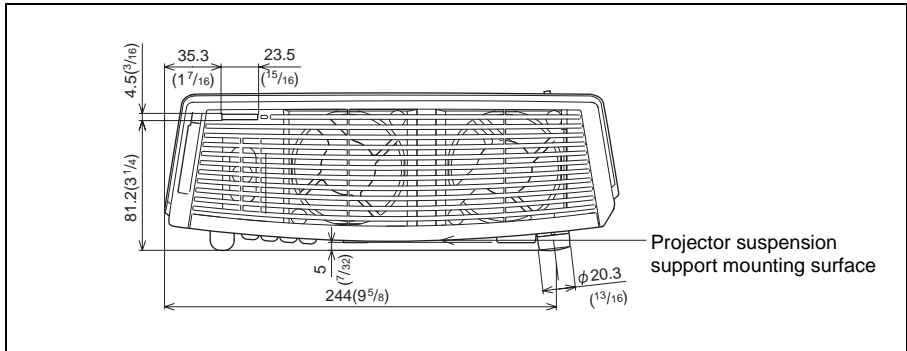


Right side

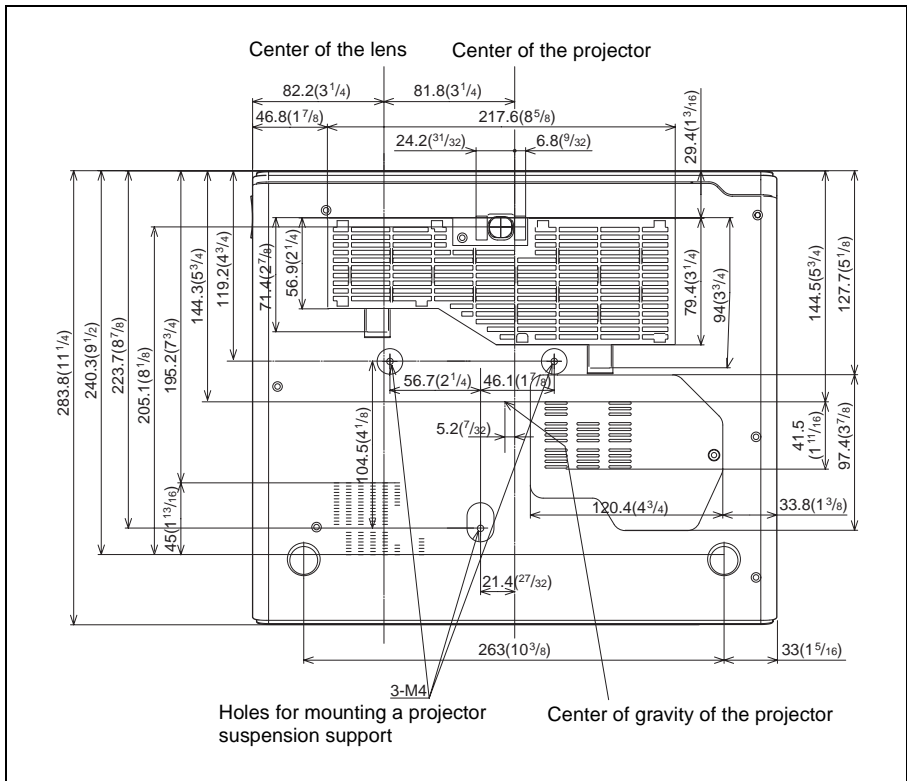


Unit: mm (inches)

Left side



Bottom



Unit: mm (inches)

Index

A

- Adjusting
 - memory of the settings 32
 - the picture 33
 - the picture size/shift ... 35
- Air filter 43
- Auto Input Search 37

B

- Background 39
- Brightness 33

C

- Color 33
- Color System 37
- Color Temp. 34
- Connections
 - computer 20
 - VCR 22
- Contrast 33

D

- Digital Zoom function 29
- Direct Power On/Off
 - function 29
- Dot Phase 35

F

- fH (Horizontal Frequency)
..... 40
- fV (Vertical Frequency) . 40

G

- Gamma Mode 34

H

- H Size 35
- High Altitude Mode 40
- Hue 33

I

- Illumination 37
- Image Flip 39
- INPUT A/B connector
 - pin assignment 51

- Input-A Signal Sel. 37
- Input-C Select 37
- Installation examples 19
 - notes 7
 - unsuitable conditions 8
 - unsuitable installation .. 7

L

- Lamp Mode 40
- Lamp replacement 41
- Lamp Timer 40
- Language 38
 - selecting the menu
 - language 26
- Lens Control 40
- Lens protector 12
- Location and function of controls
 - connector panel 14
 - control panel 13
 - rear/right side/bottom . 12
 - Remote Commander .. 15
 - top/front/left side 12

M

- Menu
 - clearing the menu display
..... 32
 - INFORMATION Menu
..... 40
 - INPUT SETTING menu
..... 34
 - INSTALL SETTING
menu 39
 - MENU SETTING menu
..... 38
 - PICTURE SETTING
menu 33
 - SET SETTING menu . 36
 - using the menu 31
- Menu Color 38
- Menu Position 38
- Message
 - caution 48
 - warning 47

O

- Off & unplug function ... 29
- Optional accessories 51

P

- Panel Key Lock 37
- Picture Mode 33
- Pin assignment 51
- Power
 - turn on 23
- Power consumption in
 - standby mode 37
- Power Saving 37
- Powered tilt adjuster 24
- Precautions 6
- Presentation tool 17

R

- Remote Commander 15
 - front remote control
 - detector 12
 - location and function of controls 15
 - rear remote control
 - detector 12
- Reset
 - resettable items 32
 - resetting the item 32

S

- Scan Converter 35
- Screen size 19, 49
- Security Lock 40
- SET SETTING menu 36
- Sharpness 34
- Shift 35
- Side Shot 39
- Smart APA 36
- Specifications 49
- Startup screen 23
- Status 38
- Supplied accessories 50

T

- Test Pattern 39
- Tilt... 39
- Troubleshooting 44

U

- USB connector 20

V

- V Keystone 39
- Volume 33