SONY®

Data
Projector

Operating Instructions

Before operating the unit, please read this manual and supplied Quick Reference Manual thoroughly and retain it for future reference.

VPL-FH500L
VPL-FX500L

Not all models are available in all countries and area. Please check with your local Sony Authorized Dealer.

HDMI

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Location and Function of Controls

Main Unit

❶ Lens (not supplied) (page 40)

❷ Front panel (page 40)

❸ Lamp cover (page 36)

❹ Air filter cover (page 38)

❺ Ventilation holes (intake)

❻ Ventilation holes (exhaust)

> **Caution**
>
> Do not place anything near the ventilation holes as this may cause internal heat buildup. Do not place your hand near the ventilation holes and the circumference as this may cause injury.

❼ ON/STANDBY indicator (page 32)

❽ LAMP/COVER indicator (page 32)

❾ Control panel (page 5)

❿ Connector panel (page 4)

⓫ Optional adapter slot (page 45)
Install an optional adapter (not supplied). (VPL-FH500L only)

⓬ Remote control detectors
The remote control detectors are located at the front and rear of the projector.

⓭ Adjusters (page 14)

⓮ Antitheft lock
Connects to an optional antitheft cable manufactured by Kensington.
For details, visit Kensington's web site.
http://www.kensington.com/

⓯ Antitheft bar
Connects to a commercially available antitheft chain or wire.

Connector Panel
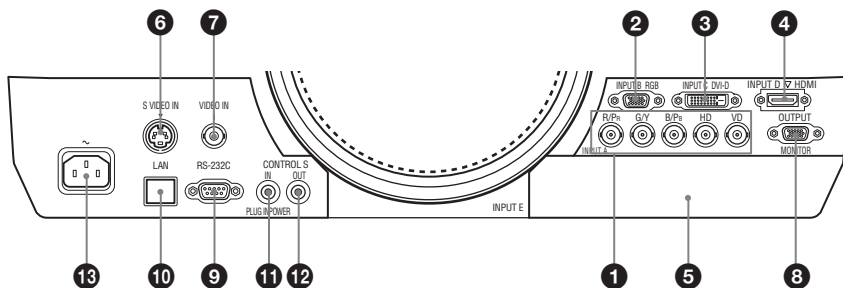
Input (page 8)

① INPUT A
  Video: RGB/YP$_B$P$_R$ input connector
  (RGB HD VD/YP$_B$P$_R$)

② INPUT B
  Video: RGB input connector (RGB)

③ INPUT C
  Video: DVI-D input connector (DVI-D)

④ INPUT D (VPL-FH500L only)
  Video: HDMI input connector

⑤ INPUT E (VPL-FH500L only)
  Video: Optional adapter slot*

⑥ S VIDEO (S VIDEO IN)
  Video: S video input connector

⑦ VIDEO (VIDEO IN)
  Video: Video input connector

> **Note**
> * Regarding attachable optional adapter,
>   consult with qualified Sony personnel.

Output (page 11)

⑧ OUTPUT
  Video: Monitor output connector
  (MONITOR)

> **Note**
> This connector outputs the image. Output as a
> computer signal input from the RGB input
> connector (INPUT A, INPUT B) or a video

signal input from the YP$_B$P$_R$ input connector
(INPUT A).

Others

⑨ RS-232C connector
  RS-232C compatible control connector

⑩ LAN connector (page 29)

**⑪ CONTROL S input connector
  (DC power supply) (CONTROL S
  IN PLUG IN POWER)**
  Connects to the CONTROL S output
  connector on the supplied Remote
  Commander with a connecting cable
  (stereo mini plug (not supplied)) when
  using it as a wired Remote Commander.
  You do not need to install batteries in the
  Remote Commander, as the power is
  supplied from this connector.

**⑫ CONTROL S output connector
  (CONTROL S OUT)**
  For coupling control of multiple
  projectors with the wired Remote
  Commander.

⑬ AC IN (~) socket
  Connects the supplied AC power cord.

Remote Commander and Control Panel

Remote Commander
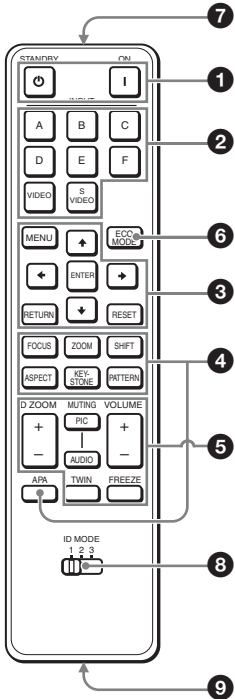
Control Panel
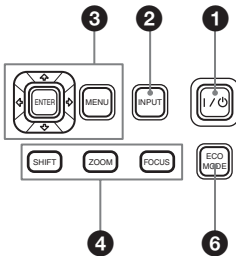
a **Turning on the power/Going to standby**

l (On) key
⏻ (Standby) key

b **Selecting an input signal (page 12)**
INPUT key (main unit)
Direct input select keys (Remote Commander)

VPL-FH500L: The F key is not provided in this projector.
VPL-FX500L: The D, E, and F keys are not provided in this projector.

c **Operating a menu (page 15)**
ENTER /↑/↓/←/→ (arrow) keys
MENU key
RETURN key
RESET key

d **Adjusting the image (page 13)**
FOCUS key

Use this key when attaching the power focus lens.

ZOOM key

Use this key when attaching the power zoom lens.

SHIFT key

ASPECT key (pages 18, 20)

Changes the aspect ratio of the projected image.

KEYSTONE key

Adjusts the vertical trapezoidal distortion of the image manually. When you press this key, the Keystone menu is displayed. Use the arrow keys (↑/↓/←/→) for adjustment.

PATTERN key (page 14)

APA (Auto Pixel Alignment) key[*]

Automatically adjusts a picture to its clearest while a signal is input from a computer. You can cancel the adjustment by pressing the APA key again while adjusting.

Note

[*] Use this key when inputing a computer signal via the RGB input connector (INPUT A, INPUT B).

Overview

Location and Function of Controls | 5

❺ Using various functions during projecting

D ZOOM (Digital Zoom) +/– key[*1]

Enlarges a portion of the image while projecting.

1 Press the D ZOOM + key to display the digital zoom icon on the projected image.
2 Press the ♠/♦/♦/♦ keys to move the digital zoom icon to the point on the image you wish to enlarge.
3 Press the D ZOOM + key or the D ZOOM – key repeatedly to change the enlargement ratio. The image can be enlarged up to 4 times.

Press the RESET key to restore the previous image.

TWIN (Twin Picture) key (VPL-FH500L only)

You can project the images from two input signals on the screen as a main picture and subpicture at the same time. To switch between one and two pictures, press the TWIN key on the Remote Commander.

One picture display

TWIN key

Two pictures display

(A) Main picture (B) Subpicture
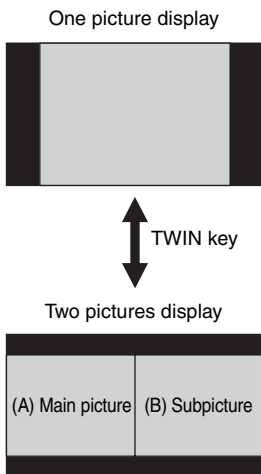
You can select the image to project to the main picture.
The subpicture is preset to display the image from INPUT B.
For details on combinations of input signals, see "Combinations of Input Signals" on page 53.

Notes
- When displaying a two pictures, the **I** (On) key, ⏻ (standby) key, INPUT key, and MUTING (PIC) key are available.
- When "Screen Aspect" (page 26) is set to "4:3," the two picture function is not available.
- When displaying a two pictures, the input signal icon -⊡ does not appear in the input select window (page 12).
- Picture settings set for one pictures may not be reflected as two pictures.

MUTING key

PIC: Cuts off the image. Press again to restore the image.
AUDIO: This function is not provided in this projector.

VOLUME +/– key

This function is not provided in this projector.

FREEZE key[*2]

Pauses a projected image. Press again to restore the image.

Notes
*1: Use this key when inputting a computer signal. But it may not be enabled, depending on the resolution of the input signal and when displaying a two pictures (VPL-FH500L only).
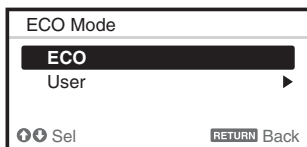*2: Use this key when inputting a computer signal.

❻ Setting the energy–saving mode easily
ECO MODE key

"Lamp Mode," "Power Saving Mode," and "Standby Mode" for energy-saving can be set easily.

1 Press the ECO MODE key to display the ECO Mode menu.

ECO Mode Menu

```
ECO Mode

  ECO
  User                        ▶

●● Sel              RETURN Back
```

2 Press the ↑/↓ key or ECO MODE key
to select ECO or User mode.
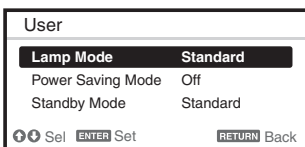**ECO:** Sets each mode to the optimum
energy-saving value.
Lamp Mode: Standard
Power Saving Mode: Standby
Standby Mode: Low
(go to step **6**)
User: Sets each item of the energy-
saving mode menu as you desire
(go to step **3**).

3 Select "User" then press the ➜ key.
The setting items appear.

```
User

  Lamp Mode          Standard
  Power Saving Mode  Off
  Standby Mode       Standard

●● Sel  ENTER Set        RETURN Back
```

4 Press the ↑/↓ key to select the ECO
Mode item then press the ➜ key or the
ENTER key.
5 Press the ↑/↓ key to select the setting
value.
6 Press the RETURN key to restore the
previous image.
For details on ECO Mode settings, see
"Lamp Mode" (page 22) on the Function
menu and "Standby Mode" (page 25)
and "Power Saving Mode" (page 25) on
the Connection/Power menu.

Others

❼ Infrared transmitter

❽ ID MODE 1/2/3 switch (page 23)

Sets an ID mode of the Remote
Commander. If you assign a different ID
number to each projector when multiple
projectors are used, you can control only
the projector with the same ID mode as
that of the Remote Commander.

❾ CONTROL S output connector

Connects to the CONTROL S input
connector on the projector with a
connecting cable (stereo mini plug (not
supplied)) when using the Remote
Commander as a wired one.
You do not need to install batteries in the
Remote Commander, as the power is
supplied from the projector.

About Remote Commander operation

• Direct the Remote Commander toward the
remote control detector.
• The shorter the distance between the
Remote Commander and the projector is,
the wider the angle within which the
Remote Commander can control the
projector becomes.
• If there is any obstruction between the
Remote Commander and the remote
control detector on the projector, the
projector may not be able to receive
signals from the Remote Commander.

Connecting the Projector

Notes

• Turn off all equipment before making any connections.
• Use the proper cables for each connection.
• Insert the cable plugs firmly; Loose connections may reduce performance of picture signals or cause a malfunction. When pulling out a cable, be sure to grip it by the plug, not the cable itself.
• For more information, refer also to the instruction manuals of the equipment you are connecting.

Connecting a Computer

Connection with a computer is explained for each input signal.

INPUT A

For connection when there is some distance between a computer and the projector.

RGB output connector

R/P$_R$ G/Y B/P$_B$ HD VD

INPUT A

Mini D-sub 15-pin – BNC cable (not supplied)
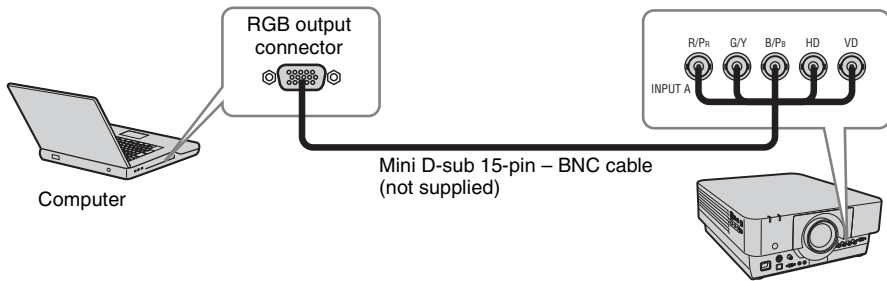
Computer

INPUT B

For connecting a computer with an RGB output connector.

RGB output connector

INPUT B RGB

Mini D-sub 15-pin cable (not supplied)
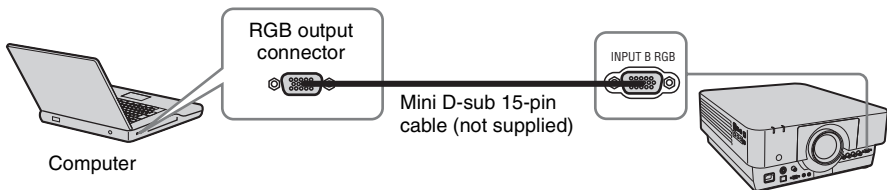
Computer

Note

It is recommended that you set the resolution of your computer to 1920 × 1200 pixels (VPL-FH500L) or 1024 × 768 pixels (VPL-FX500L) for the external monitor.

INPUT C

For connecting a computer with a DVI-D output connector.

DVI-D output connector

INPUT C DVI-D

DVI-D cable (not supplied)

Computer

INPUT D (VPL-FH500L only)

For connecting a computer with a HDMI output connector.

HDMI output connector

INPUT D ▽ HDMI

HDMI cable (not supplied)

Computer

Notes

- The HDMI connector of this projector is not compatible with DSD (Direct Stream Digital) Signal or CEC (Consumer Electronics Control) Signal.
- Be sure to use the HDMI cable with an HDMI logo.

Connecting a Video Equipment

Connections with a VHS video deck, DVD player, or BD player are explained for each input signal.

S VIDEO IN

For connecting video equipment with an S-video output connector.

S VIDEO IN

S video output connector

S video cable (not supplied)

Video equipment

VIDEO IN

For connecting video equipment with a video output connector.

Video equipment — Video output connector — Video – BNC cable (not supplied) — VIDEO IN
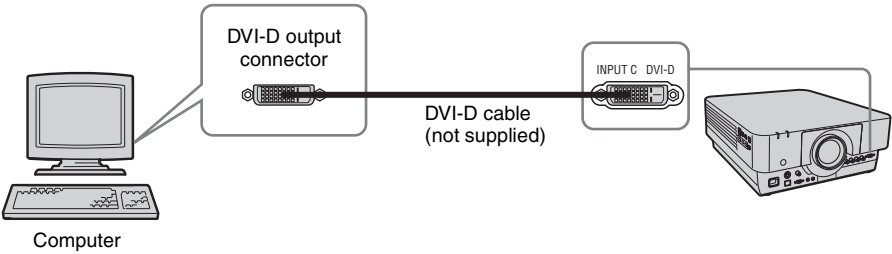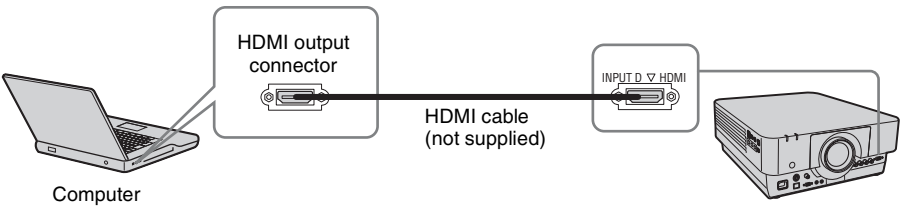
INPUT A

For connection when there is some long distance between the video equipment and projector.

YPBPR output connector

Video equipment — Component – BNC cable (not supplied) — R/PR G/Y B/PB INPUT A

INPUT D (VPL-FH500L only)

For connecting video equipment with a HDMI output connector.
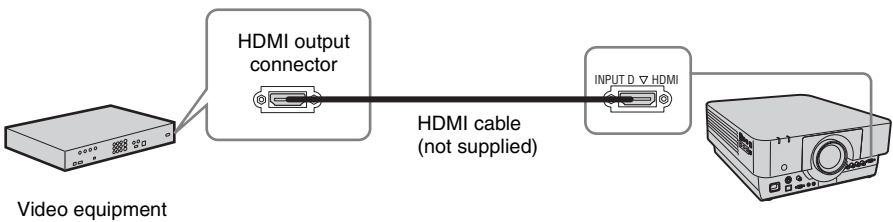
HDMI output connector — HDMI cable (not supplied) — INPUT D ▽ HDMI

Video equipment

Notes

- The HDMI connector of this projector is not compatible with DSD (Direct Stream Digital) Signal or CEC (Consumer Electronics Control) Signal.
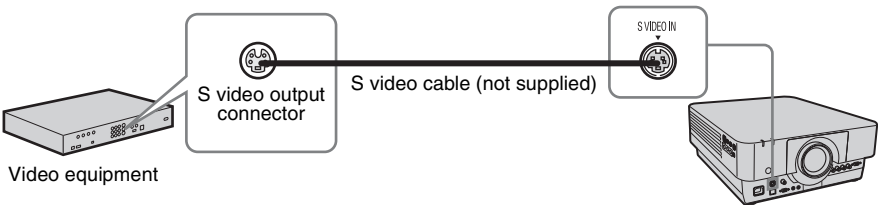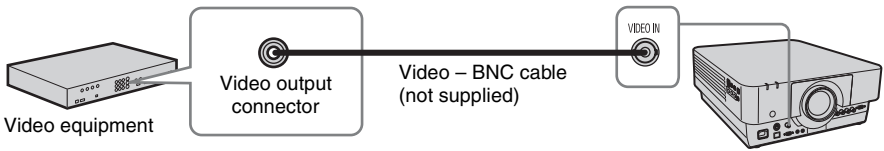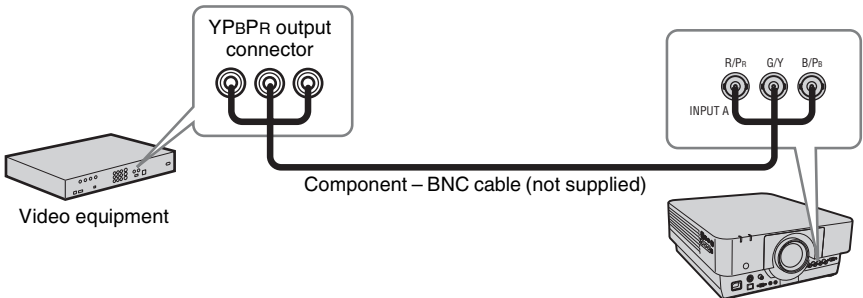- Be sure to use the HDMI cable with an HDMI logo.

To attach the HDMI cable

Fix the cable to the cable tie holder at the bottom of the projector, using a commercially available cable tie, as in the illustration.
Use a cable tie of less than 1.9 mm × 3.8 mm in thickness.
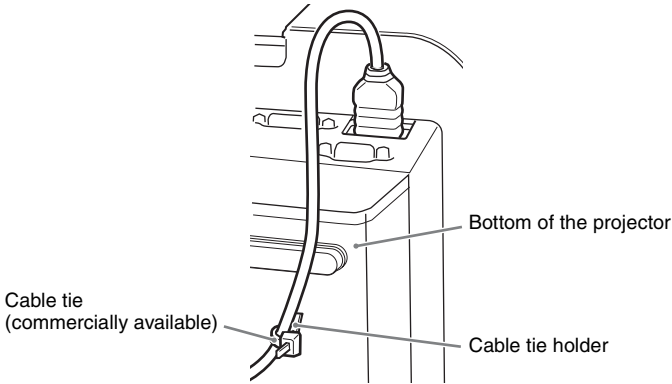

Bottom of the projector

Cable tie
(commercially available)

Cable tie holder

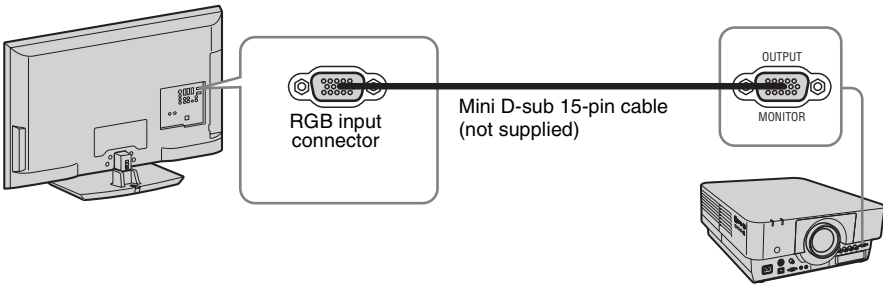## Connecting an External Monitor

OUTPUT

Projected images can be output to display equipment such as a monitor.

Display equipment

RGB input connector

Mini D-sub 15-pin cable (not supplied)

OUTPUT

MONITOR

**Note**

This connector outputs the image. Output as a computer signal input from the RGB input connector (INPUT A, INPUT B) or a video signal input from the YPBPR input connector (INPUT A).

Projecting an Image

The size of a projected image depends on the distance between the projector and screen. Install the projector so that the projected image fits the screen size. For details on projection distances and projected image sizes, see "Projection Distance and Lens Shift Range" (page 54).

Input select window

Computer

Video equipment

Projector
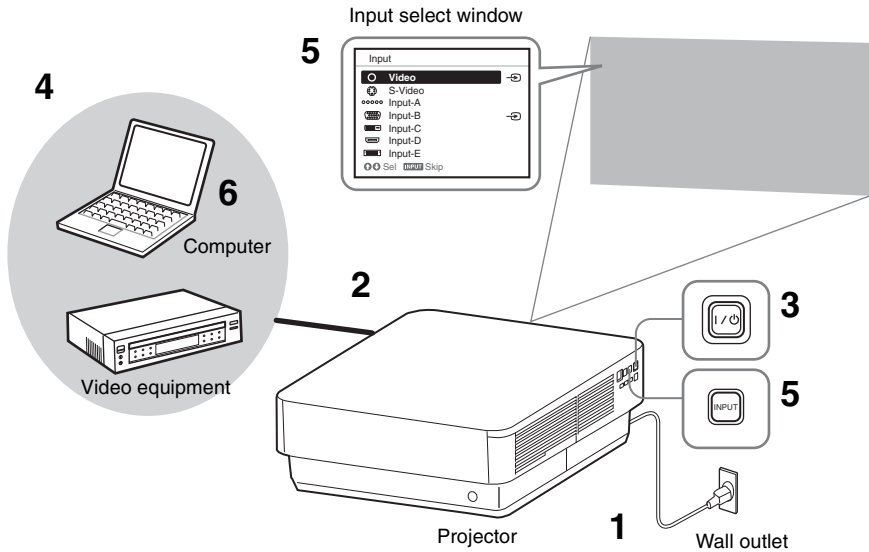
Wall outlet

1 Plug the AC power cord into a wall outlet.

2 Connect all equipment to the projector (page 8).

3 Turn on the projector.
Press the $\mathsf{I}/\mathlarge{\circlearrowleft}$ key on the projector or the **I** key on the Remote Commander.

4 Turn on the connected equipment.

5 Select the input source.
Press the INPUT key on the projector to display the input select window. Press the INPUT key repeatedly or the ✦/✦ key to select an image to be projected. The signal icon ⊸ appears on the right side in the input select window when a signal is input.

You can select the input source using Direct input select keys on the Remote Commander (page 5).
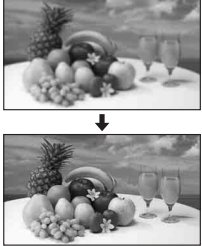
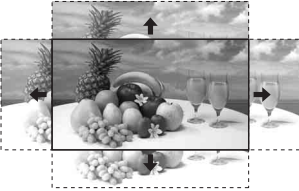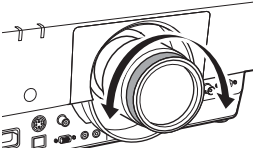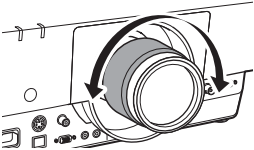**6** Switch your computer to output to external display by changing your computer's setting.
How to switch the computer to output to the projector varies, depending on the type of computer.

(Example)

Fn + F7

7 Adjust the focus, size, and position of the projected image (page 13).

Adjusting the Focus, Size, and Position of the Projected image

Focus	Size (Zoom)	Position (Lens shift)
When attaching the Electric focus lens Press the FOCUS key on the projector or the Remote Commander then press the ←/→key (or ↑/↓ key) to adjust the focus. **When attaching the Manual focus lens** Turn the Focus Ring to adjust the focus.	**When attaching the Electric zoom lens** Press the ZOOM key on the projector or the Remote Commander then press the ←/→key (or ↑/↓ key) to adjust the size. **When attaching the Manual zoom lens** Turn the Zoom Ring to adjust the size.	Press the SHIFT key on the projector or the Remote Commander then press the ↑/↓/←/→ key to adjust the position. **To return the lens to the center position of the projected image** Press the RESET key on the Remote Commander while adjusting.

Adjusting the tilt of the projector with the adjusters

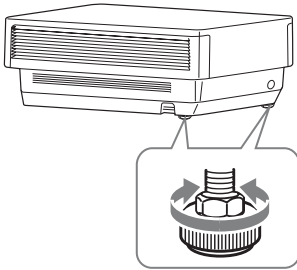When the projector is installed on an uneven surface, you can adjust using the adjusters. To correct any trapezoidal distortion of the projected image, use the Keystone feature (page 5, 26).
And you can also broaden the adjustment range by removing the nuts from the adjuster.

Notes

- Be careful not to let the projector down on your fingers.
- Do not push hard on the top of the projector with the adjuster extended. It may cause a malfunction.
- Since the Keystone adjustment is an electronic correction, the image may be deteriorated.

Displaying a pattern for adjusting an image

You can display a pattern for adjusting the projected image with the PATTERN key on the Remote Commander. Press the PATTERN key again to restore the previous image.

Turning Off the Power

1 Press the I/(¹) key on the main unit or (¹) key on the Remote Commander.

The message appears if you press the I/(¹) key on the main unit. Press it again according to the message.
The fan continues to run for a while to reduce internal heat.

2 Unplug the AC power cord from the wall outlet.

You may unplug the AC power cord before the fan stops.

Note

To move the projector just after turning it off, be sure to wait until the fan stops before unplugging the AC power cord. Unplugging the AC power cord before the fan stops may cause a malfunction.

To erase the confirmation message

The message disappears if you press any key other than the I/(¹) key on the main unit or (¹) key on the Remote Commander, or if you do not press any key for a while.

To turn off the power with the key on the main unit without a confirmation message being displayed

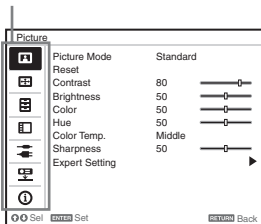Hold the I/(¹) key on the main unit pressed for a few seconds.

Using a MENU

Note

The menu displays used for the explanation below may be different depending on the model you are using.
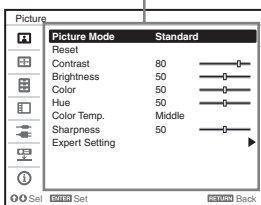
1 Press the MENU key to display the menu.

2 Select the setting menu.
Use the ♦ or ♦ key to select the setting menu then press ➡ or ENTER key.

Setting menu

Picture

	Picture Mode	Standard
	Reset	
	Contrast	80
	Brightness	50
	Color	50
	Hue	50
	Color Temp.	Middle
	Sharpness	50
	Expert Setting	▶

Sel ENTER Set   RETURN Back

3 Select the setting item.
Use the ♦ or ♦ key to select the setting menu then press ➡ or ENTER key.
To return to the selection screen of the setting menu, press the ◀ key or the RETURN key.

Setting items

Picture

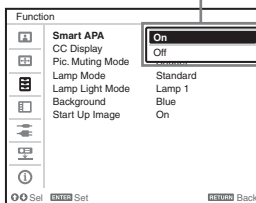|	**Picture Mode**	**Standard**
	Reset	
	Contrast	80
	Brightness	50
	Color	50
	Hue	50
	Color Temp.	Middle
	Sharpness	50
	Expert Setting	▶

Sel ENTER Set   RETURN Back

4 Make the setting or adjustment for the selected item.
Menu operation differs depending on the setting item. If the next menu window is displayed, select the item according to the operations in step **3** and then press the ENTER key to register the setting.

To return to the selection screen of the setting items, press the ◀ key or the RETURN key. Also, to reset the setting value of an item to its factory preset value, press the RESET key during setting or adjusting.

Using a pop-up menu
Press the ♦/♦/◀/➡ key to select an item. Press the ENTER key to register the setting. The previous screen is restored.

Selecting items

Function

	Smart APA	**On**
	CC Display	Off
	Pic. Muting Mode	
	Lamp Mode	Standard
	Lamp Light Mode	Lamp 1
	Background	Blue
	Start Up Image	On

Sel ENTER Set   RETURN Back

Using the setting menu
Press the ♦ or ♦ key to select the item. Press the ENTER key to register the setting. The previous screen is restored.

Picture Mode

Dynamic
Standard
Presentation

Sel   RETURN Back
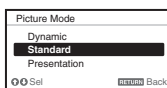
Using the adjustment menu
To increase the number, press the ♦ or ➡ key and to decrease the number, press the ♦ or ◀ key. Press the ENTER key to register the setting. The previous screen is restored.

Contrast

Min   Max
80

Adjust   RETURN Back

5 Press the MENU key to clear the menu.
The menu disappears automatically if no key is pressed for a while.

⊡ The Picture Menu

For adjusting the picture for each input signal.

Setting items	Description
Picture Mode	**Dynamic:** Emphasizes the contrast to produce a "dynamic and vivid" picture. **Standard:** Makes the picture be natural and well balanced. **Presentation**[*1]**:** Makes the picture bright to suit for a presentation.
Reset	The picture settings are initialized to their factory preset values. However, "Picture Mode" and "Custom1," "Custom2," and "Custom3" of "Color Temp." do not return to the factory preset values.
Contrast	The higher the setting, the greater the contrast. The lower the setting, the lower the contrast.
Brightness	The higher the setting, the brighter the picture. The lower the setting, the darker the picture.
Color[*2][*4]	The higher the setting, the greater the intensity. The lower the setting, the lower the intensity.
Hue[*2][*4][*5]	The higher the setting, the more greenish the picture becomes. The lower the setting, the more reddish the picture becomes.
Color Temp.[*3]	**High/Middle/Low:** The higher the temperature, the more bluish the picture. The lower the temperature, the more reddish the picture. **Custom1/ Custom2/ Custom3:** An adjusted color temperature setting can be stored for each item. The factory settings are Custom1: High, Custom2: Middle, Custom3: Low.
Sharpness[*6]	The higher the setting, the sharper the picture. The lower the setting, the softer the picture.
Expert Setting	
Film Mode[*2][*7]	**Auto:** Precisely reproduces the image from a film source to suit the original film source. Normally, select this option. **Off:** Select this option if the images are rough around the edges when "Auto" is selected.
Black Level Adj. (Adjust) [*2]	**High/Low/Off:** Emphasizes dark portions of the projected image to suit your taste.
Gamma Mode[*1]	**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. **DICOM GSDF Sim.[*8]:** Gamma setting is in accordance with the Grayscale Standard Display Function (GSDF) of the Digital Imaging and Communications in Medicine (DICOM) standards.

Notes

*1: When a computer signal is input, this option is available.
*2: When a video signal is input, this option is available.
*3: When "Picture Mode" is set to the item other than "Presentation," this option is available.
*4: When a B & W signal is input, this option is not available.
*5: When an analog TV signal is input, this option may not available, depending on the color system.
*6: When a video signal is input, this option is available.

*7: When a progressive signal is input, this option is not available.
*8: Available when a computer signal is input from the DVI-D input connector (INPUT C) and HDMI input connector (INPUT D). This projector is not to be used as a device for medical diagnosis (VPL-FH500L).

Adjustments and Settings Using a Menu

⊞ The Screen Menu

For adjusting the size, position, and aspect ratio of the projected image for each input signal.

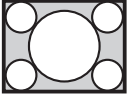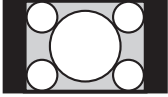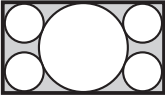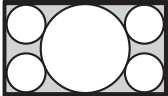| Setting items		Description
Aspect[*1]		Changes the aspect ratio of the projected image. (page 20).
	When the computer signal is input	**Full1:** Displays the image to fit the maximum projected image size without changing the aspect ratio of the input signal.
		Full2: Displays the image to fit the maximum projected image size.
		Normal: Displays the image on the center point of the projected image without changing the resolution of the input signal or enlarging the image.
	When the video signal is input	**4:3:** Displays the image to fit the maximum projected image size with an aspect ratio fixed to 4:3. **16:9:** Displays the image to fit the maximum projected image size with an aspect ratio fixed to 16:9. **Full[*2]:** Displays the image to fit the maximum projected image size. **Zoom:** Display the center point of the projected image to zoom.
V Center[*2][*3]		Adjust the whole projected image by moving up and down on the screen. As the selected number increases, the screen moves up, and as the selected number decreases, the projected image moves down.
Vertical Size[*2][*3]		Reduces or enlarges the image vertically. The projected image is enlarged as the setting increases and reduced as the setting decreases. If the subtitle of a movie, etc. cannot be seen, use this together with "V Center."
Over Scan[*3]		**On/Off:** Hides the outline of the image when set to "On." Select "On" if noise appears along the edge of the image.
Adjust Signal[*6]		Adjusts the image of signal. Use this item if the edge of the image is cut and reception is bad.
	APA[*4][*5]	Automatically adjusts the projected image to an optimum quality when you press the ENTER key.
	Phase[*4]	Adjusts the dot phase of the display pixel and the input signal. Set to the value where looks clearest.
	Pitch[*4]	The higher the setting, the wider the horizontal image elements (pitch). The lower the setting, the narrower the horizontal image elements (pitch).
	Shift[*6]	**H:** The higher the setting, the farther right the image is projected on the screen. The lower the setting, the image farther left. **V:** The higher the setting, the farther up the image is projected on the screen. The lower the setting, the image farther down.
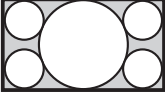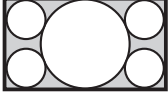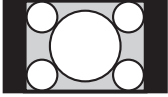
Notes

*1: • Note that if the projector is used for profit or for public viewing, modifying the original picture by switching to the aspect mode may constitute an infringement of the rights of authors or producers, which are legally protected.
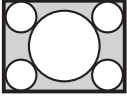   • Depending on the input signal, setting items for aspect ratio or some other setting items cannot be set in some cases, or changing the aspect ratio setting may have no effect.
   • A part of the image may be displayed in black, depending on the setting item.
*2: Available for VPL-FH500L only.

*3: Available when a video signal is input from the YPʙPʀ input connector (INPUT A), DVI-D input connector, HDMI input connector, and optional adapter.

*4: Available when a computer signal is input from the RGB input connector (INPUT A, INPUT B).

*5: If the projected image includes large amount of black portion around it, the APA function will not work properly and a part of the image may not be displayed on the screen and also optimum image cannot be obtained, depending on the type of input signal. In this case, adjust the "Phase," "Pitch," and "Shift" items manually.

*6: Available when a computer signal is input from the RGB input connector (INPUT A, INPUT B) or a video signal is input from the YPʙPʀ input connector (INPUT A). This option is available only when "Aspect" is set to "Zoom."

Adjustments and Settings Using a Menu

Aspect

VPL-FH500L

	Input signal	Recommended setting value and projected image
Computer signal	(4:3)	(Full1)[*1][*2]
	(16:9)	(Full1)[*1][*2]
	(16:10)	(Full1)[*1]
Video signal	(4:3)	(4:3)[*3][*5]
	(16:9)	(16:9)[*4][*5]

*1: If you select "Normal," the image is projected in the same resolution as the input signal without changing the aspect ratio of the original image.

*2: If you select "Full2," the image is projected to fit the projected image size, regardless of the aspect ratio of the image.

*3: Depending on the input signal, the projected image may be projected as illustrated below. In this a case, select "16:9."

*4: Depending on the input signal, the image may be projected as illustrated below. In this a case, select "Zoom."

*5: If you select "Full," the image is projected to fit the projected image size, regardless of the aspect ratio of the image.

VPL-FX500L

	Input signal	Recommended setting value and projected image
Computer signal	(4:3)	(Full1)[*1]
	(16:9)	(Full1)[*1 *2]
	(16:10)	(Full1)[*1 *2]
Video signal	(4:3)	(4:3)[*3]
	(16:9)	(16:9)[*4]

*1: If you select "Normal," the image is projected in the same resolution as the input signal without changing the aspect ratio of the original image.

*2: If you select "Full2," the image is projected to fit the projected image size, regardless of the aspect ratio of the image.

*3: Depending on the input signal, the projected image may be projected as illustrated below. In this a case, select "16:9."
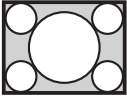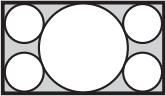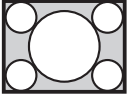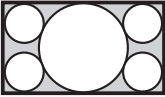
*4: Depending on the input signal, the image may be projected as illustrated below. In this a case, select "Zoom."

▦The Function Menu

The Function menu is used for setting various functions of the projector.

Setting items	Description
Smart APA	**On/Off**; When set to "On," executes APA automatically when a signal is input.[*1]
CC Display	**CC1/CC2/CC3/CC4/Text1/Text2/Text3/Text4:** Select the closed caption service (Captions or Text). **Off:** Closed caption does not appear.
Pic.Muting Mode	**Shutter:** Close the shutter when the PIC MUTING key is pressed. **Image:** Cuts off the projected image when the PIC MUTING key is pressed.
Lamp Mode	**High/Standard:** When set to "High," the image becomes brighter, and power consumption becomes higher.
Lamp Light Mode	The projector has a function for switching between the two lamps. When one lamp is turned off, the other is turned on automatically to avoid interrupt of operation. **Auto:** Lights the lamp that is set to be used for shorter duration than the other when starting up the projector. **Lamp 1/Lamp 2:** Lights the selected lamp. If the selected lamp is turn off, the other is turned on automatically. It is recommended to select this item when you cannot replace the lamp immediately.
Background	**Black/Blue:** Selects the background color of the projected image when no signal is input.
Start Up Image	**On/Off:** When set to "On," the Start Up Image is displayed on the screen upon startup of the projector.

Note

*1: Executes APA when a computer signal is input via the RGB input connector (INPUT A, INPUT B).

⬚ The Operation Menu

The Operation Menu is used for setting for the operations by using the menu or the Remote Commander.

Setting items	Description
Language	Selects the language used in the menu and on-screen displays.
Menu Position[*1]	**Bottom Left/Center:** For selecting the position of the menu displayed on the projected image.
Status	**On:** All on-screen statuses are enabled. **Off:** Turn off the on-screen displays except for the menus, message when turning off the power, and warning messages.
IR Receiver	**Front & Rear/Front/Rear:** Selects the remote control detectors (IR Receiver) on the front and rear of the projector.
ID Mode	**All/1/2/3:** Assigns an ID number to the projector. When set to "All," you can control the projector with the Remote Commander independently of the assigned ID Mode. Refer also to "ID MODE 1/2/3 switch" of the Remote Commander on page 7.
Security Lock[*2]	**On/Off:** This function enables restriction of the projector to authorized users by password. The setting procedures for security locking are as follows: **1** Select "On" then press the ENTER key to display the setting menu. **2** Input the password with the MENU, ↑/↓/←/→, and ENTER keys. (The default password setting is "ENTER, ENTER, ENTER, ENTER.") **3** Input a new password with the MENU, ↑/↓/←/→, and ENTER keys. **4** Enter the password again to confirm. Enter the password when you turn on the projector after disconnecting and reconnecting the AC power cord. When it is set to "Off," you can cancel the security lock. You are required to input the password again. If you fail to enter the correct password after three consecutive times, the projector cannot be used. In this case, press the I/⏻ key to go Standby mode then turn on the power again.
Panel Key Lock	**On/Off:** When set to "On," locks all the control panel keys of the projector. However, you can enable operation by performing the following even when "Panel Key Lock" is set to "On." • Press and hold the I/⏻ key for approximately 10 seconds during Standby mode. → The projector turns on. • Press and hold the MENU key for approximately 10 seconds during power on. → "Panel Key Lock" is set to "Off" and enables operation of all control panel keys on the projector.
Lens Control	**On/Off:** When set to "On," you can adjusts the lens (Focus, Zoom, and Shift) from the Remote commander or the projector. To prevent unintentional operation, set it to "Off" after adjusting the lens.

> **Notes**

*1: Available for VPL-FH500L only
*2: You will not be able to use the projector if you forget your password. If you call qualified Sony personnel because you have forgotten the password, you will be asked to verify the projector's

serial number and your identity. (This process may differ in other countries/regions.) Once your identity has been confirmed, we will provide you with the password.

⛓The Connection/Power Menu

The Connection/Power menu is used for setting for the connections and power.

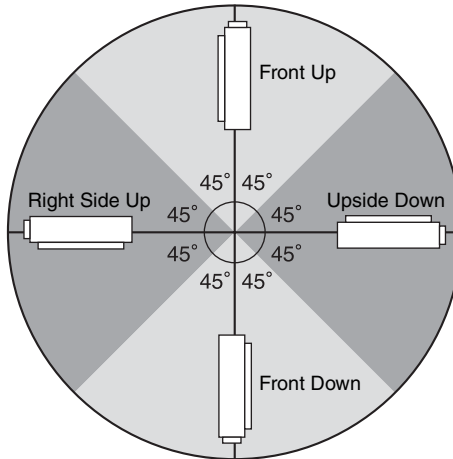| Setting items	Description
Network Setting	
IP Address Setup	**Auto (DHCP):** The IP address is assigned automatically from the DHCP server such as a router. **Manual:** To specify the IP Address manually.
IP Address/ Subnet Mask/ Default Gateway/Primary DNS/Secondary DNS	When "Manual" is selected for "IP Address Setup," select the item with the ➡ or ⬅ key and input the value with ⬇ or ⬆ key. When all items are entered, select Apply then press the ENTER key. The entered settings will be registered.
Input-A Signal Sel.	**Auto/Computer/Video GBR/Component:** When set to "Auto," selects the type of video signal input automatically when "Input-A" is selected with the INPUT key.[1]
Color System	**Auto/NTSC3.58/PAL/SECAM/NTSC4.43/PAL-M/PAL-N:** When set to "Auto," selects the color system automatically when "S Video" or "Video" is selected with the INPUT key.[1]
Standby Mode[2]	**Standard/Low:** When set to "Low," lowers power consumption in Standby mode.
Power Saving Mode	**Lamp Cutoff:** The lamp turns off automatically and power consumption is reduced if no signal is input for 10 minutes. The lamp lights again when a signal is input or any key is pressed. In Lamp Cutoff, the ON/STANDBY indicator lights in orange (page 32). **Standby:** The power will be turned off automatically and the projector goes to Standby mode if no signal is input for 10 minutes. **Off:** The Power Saving Mode is released.
Direct Power On	**On/Off:** When set to "On," you can turn the power on without going to Standby mode when the AC power cord is connected to a wall outlet. You can also unplug the AC power cord without going to Standby mode when you turn off the projector. You may unplug the AC power cord without going to Standby mode.

Notes

*1: The image may not be adjusted properly depending on the type of input signal. In such a case, adjust it manually to suit to the connected equipment.
*2: When "Standby Mode" is set to "Low," the network and network control function cannot be operated while the projector is in standby mode.

🖳 The Installation Menu

The Installation menu is used for installing the projector.

Setting items	Description
Image Flip	**HV/H/V/Off:** Flips the projected image horizontally and/or vertically according to the installation method.
Installation Attitude	**Right Side UP/Upside Down/Front Up/Front Down:** Change the cooling setting to suit to the installation attitude. Continuing to use the wrong setting may affect component reliability.

High Altitude Mode[*1]	**On/Off:** Set to "On" when using the projector at an altitude of 1,500 m or higher. Continuing to use the wrong setting may affect component reliability.
Screen Aspect[*2]	**16:10/16:9/4:3:** For switching the display area to suit to the screen.
V Keystone[*3 *4]	The higher the setting, narrower the top of the projected image. The lower the setting, the narrower the bottom.

Panel Alignment[*2 *5]	This feature allows you to adjust the gaps in the color of characters or the picture.
	When set to "On," "Adjust Color" and "Pattern Color" can be assigned and adjusted.
	Adjust Item: Selects how to make adjustments from below.
	  Shift: Shifts the whole picture and makes adjustments.
	  Zone: Selects the desired range and makes adjustments.
	Adjust Color: Assigns the desired color to adjust the gaps in color. Select "R" (Red) or "B" (Blue) to make adjustments based on "G" (Green).
	Pattern Color: Select "R/G" (Red and Green) or "R/G/B" (White, all colors) when "Adjust Color" is "R" (Red). Select "B/G" (Blue and Green) or "R/G/B" (White, all colors) when the "Adjust Color" is "B" (Blue).
	Adjust: The shift adjustment and zone adjustment of the color selected in "Adjust Color" can be made with ↑/↓/←/→ buttons.

Setting items	Description
Color Matching [*2][*6]	**Adjust/Reset:** For correcting the brightness and color of the whole projected image manually from the signal level in six steps.

Notes

*1: Do not use the projector at an altitude of 2,700 m or higher.
*2: Available for VPL-FH500L only
*3: Depending on the position adjusted with the lens shift feature, the aspect ratio of the image may change from the original or projected image may be distorted with Keystone adjustment.
*4: Since the Keystone adjustment is an electronic correction, the image may be deteriorated.
*5: Depending on the adjustment value of "Panel Alignment," the color and aspect ratio may be changed.
*6: The brightness and color of the projected image may not match completely, even after you adjust "Brightness" and "Color."

Adjustments and Settings Using a Menu

ⓘ The Information Menu

The Information menu enables you to confirm various information on the projector, such as the total usage hours of a lamp.

Items	Description
Model Name	Displays the model name.
Serial No.	Displays the serial number.
fH / fV (horizontal frequency/vertical frequency)[*1]	Displays the horizontal frequency/vertical frequency of the current input signal.
Signal type	Displays the type of the current input signal.
Lamp Timer	Indicates the usage time and status of a lamp. (◆❶◻: Lamp 1/ ◆❷◻: Lamp 2) ◆❶◻ ◆❷◻: The lamp is in lights. ◆❶◻ ◆❷◻: The lamp does not light. ◆❶◻ ◆❷◻: The lamp is in abnormal status.

Note

*1: These items may not be displayed depending on the input signal.

Using Network Features

Connection to the network allows you to operate the following features:
- Checking the current status of the projector via a Web browser.
- Remotely controlling the projector via a Web browser.
- Receiving the Mail Report for the projector.
- Making the network settings for the projector.
- Supports network monitoring and control protocol (Advertisement, PJ Talk, PJ Link, SNMP, AMX DDDP [Dynamic Device Discovery Protocol]).

Notes

- The menu displays used for the explanation below may be different depending on the model you are using.
- Supported Web browsers are Internet Explorer 6/7/8.
- The menu displays only English.
- If the browser of your computer is set to [Use a proxy server] when you have access to the projector from your computer, click the check mark to set accessing without using a proxy server.

Displaying the Control Window of the Projector with a Web Browser

1 Connect the LAN cable.

LAN cable
(straight type)
(not supplied)

LAN Connector

LAN

Hub or router, etc

2 Set the network settings for the projector using "Network Setting" on the Connection/Power menu (page 25).

3 Start a web browser on the computer, enter the following in the address field, then press the Enter key on your computer.
http://xxx.xxx.xxx.xxx
(xxx.xxx.xxx.xxx: IP address for the projector)

You can confirm the IP address of the projector under "Network Setting" on the Connection/Power menu.

The following window appears in the Web browser:

Once you make the network settings, you can open the Control window only by performing step **3** of this procedure.

How to operate the Control window

Switching the page

Click one of the Page Switching buttons to display the desired setting page.
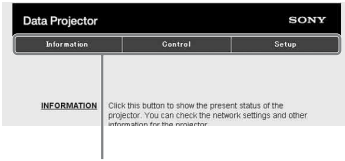
Page Switching buttons

Setting the access limitation

You can limit a user for accessing any particular page.

Administrator: Allowed access to all pages

User: Allowed access to all pages except the Setup page

Set under [Password] of the Setup page. When you access the Setup page for the first time, enter "root" for user name and enter nothing for password.
The name of the administrator is preset to "root."
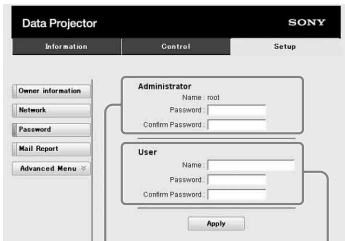
Entry area for [Administrator]

Entry area for [User]

When you change the password, input a new password after deleting the password (*****) that was set.

> **Note**
>
> If you forget your password, consult with qualified Sony personnel.

Confirming the Information regarding the Projector

You can confirm the current settings for the projector on the Information page.
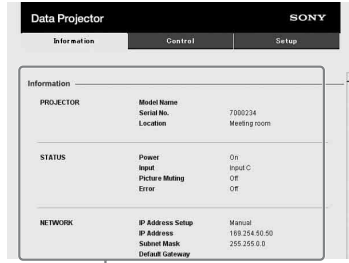
Information area

Operating the Projector from a Computer

You can control the projector from the computer on the Control page.
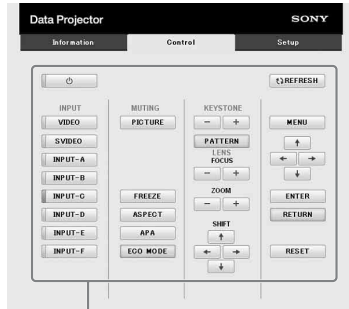
Operation area

The functions of the keys shown in the operation area are the same as those of the keys on the supplied Remote Commander.

Using the Mail Report Function

Set the Mail Report function on the Setup page.
Entered values will not be applied unless you click on [Apply].

1 Click on [Owner information] to enter the owner information recorded in the Mail Report.
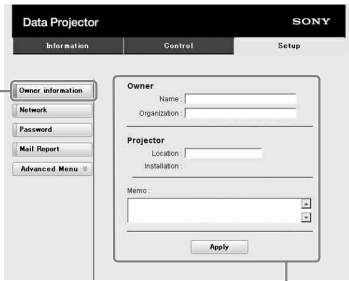
Owner information button

2 Set the timing of the Mail Report.
Click on [Mail Report] to open the Mail Report page.
Lamp Reminder (Lamp1): Set the timing for lamp replacement. To reset Lamp Reminder, replace the lamp on the projector (page 36).
Maintenance Reminder: Set the timing for maintenance. To reset Maintenance Reminder, check the RESET check box and then click on [Apply].

Mail Report button
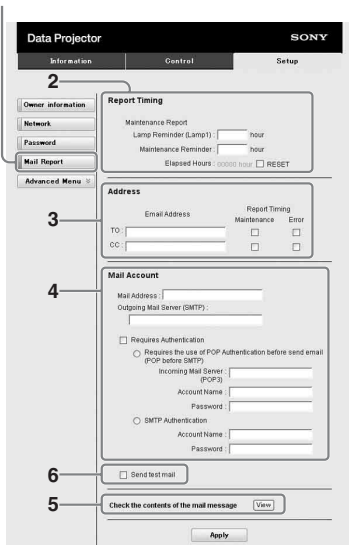
3 Enter the outgoing e-mail address in the Email Address box then check the Report Timing check box of the Mail Report to be sent.

4 Set the mail account for sending mail reports.
Mail Address: Enter the e-mail address.
Outgoing Mail Server (SMTP): Enter the address of outgoing mail server (SMTP).
Required Authentication: Check this check box if authentication is required for sending e-mail.
Requires the use of POP Authentication before send email (POP before SMTP): Check this check box to arrange for POP authentication to be performed before sending e-mail.
Incoming Mail Server (POP3): Enter the address of the incoming-mail server (POP3) to be used for POP authentication.
Account Name: Enter the mail account.
Password: Enter the password.
SMTP Authentication: Check this check box to arrange for SMTP authentication to be performed before sending e-mail.
Account Name: Enter the mail account.
Password: Enter the password.

5 Confirm the contents of the Mail Report.
When you click on [View] is pressed, the contents of the Mail Report are displayed.

6 Send the test mail.
Check on the Send test mail check box then click on [Apply] to send your test mail to the e-mail address you set.

Notes

• The mail report function is not available because the network which Outbound Port25 Blocking is used cannot be connected to the SMTP server.
• You cannot use the following characters to enter the characters in the text box: " ' ", " " ", " \ ", " & ", " < ", " > "

Indicators

The indicators allow checking the status and notify you of abnormal operation of the projector. If the projector exhibits abnormal status, address the problem in accordance with the table below.

ON/STANDBY indicator

Status	Meaning/Remedies
Lights in red	The projector is in Standby mode.
Flashes in green	• The projector is ready to operate after having been turned on. • The lamp cools after the projector is turned off.
Lights in green	The projector's power is on.
Lights in orange	The projector is in Power Saving Mode (lamp cut off).
Flashes in red	The projector is in abnormal status. Symptoms are indicated by number of flashes. Address the problem in accordance with the following. If the symptom is shown again, consult with qualified Sony personnel.
Flashes twice	The internal temperature is unusually high. Check the items below. • Check to see if nothing is blocking the ventilation holes. • Check to see if the air filter is not clogged. • Check if "Installation Attitude" on the Installation menu is correctly selected.
Flashes six times	Unplug the AC power cord from a wall outlet. After checking that the ON/STANDBY indicator goes out, plug the power cord to a wall outlet again then turn on the projector.
Other number of flashes	Consult with qualified Sony personnel.

LAMP/COVER indicator

Status	Meaning/Remedies
Flashes in red	Symptoms are indicated by number of flashes. Address the problem in accordance with the following.
Flashes twice	The lamp cover or air filter unit are not attached securely.
Flashes three/four/ five times	The temperature of a lamp is high (Three times: only Lamp 1, Four times: only Lamp 2, Five times: Lamp 1 and Lamp 2). Turn off the power and wait for the lamp to cool then turn on the power again. If the symptom is shown again, the lamp may be burnt out. In such a case, replace the lamp with a new one (page 36).
Flashes six times	The lens is not mounted on the projector (page 40).

Messages List

When any of the messages listed below appears on the projected image, address the problem in accordance with the table below.

Message	Meaning/Remedy	Page
High temp.! Lamp off in 1 min.	Check the items below. • Check to see if nothing is blocking the ventilation holes. • Check to see if the air filter is not clogged. • Check if "Installation Attitude" on the Installation menu is correctly selected.	3, 26, 38
Frequency is out of range!	Change the output setting of the connected equipment to one for signals supported by the projector.	51
Please check Input-A Signal Sel.	Set "Input-A Signal Sel." to "Auto" or select the input signal type to suit to the input signal.	25
Please replace Lamp 1 and Filter.	Replace the lamp with a new one and replace the air filter. The message appears whenever you turn on the power until you replace the lamp.	36, 38
Please replace Lamp 2 and Filter.		
Please replace Lamp 1, Lamp 2 and Filter.		
Projector temperature is high. High Altitude Mode should be "On" if the projector is being used at high altitude.	At an altitude of 1,500 m or higher, if you are not using the projector, check the items below. • Check that nothing is blocking the ventilation holes. • Check that the air filter is not clogged. • Check if "Installation Attitude" on the Installation menu is correctly selected.	3, 26, 38
Not applicable!	Invalid key pressed.	5
The panel keys are locked!	"Panel Key Lock" is set to "On."	23
Lens Control is locked!	"Lens Control" is set to "Off."	23
Error occurred on Lamp1. Lamp 2 is lit.	An error occurred in the lamp and another lamp is lit.	–
Error occurred on Lamp 2. Lamp 1 is lit.		
The shutter did not work.	Consult with qualified Sony personnel.	–

Troubleshooting

Before asking to have the projector repaired, try to diagnose the problem, following the instructions below.

Symptom	Remedy	Page
The power is not turned on.	Check if the AC power cord is firmly connected.	–
	When the "Panel Key Lock" is set to "On," you cannot turn on the projector using the I/⏻ key on the projector.	23
	If the lamp, lamp cover, or air filter unit is not attached securely, the projector cannot be turned on.	36, 38
No image.	Check if the connecting cable is connected to external equipment properly.	8
	Check if the computer signal is set for output to an external monitor. If you set your computer, such as a notebook computer, to output the signal to both your computer's display and an external monitor, the picture of the external monitor may not appear properly. Set your computer to output the signal to only an external monitor.	12
	Check if the input source is correctly selected.	12
	Check if the picture is muted.	6
On-screen display does not appear.	The on-screen display does not appear when "Status" in the Operation menu is set to "Off."	23
The aspect ratio of the display is not right/the image is displayed smaller /a portion of image does not appear.	The image may not be displayed correctly with an input signal the projector cannot interpret correctly. In such a case, set "Aspect" manually.	18, 20
	Check if "Screen Aspect" is correctly selected.	26
The image is a trapezoid.	The images become trapezoidal because of the projection angle. In such a case, you can correct the trapezoidal distortion, using a Keystone feature.	5, 26
Edges of the image are cut off or dark.	If you use the Lens Shift function with a setting outside the recommended range, edges of the image may be cut off or appear dark. Use a setting within the normal range for the Lens Shift function.	54
The image is dark/too bright.	The settings for "Brightness," "Contrast," and "Lamp Mode" affect brightness of the image. Check if the value is appropriate.	16, 22
	The image will be dark when the lamp is burnt out. Check "Lamp Timer," and replace the lamp with a new one if necessary.	28
The image is not clear.	Check if the projector is in focus.	13
	The picture will not be clear if condensation has accumulated on the lens. In such a case, let the projector sit for about two hours with the power on.	–
The image is noisy.	Check if the connecting cable is connected to external equipment properly.	–

Symptom	Remedy	Page
The Remote Commander does not work.	Check that the batteries are installed correctly.	–
	Check that the batteries are not exhausted.	–
	Check if the "ID Mode" of the projector corresponds to that of the Remote Commander.	7, 23
	Check the setting for "IR Receiver."	23
The fan is noisy.	The sound from the fan is often greater than normal to cool the lamp in the following cases. • When "Lamp Mode" is set to "High." • The projector is in at high altitude ("High Altitude Mode" is set to "On"). • Temperature is very high.	22, 26
	If the ventilation holes are blocked, the internal temperature of the projector rises and the fan noise becomes larger.	3

Others

Replacing the Lamp

Replace the lamp with a new one if a message displayed on the projected image or the LAMP/COVER indicator notifies you to replace the lamp (pages 32, 33).
The projector incorporates two lamps. Before replacement, check which lamp is to be replaced (page 32).
Use an LMP-F330 projector lamp (not supplied) for replacement.

Caution
- The lamp remains hot after the projector is turned off. **If you touch the lamp, you may burn your finger. When you replace the lamp, wait for at least an hour after turning off the projector for the lamp to cool sufficiently.**
- Do not allow any metallic or inflammable objects into the lamp replacement slot after removing the lamp, otherwise it may cause electrical shock or fire. Do not put your hands into the slot.
- **If the lamp breaks, contact qualified Sony personnel. Do not replace the lamp yourself.**
- When removing the lamp, be sure to pull it out straight, by holding it by the specified part. If you touch a part of the lamp other than the specified part, you may be burned or injured. If you pull out the lamp while the projector is tilted, the pieces may scatter if the lamp breaks any may cause injury.

Before starting
The projector incorporates two lamps. Check the number of flashes of the LAMP/COVER indicator. This enables you to be informed of a lamp to be replaced.
Flashes three times: Replace Lamp 1.

Flashes four times: Replace Lamp 2.

Flashes five times: Replace both Lamp 1 and Lamp 2.

1 Turn off the projector, and disconnect the AC power cord from a wall outlet.

2 When the lamp has cooled sufficiently, loosen the two screws of the lamp cover on the side panel (❶), slide the lamp cover slightly to the rear by the tabs (❷), then open the lamp cover (❸).

Lamp cover

Screws   Tab
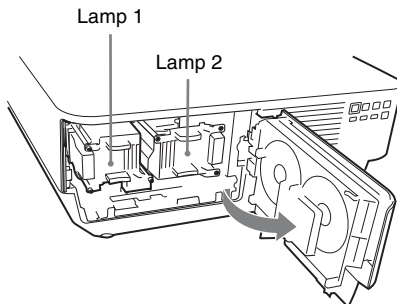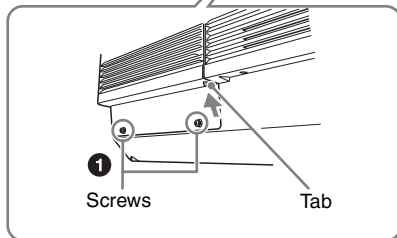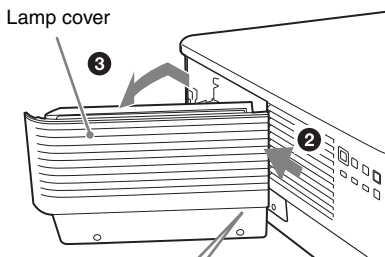
Lamp 1

Lamp 2

3 Loosen the three screws on the lamp then pull out the lamp by its grab.
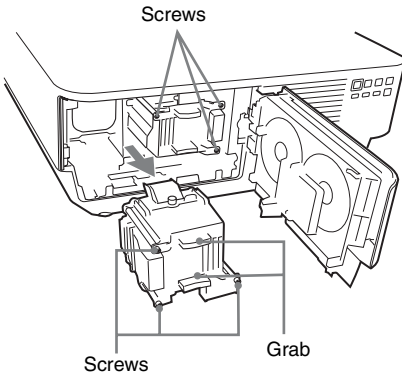
Screws

Screws   Grab

Note

Lamp 1 and Lamp 2 are of the same type. They are installed in opposite vertical orientation to each other. When removing, note the orientation of each lamp.

4 Insert the new lamp all the way in until it is securely in place. Tighten the three screws.

5 Close the lamp cover and tighten the two screws.

Notes

• The lamp cover cannot be closed if the screws that secure the lamps are loosened.
• Be sure to install the lamp and lamp cover securely as it was. If not, the projector cannot be turned on.

When lamp replacement is completed

Replace the air filter cartridge (page 38).

Disposal of the used lamp
For the customers in the USA
Lamp in this product contains mercury. Disposal of these materials may be regulated due to environmental considerations. For disposal or recycling information, please contact your local authorities or the Telecommunications Industry Association (www.eiae.org).

Others

Replacing the Air Filter Cartridges

After replacing the lamp, replace the air filter cartridges.
When replacing the air filter cartridges, replace all 4 cartridges supplied with the replacement lamps.

Caution

If you neglect to replace the air filter cartridges, dust may accumulate, clogging it. As a result, the temperature may rise inside the unit, leading to a possible malfunction or fire.

1 Make sure the AC power cord is disconnected.

2 Slide the air filter cover slightly to the rear while holding the lock button to remove the air filter cover.
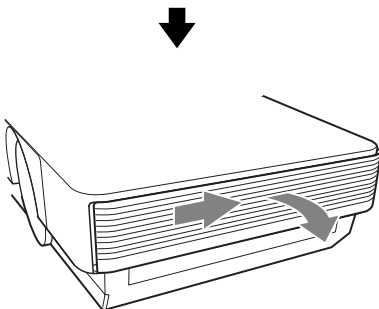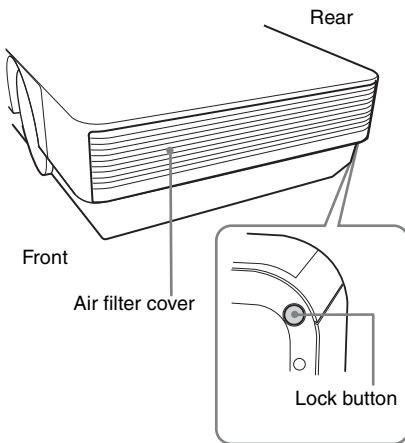
3 Pull out the air filter cartridge straight by the grab of the air filter unit while pushing out one tab at a time on both sides.
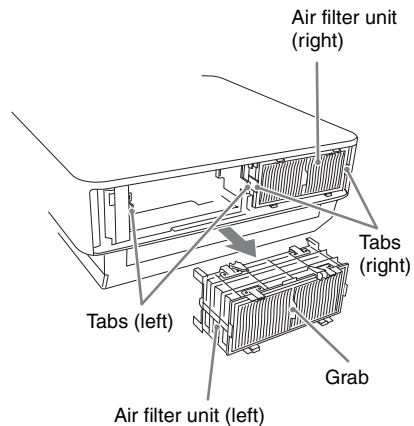
4 Remove the four air filter cartridges (two in each air filter unit) from the air filter units and attach new cartridges to the units.

When attaching the air filter cartridge to the cartridge holder, push the air filter cartridge in fully until the tabs of the cartridge holder click (4 points each air filter cartridge, a total of 8 points).
The two air filter units are installed in the right and left positions.

Tabs

Air filter cartridge

Tabs

Air filter cartridge

Cartridge holder

5 Return the air filter units to the projector.

The top and bottom of the air filter unit have different shapes, as illustrated below. Be careful of orientation when installing them.

Tabs (left)

Tabs (right)

Bottom (side with a grooved section)

Slide the air filter unit in fully until the tabs on the projector click to hold it in place (2 points each air filter unit, a total of 4 points).
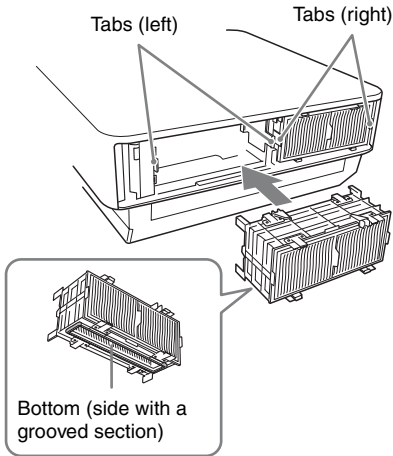
6 Close the air filter cover.

Note

Be sure to attach the air filter unit firmly; the power cannot be turned on if it is not closed securely.

Attaching/Removing the Projection Lens

Notes
- Turn off the projector and disconnect the AC power cord from a wall outlet before you remove/attach the projection lens.
- Be careful not to drop the projection lens.
- Avoid removing/attaching the lens with the projector installed suspended from a ceiling.
- Avoid touching the lens surface.
- For usable projection lenses and a lens adapter, see "Specifications" (page 46).

Attaching

1 Loosen the four screws that secure the front panel to remove the front panel in the direction of the front.

Front panel

Screws

Screws
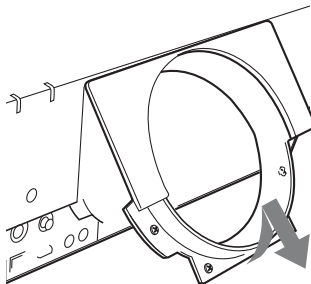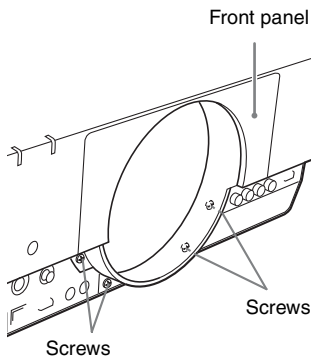
2 Make the preparations required for the projection lens you are using.

VPLL-FM22/ZM32/ZM42/ZM102/Z4011:

A Removing the compensating glass (page 41)

VPLL-FM21[*1]/ZM31[*1]/ZP41/FM22/ZM32/ZM42/ZM102:

**B** Attaching the projection lens adapter (page 42)

VPLL-ZM101[*1]:

B Attaching the projection lens adapter (page 42)
C Attaching the shading sheet (page 44)

VPLL-4008/Z4011/Z4015/Z4019/Z4025/Z4045

There is no need to attach the projection lens adapter to the projector.

3 Insert the four screws (supplied with the projector) to the flange section of the projection lens.

Flange section
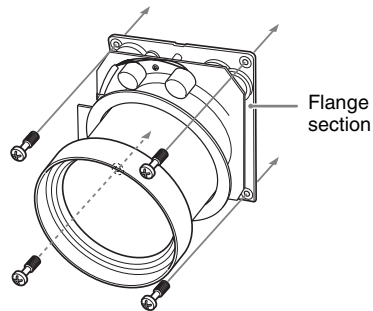
4 Align the connectors on the projector with those on the projection lens then insert the lens all the way in until it is securely in place.

Connector section

Connector section
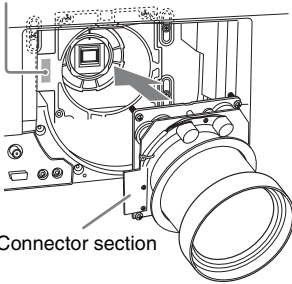
5 Tighten the four screws attached in step **3**.

6 Replace the front panel and fasten it with the four screws.

Ⓐ VPLL-FM22/ZM32/ZM42/ZM102/Z4011: Removing the compensating glass

Before attaching the projection lens to the projector, it is required to remove the compensating glass from the lens mounting part of the projector.

To remove the compensating glass

Turn the compensating glass counterclockwise as illustrated then pull it out towards you.
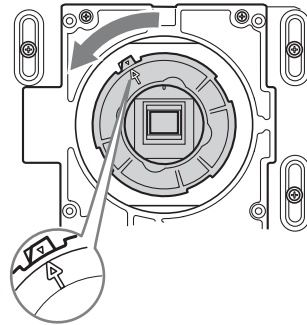
To attach the compensating glass

Insert the compensating glass with the arrow mark on the glass aligned with the mark (∇) on the lens mounting part of the projector, and turn the glass clockwise.

Others
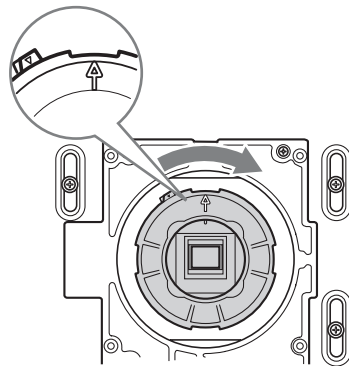
[B] VPLL-FM21[*1]/ZM31[*1]/ZP41/ FM22/ZM32/ZM42/ZM101[*1]/ZM102: Attaching the projection lens adapter

Before attaching the projection lens to the projector, it is required to attach the lens adapter to the projection lens.

Insert the projection lens into the lens adapter as illustrated and fasten it with the four screws supplied with the lens adapter.

For the VPLL-FM21[*1]/ZM31[*1]/ZP41/ ZM101[*1]

Use the PK-F500LA1 lens adapter.

PK-F500LA1

Slide until it clears the gap
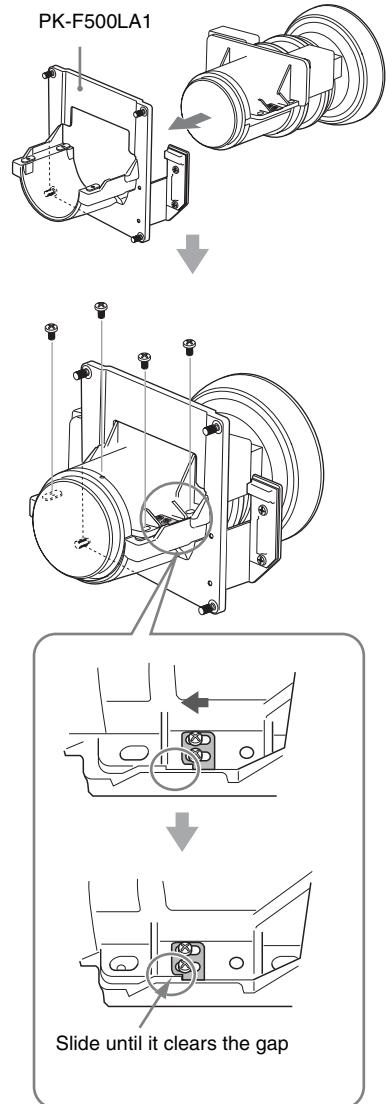
When mounting a VPLL-ZP41

Engage the two connectors between the lens adapter and the projection lens, as illustrated.
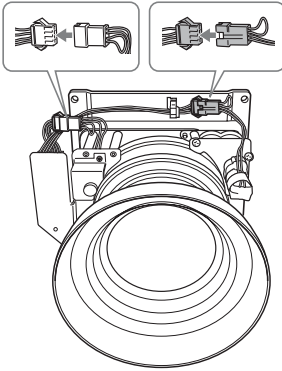
For the VPLL-FM22/ZM32/ZM42/ZM102

Use the PK-F500LA2 lens adapter.

PK-F500LA2

Slide until it clears the gap
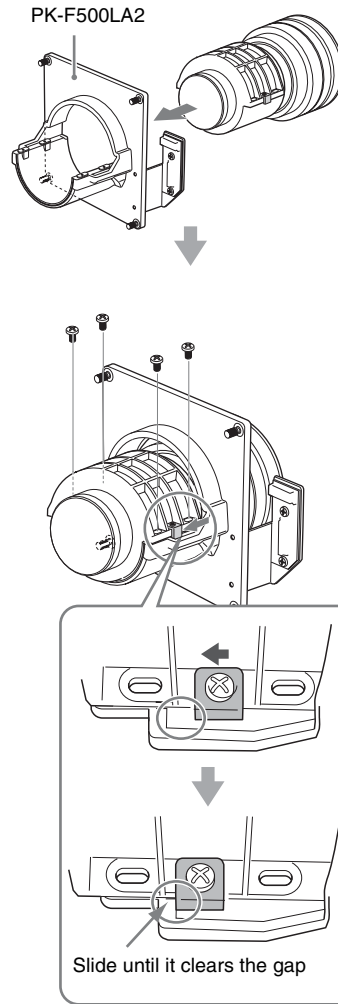
C VPLL-ZM101*[1]: Attaching the shading sheet

Before attaching the projection lens to the projector, it is required to attach the shading sheet supplied with the lens adapter after attaching the lens adapter.

1 Remove the two screws from the lens adapter.
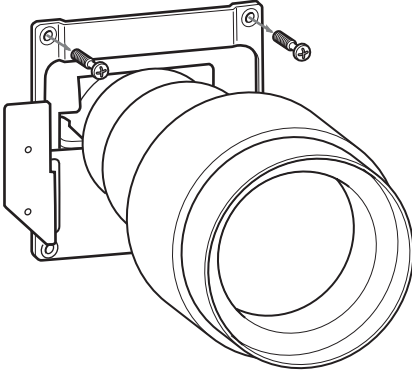
2 Fit the shading sheet to the projection lens as illustrated and fasten it to the lens with the two screws.

Shading sheet
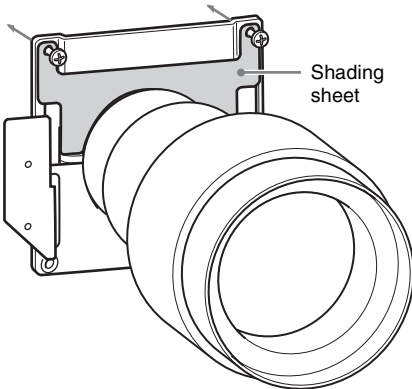
Removing

1 Loosen the four screws that secure the front panel (1), and remove the front panel, pulling it forward (2).

2 Loosen the four screws that secure the projection lens then pull it out straight. When loosening the screws, support the lens with your hands so that it will not fall.
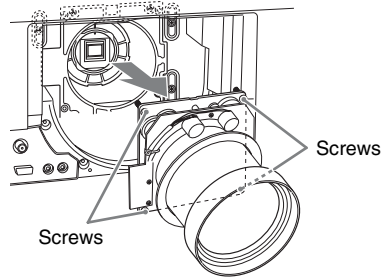
Screws

Screws

Note

If the lens was shifted with lens shift adjustment, the screws may be too constricted to loosened. In such a case, adjust to shift the lens to the center position (page 13).

*1: VPL-FX500L only.

Installing the Optional Adapter

You can install the optional adapter in INPUT E of the connector panel section of the projector.

1 Turn off the power of the projector and disconnect the power cable.

2 Slide the slot cover for the optional adapter attached to the connector panel to the right and remove it.

Slot cover
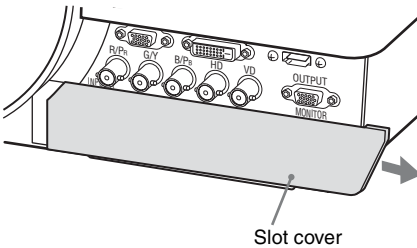
3 Insert the optional adapter as far as it goes.

Example: BKM-FW16 HD-SDI/SDI Input Adaptor (not supplied)
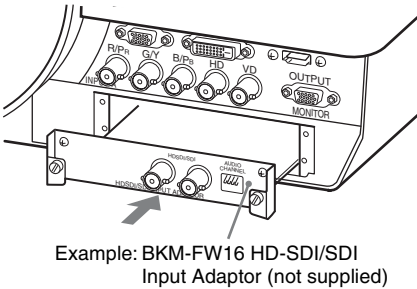
4 Tighten the two screws on the optional adapter.

Others

Specifications

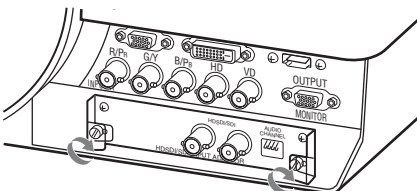| Item		Description
Model name		**VPL-FH500L/VPL-FX500L**
Display system		3 LCD system
Display device	Size of effective display area	VPL-FH500L: 0.95" (24.1 mm) × 3, Aspect ratio 16:10 VPL-FX500L: 0.99" (25.0 mm) × 3, Aspect ratio 4:3
	Number of pixels	VPL-FH500L: 6,912,000 pixels (1920 × 1200 × 3) pixels VPL-FX500L: 2,359,296 pixels (1024 × 768 × 3) pixels
Light source		High-pressure mercury lamp, 330 W type
Light output		7000 lm[*1] (when "Lamp Mode" is set to "High")
Displayable scanning frequency[*2]		Horizontal: 14 kHz to 93 kHz, Vertical: 47 Hz to 93 Hz
Display resolution	Computer signal inputt	Maximum display resolution: 1920 × 1200 dots Panel display resolution: VPL-FH500L: 1920 × 1200 dots VPL-FX500L: 1024 × 768 dots
	Video signal input	NTSC, PAL, SECAM, 480/60i, 576/50i, 480/60p, 576/50p, 720/60p, 720/50p, 1080/60i, 1080/50i, 1080/60p, 1080/50p 1080/48i[*3], 1080/24p[*3], 1080/30p[*3]
Color system		NTSC$_{3.58}$, PAL, SECAM, NTSC$_{4.43}$, PAL-M, PAL-N, PAL60
Computer and video signal input/output	INPUT A	**RGB/Y$_P$B$_P$R input connector:** 5BNC female, G with sync/Y: 1 Vp-p ± 2 dB, sync negative, 75 ohms terminated, RGB/P$_B$P$_R$: 0.7 Vp-p ± 2 dB, 75 ohms terminated, Sync signal: TTL level high impedance, positive/negative
	INPUT B	**RGB input connector:** Mini D-sub 15-pin female, RGB: 0.7 Vp-p ± 2 dB, 75 ohms terminated, Sync signal: TTL level high impedance, positive/negative
	INPUT C	**DVI-D input connector:** DVI-D 24-pin (Single link), DVI 1.0 compliant, HDCP support
	INPUT D[*3]	**HDMI input connector:** Digital RGB/Y$_P$B$_P$R
	INPUT E[*3]	**HDSDI input connector[*3]:** For an optional adapter
	S VIDEO IN	**S video input connector:** Mini DIN 4-pin, Y: 1 Vp-p ± 2 dB, sync negative, 75 ohms terminated, C: (burst signal) 0.286 (NTSC)/0.3 (PAL/SECAM) Vp-p ± 2 dB, 75 ohms terminated
	VIDEO IN	**Video input connector:** BNC, 1 Vp-p ± 2 dB, sync negative, 75 ohms terminated

Item		Description
Model name		**VPL-FH500L/VPL-FX500L**
Computer and video signal input/output	OUTPUT	**MONITOR output connector:** Mini D-sub 15-pin female, G with sync/Y: 1 Vp-p ± 2 dB, sync negative, 75 ohms terminated, RGB/PBPR: 0.7 Vp-p ± 2 dB, 75 ohms terminated, Sync signal: HD, VD 4V (open), 1 Vp-p (75 ohms), positive/negative
Control signal input/output		**RS-232C connector:** D-Sub 9 pin female
		LAN connector: RJ45, 10BASE-T/100BASE-TX
		CONTROL S input connector (DC power supply): Stereo mini jack, 5 Vp-p, Plug in power DC 5 V
		CONTROL S output connector: Stereo mini jack
Operating temperature/ Operating humidity		0 °C to 40 °C (32 °F to 104 °F)/35% to 85% (no condensation)
Storage temperature/ Storage humidity		–20 °C to +60 °C (–4 °F to +140 °F)/10 % to 90 %
Power requirements		VPL-FH500L: 100 V to 240 V AC, 4.9 A to 2.0 A, 50/60 Hz VPL-FX500L: 100 V to 240 V AC, 4.8 A to 2.0 A, 50/60 Hz
Power consumption	AC 100 V to 120 V	VPL-FH500L: 490 W / VPL-FX500L: 480 W
	AC 220 V to 240 V	VPL-FH500L: 460 W / VPL-FX500L: 460 W
Standby mode power consumption	AC 100 V to 120 V	VPL-FH500L: 11 W (when "Standby Mode" is set to "Standard") / 0.1 W (when "Standby Mode" is set to "Low") VPL-FX500L: 13 W (when "Standby Mode" is set to "Standard") / 0.1 W (when "Standby Mode" is set to "Low")
	AC 220 V to 240 V	VPL-FH500L: 10 W (when "Standby Mode" is set to "Standard") / 0.2 W (when "Standby Mode" is set to "Low") VPL-FX500L: 12 W (when "Standby Mode" is set to "Standard") / 0.2 W (when "Standby Mode" is set to "Low")
Heat dissipation	AC 100 V to 120 V	VPL-FH500L: 1672 BTU / VPL-FX500L: 1638 BTU
	AC 220 V to 240 V	VPL-FH500L: 1569 BTU / VPL-FX500L: 1569 BTU
Outside dimensions		530 × 213 × 545 mm (20 $^7/_8$" × 8 $^3/_8$" × 21 $^{15}/_{32}$") (W/H/D) 530 × 204 × 545 mm (20 $^7/_8$" × 8 $^1/_{32}$" × 21 $^{15}/_{32}$") (W/H/D) (without protrusions)
Mass[*8]		Approx. 20 kg (40 lb)

Item	Description
Model name	**VPL-FH500L/VPL-FX500L**
Supplied accessories	See "Checking the Supplied Accessories" in the supplied Quick Reference Manual.
Optional accessories[*4][*5]	**Projector Lamp LMP-F330 (for replacement)**
	Projector Suspension Support PSS-630
	Projector Suspension Support Joint Pole PSS-630P
	Projection Lens VPLL-FM22[*6]: Manual focus, Projected image size: 40" to 300" (1.02 m to 7.62 m), Maximum external dimensions (W × H × D): 88 × 88 × 169 mm (3 ^{15}/$_{32}$" × 3 ^{15}/$_{32}$" × 6 ^{21}/$_{32}$"), Mass: Approx. 1 kg (2.1 lb)
	Projection Lens VPLL-ZM32[*6]: Manual focus/zoom, Projected image size: 40" to 300" (1.02 m to 7.62 m), Maximum external dimensions (W × H × D): 88 × 88 × 159 mm (3 ^{15}/$_{32}$" × 3 ^{15}/$_{32}$" × 6 ^{1}/$_{4}$"), Mass: Approx. 1 kg (2.2 lb)
	Projection Lens VPLL-ZM42[*6]: Manual focus/zoom, Projected image size: 40" to 300" (1.02 m to 7.62 m), Maximum external dimensions (W × H × D): 88 × 88 × 159 mm (3 ^{15}/$_{32}$" × 3 ^{15}/$_{32}$" × 6 ^{1}/$_{4}$"), Mass: Approx. 0.7 kg (1.4 lb)
	Projection Lens VPLL-ZP41[*7]: Electric focus/zoom, Projected image size: 40" to 300" (1.02 m to 7.62 m), Maximum external dimensions (W × H × D): 117 × 110 × 198 mm (4 ^{19}/$_{32}$" × 4 ^{11}/$_{32}$" × 7 ^{25}/$_{32}$"), Mass: Approx. 1.5 kg (3.2 lb)
	Projection Lens VPLL-ZM102[*6]: Manual focus/zoom, Projected image size: 40" to 300" (1.02 m to 7.62 m), Maximum external dimensions (W × H × D): 88 × 88 × 198 mm (3 ^{15}/$_{32}$" × 3 ^{15}/$_{32}$" × 7 ^{25}/$_{32}$"), Mass: Approx. 1.5 kg (3.3 lb)
	Projection Lens VPLL-ZM101[*7] [*8]: Manual focus/zoom, Projected image size: 40" to 300" (1.02 m to 7.62 m), Maximum external dimensions (W × H × D): 100 × 100 × 222 mm (3 ^{15}/$_{16}$" × 3 ^{15}/$_{16}$" × 8 ^{3}/$_{4}$"), Mass: Approx. 1.8 kg (4 lb)
	Projection Lens VPLL-4008: Manual focus, Projected image size: 40" to 600" (1.02 m to 15.24 m), Maximum external dimensions (W × H × D): 148 × 133 × 240 mm (5 ^{13}/$_{16}$" × 5 ^{1}/$_{4}$" × 9 ^{7}/$_{16}$"), Mass: Approx. 2.6 kg (5.6 lb)
	Projection Lens VPLL-Z4011: Electric focus/zoom, Projected image size: 60" to 600" (1.52 m to 15.24 m), Maximum external dimensions (W × H × D): 157 × 150 × 265 mm (6 ^{3}/$_{16}$" × 5 ^{29}/$_{32}$" × 10 ^{7}/$_{16}$"), Approx. 3.7 kg (8 lb)

Item	Description
Model name	**VPL-FH500L/VPL-FX500L**
Optional accessories[*4] [*5]	**Projection Lens VPLL-Z4015:** Electric focus/zoom, Projected image size: 40" to 600" (1.02 m to 15.24 m), Maximum external dimensions (W × H × D): 148 × 133 × 231 mm (5 $^{13}/_{16}$" × 5 $^{1}/_{4}$" × 9 $^{3}/_{32}$"), Mass: Approx. 3 kg (6.6 lb)
	Projection Lens VPLL-Z4019: Electric focus/zoom, Projected image size: 40" to 600" (1.02 m to 15.24 m), Maximum external dimensions (W × H × D): 148 × 133 × 212 mm (5 $^{13}/_{16}$" × 5 $^{1}/_{4}$" × 8 $^{11}/_{32}$"), Mass: Approx. 3.1 kg (6.7 lb)
	Projection Lens VPLL-Z4025: Electric focus/zoom, Projected image size: 40" to 600" (1.02 m to 15.24 m), Maximum external dimensions (W × H × D): 148 × 133 × 243 mm (5 $^{13}/_{16}$" × 5 $^{1}/_{4}$" × 9 $^{9}/_{16}$"), Mass: Approx. 2.8 kg (6.2 lb)
	Projection Lens VPLL-Z4045: Electric focus/zoom, Projected image size: 60" to 600" (1.52 m to 15.24 m), Maximum external dimensions (W × H × D): 148 × 133 × 235 mm (5 $^{13}/_{16}$" × 5 $^{1}/_{4}$" × 9 $^{1}/_{4}$"), Mass: Approx. 3 kg (6.6 lb)
	Projection Lens Adapter PK-F500LA1
	Projection Lens Adapter PK-F500LA2
	HD-SDI/SDI Input Adaptor BKM-FW16[*3]

Notes

The values for mass and dimensions are approximate.

*1: When attaching the VPLL-ZP41.
*2: For details, refer to "Acceptable Input Signals" on page 51.
*3: Available for VPL-FH500L only
*4: Not all optional accessories are available in all countries and area. Please check with your local Sony Authorized Dealer.
*5: Information on accessories in this manual are current as of June 2013.
*6: To attach the projection lens to the projector, the PK-F500LA2 projection lens adapter is required.
*7: To attach the projection lens to the projector, the PK-F500LA1 projection lens adapter is required.
*8: Available for VPL-FX500L only.

Design and specifications of the unit, including the optional accessories, are subject to change without notice.

Always verify that the unit is operating properly before use. SONY WILL NOT BE LIABLE FOR DAMAGES OF ANY KIND INCLUDING, BUT NOT LIMITED TO, COMPENSATION OR REIMBURSEMENT ON ACCOUNT OF THE LOSS OF PRESENT OR PROSPECTIVE PROFITS DUE TO FAILURE OF THIS UNIT, EITHER DURING THE WARRANTY PERIOD OR AFTER EXPIRATION OF THE WARRANTY, OR FOR ANY OTHER REASON WHATSOEVER.

Others

Pin assignment

DVI-D connector (DVI-D, female)
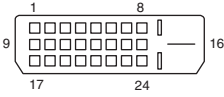
1	T.M.D.S. Data2–	14	+5 V Power
2	T.M.D.S. Data2+	15	Ground (return for +5 V)
3	T.M.D.S. Data2 Shield	16	Hot Plug Detect
4	NC	17	T.M.D.S Data0–
5	NC	18	T.M.D.S Data0+
6	DDC Clock	19	T.M.D.S Data0 Shield
7	DDC Data	20	NC
8	NC	21	NC
9	T.M.D.S. Data1–	22	T.M.D.S Clock Shield
10	T.M.D.S. Data1+	23	T.M.D.S Clock+
11	T.M.D.S. Data1 Shield	24	T.M.D.S Clock–
12	NC		
13	NC		

RGB input connector (Mini D-sub 15-pin, female)
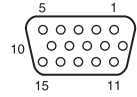
1	Video input (red) R	9	Power supply input for DDC
2	Video input (green) G	10	GND
3	Video input (blue) B	11	GND
4	GND	12	DDC/SDA
5	RESERVE	13	Horizontal sync signal
6	GND (R)	14	Vertical sync signal
7	GND (G)	15	DDC/SCL
8	GND (B)		

RS-232C connector (D-Sub 9-pin, female)
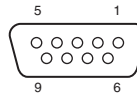
1	NC	6	NC
2	RXDA	7	RTS
3	TXDA	8	CTS
4	DTR	9	NC
5	GND		

HDMI connector (HDMI, female)
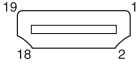
1	T.M.D.S. Data2+	11	T.M.D.S. Clock Shield
2	T.M.D.S. Data2 Shield	12	T.M.D.S. Clock–
3	T.M.D.S. Data2–	13	N.C.
4	T.M.D.S. Data1+	14	RESERVED (N.C.)
5	T.M.D.S. Data1 Shield	15	SCL
6	T.M.D.S. Data1–	16	SDA
7	T.M.D.S. Data0+	17	DDC GND
8	T.M.D.S. Data0 Shield	18	+5V Power
9	T.M.D.S. Data0–	19	Hot Plug Detect
10	T.M.D.S. Clock+		

Acceptable Input Signals

Computer signal

Resolution	fH [kHz]/ fV [Hz]	Input connector	
		RGB*1	DVI-D*2/ HDMI*6 *8
640 × 350	31.5/70	●	–
	37.9/85	●	–
640 × 400	31.5/70	●	–
	37.9/85	●	–
640 × 480	31.5/60	●	●
	35.0/67	●	–
	37.9/73	●	–
	37.5/75	●	–
	43.3/85	●	–
800 × 600	35.2/56	●	–
	37.9/60	●	●
	48.1/72	●	–
	46.9/75	●	–
	53.7/85	●	–
832 × 624	49.7/75	●	–
1024 × 768	48.4/60	●	●
	56.5/70	●	–
	60.0/75	●	–
	68.7/85	●	–
1152 × 864	64.0/70	●	–
	67.5/75	●	–
	77.5/85	●	–
1152 × 900	61.8/66	●	–
1280 × 960	60.0/60	●	●
	75.0/75	●	–
1280 × 1024	64.0/60	●	●
	80.0/75	●	–
	91.1/85	●	–
1400 × 1050	65.3/60	●	●
1600 × 1200	75.0/60	●	●
1280 × 768	47.8/60	●	●
1280 × 720	45.0/60	●	●*5

Resolution	fH [kHz]/ fV [Hz]	Input connector	
		RGB[*1]	DVI-D[*2]/ HDMI[*6 *8]
1920 × 1080	67.5/60	–	●[*5]
1360 × 768	47.7/60	●	●
1440 × 900	55.9/60	●	●
1680 × 1050	65.3/60	●	●
1280 × 800	49.7/60	●	●
1920 × 1200	74.0/60	●[*4]	●[*4]
1600 × 900	60.0/60	●[*4 *8]	●[*4 *8]

Digital TV signal

Signal	fV [Hz]	Input connector		
		RGB/ YPBPR[*3]	DVI-D[*2]/ HDMI[*6]	HD-SDI/ SDI input adaptor BKM-FW16[*7 *8]
480i	60	●	●	●
576i	50	●	●	●
480p	60	●	●	–
576p	50	●	●	–
1080i	60	●	●	●
1080i	50	●	●	●
1080i	48	–	–	●
720p	60	●	●[*5]	●
720p	50	●	●	●
1080p	60	–	●[*5]	–
1080p	50	–	●	–
1080p	24	–	●[*8]	●
1080p	30	–	–	●

Analog TV signal

Signal	fV [Hz]	Input connector
		VIDEO/ S VIDEO
NTSC	60	●
PAL/SECAM	50	●

Notes

*1: INPUT A, INPUT B
*2: INPUT C
*3: INPUT A
*4: Available for VESA Reduced Blanking signals only.
*5: INPUT C is determined as a computer signal; INPUT D is determined as a digital TV signal.
*6: INPUT D
*7: INPUT E
*8: Available for VPL-FH500L only
• When a signal other than the signals listed in table is input, the picture may not be displayed properly.
• An input signal meant for screen resolution different from that of the panel will not be displayed in its original resolution. Text and lines may be uneven.
• Some actual value may differ slightly from the design values given in the table.

Combinations of Input Signals (VPL-FH500L only)

| Main picture \ Sub picture	INPUT A (RGB/YPBPR)	INPUT B (RGB)	INPUT C (DVI-D)	INPUT D (HDMI)	INPUT E (Optional adapter)	S VIDEO	VIDEO
INPUT A (RGB/YPBPR)		●	–	–	–	–	–
INPUT B (RGB)	–		–	–	–	–	–
INPUT C (DVI-D)	–	●		–	–	–	–
INPUT D (HDMI)	–	●	–		–	–	–
INPUT E (Optional adapter)	–	●	–	–		–	–
S VIDEO	–	●	–	–	–		–
VIDEO	–	●	–	–	–	–	

Projection Distance and Lens Shift Range

The projection distance refers to the distance between the front of the lens and the projected surface.
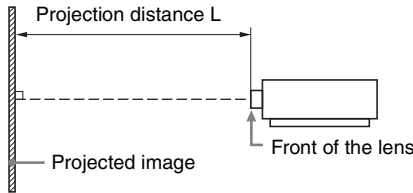
The lens shift range represents the distance in percent (%) by which the lens can be shifted from the center of the projected image. The lens shift range is regarded as 0% when the point (A) in the illustration (point where a line drawn from the center of the lens and the projected image cross at right angles) is aligned with the center of the projected image and full width or full height of the projected image is regarded as 100%.
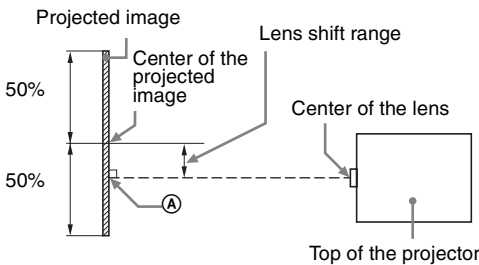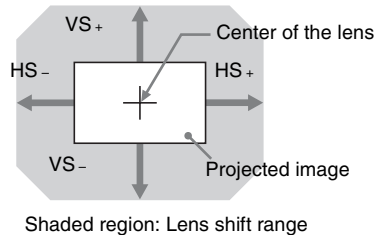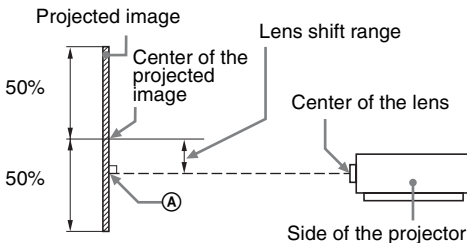
VS $_+$:   Vertical lens shift range (up) [%]
VS $_-$:   Vertical lens shift range (down) [%]
HS $_+$:   Horizontal lens shift range (right) [%]
HS $_-$:   Horizontal lens shift range (left) [%]

Projection distance (VPL-FH500L)

Unit: m (inches)

Projection image size		Projection distance L			
Diagonal	Width × Height	VPLL-FM22	VPLL-ZM32	VPLL-ZM42	VPLL-ZP41
80" (2.03 m)	1.72 × 1.08 (68 × 42)	1.48 (58)	2.49 – 2.74 (98 – 108)	3.17 – 3.98 (125 – 157)	4.28 – 4.78 (169 – 188)
100" (2.54 m)	2.15 × 1.35 (85 × 53)	1.87 (74)	3.12 – 3.44 (123 – 135)	3.98 – 4.99 (157 – 196)	5.37 – 6.00 (211 – 236)
120" (3.05 m)	2.58 × 1.62 (102 × 64)	2.25 (89)	3.76 – 4.15 (148 – 163)	4.78 – 6.00 (188 – 236)	6.45 – 7.22 (254 – 284)
150" (3.81 m)	3.23 × 2.02 (127 × 79)	2.83 (111)	4.71 – 5.20 (185 – 205)	5.99 – 7.51 (236 – 296)	8.09 – 9.05 (319 – 356)
200" (5.08 m)	4.31 × 2.69 (170 × 106)	3.79 (149)	6.30 – 6.95 (248 – 274)	8.01 – 10.03 (315 – 395)	10.80 – 12.11 (425 – 477)

Unit: m (inches)

Projection image size	Projection distance L	
Diagonal	VPLL-ZM102	VPLL-Z4011
80" (2.03 m)	5.62 – 8.33 (221 – 328)	2.36 – 3.56 (93 – 140)
100" (2.54 m)	7.07 – 10.46 (278 – 412)	2.96 – 4.47 (117 – 176)
120" (3.05 m)	8.52 – 12.58 (335 – 495)	3.57 – 5.38 (141 – 211)
150" (3.81 m)	10.69 – 15.77 (421 – 621)	4.48 – 6.74 (177 – 265)
200" (5.08 m)	14.31 – 21.09 (563 – 830)	6.00 – 9.01 (236 – 354)

Unit: m (inches)

Projection image size	Projection distance L				
Diagonal	VPLL-4008	VPLL-Z4015	VPLL-Z4019	VPLL-Z4025	VPLL-Z4045
80" (2.03 m)	1.80 (71)	3.36 – 4.42 (132 – 174)	4.36 – 5.57 (172 – 219)	5.48 – 10.14 (216 – 399)	10.09 – 17.46 (397 – 687)
100" (2.54 m)	2.27 (89)	4.22 – 5.55 (166 – 219)	5.48 – 6.99 (216 – 275)	6.88 – 12.71 (271 – 500)	12.66 – 21.88 (498 – 861)
120" (3.05 m)	2.74 (108)	5.09 – 6.68 (200 – 263)	6.60 – 8.41 (260 – 331)	8.29 – 15.28 (326 – 602)	15.23 – 26.30 (600 – 1035)
150" (3.81 m)	3.44 (135)	6.38 – 8.38 (251 – 330)	8.29 – 10.55 (326 – 415)	10.40 – 19.14 (409 – 754)	19.10 – 32.93 (752 – 1296)
200" (5.08 m)	4.61 (182)	8.55 – 11.20 (337 – 441)	11.09 – 14.10 (437 – 555)	13.92 – 25.57 (548 – 1007)	25.53 – 43.99 (1005 – 1732)

Others

Projection distance formula (VPL-FH500L)

D: Projected image size (Diagonal)   Unit: m (inches)

| Lens	Projection distance L (minimal length)	Projection distance L (maximal length)
VPLL-FM22	$L = 0.0192 \times D - 0.0524$ $(L = 0.7556 \times D - 2.0633)$	–
VPLL-ZM32	$L = 0.0318 \times D - 0.0581$ $(L = 1.2508 \times D - 2.2890)$	$L = 0.0350 \times D - 0.0549$ $(L = 1.3798 \times D - 2.1606)$
VPLL-ZM42	$L = 0.0403 \times D - 0.0558$ $(L = 1.5861 \times D - 2.1962)$	$L = 0.0504 \times D - 0.0524$ $(L = 1.9861 \times D - 2.0625)$
VPLL-ZP41	$L = 0.0544 \times D - 0.0758$ $(L = 2.1408 \times D - 2.9822)$	$L = 0.0610 \times D - 0.0917$ $(L = 2.4019 \times D - 3.6088)$
VPLL-ZM102	$L = 0.0724 \times D - 0.1755$ $(L = 2.8508 \times D - 6.9075)$	$L = 0.1063 \times D - 0.1635$ $(L = 4.1842 \times D - 6.4371)$
VPLL-4008	$L = 0.0234 \times D - 0.0777$ $(L = 0.9229 \times D - 3.0591)$	–
VPLL-Z4011	$L = 0.0303 \times D - 0.0739$ $(L = 1.1940 \times D - 2.9096)$	$L = 0.0454 \times D - 0.0651$ $(L = 1.7871 \times D - 2.5635)$
VPLL-Z4015	$L = 0.0433 \times D - 0.1100$ $(L = 1.7030 \times D - 4.3315)$	$L = 0.0565 \times D - 0.1029$ $(L = 2.2269 \times D - 4.0525)$
VPLL-Z4019	$L = 0.0561 \times D - 0.1260$ $(L = 2.2066 \times D - 4.9594)$	$L = 0.0711 \times D - 0.1200$ $(L = 2.8008 \times D - 4.7225)$
VPLL-Z4025	$L = 0.0704 \times D - 0.1611$ $(L = 2.7714 \times D - 6.3404)$	$L = 0.1286 \times D - 0.1510$ $(L = 5.0650 \times D - 5.9456)$
VPLL-Z4045	$L = 0.1287 \times D - 0.2160$ $(L = 5.0674 \times D - 8.5019)$	$L = 0.2211 \times D - 0.2269$ $(L = 8.7050 \times D - 8.9328)$

Lens shift range (VPL-FH500L)

■ VPLL-ZM32, VPLL-ZM42, VPLL-ZM102
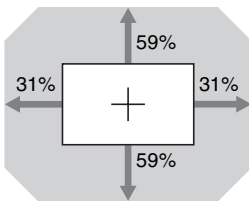
$VS_+ = VS_- = 59 - 1.903 \times (HS_+ \text{ or } HS_-)$ [%]
$HS_+ = HS_- = 31 - 0.525 \times (VS_+ \text{ or } VS_-)$ [%]
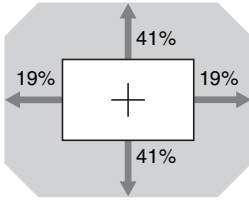
■ VPLL-ZP41, VPLL-Z4019, VPLL-Z4025, VPLL-Z4045
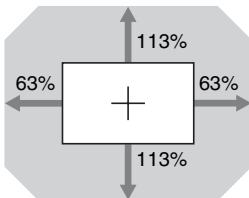
$VS_+ = VS_- = 113 - 1.794 \times (HS_+ \text{ or } HS_-)$ [%]
$HS_+ = HS_- = 63 - 0.558 \times (VS_+ \text{ or } VS_-)$ [%]

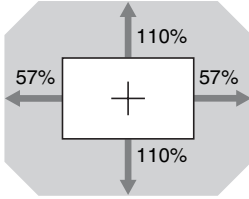■ **VPLL-4008**

$VS_+ = VS_- = 41 - 2.158 \times (HS_+ \text{ or } HS_-) \text{ [%]}$
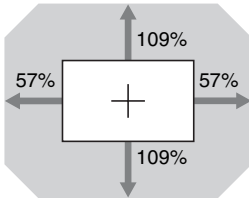$HS_+ = HS_- = 19 - 0.463 \times (VS_+ \text{ or } VS_-) \text{ [%]}$

■ **VPLL-Z4011**

$VS_+ = VS_- = 110 - 1.930 \times (HS_+ \text{ or } HS_-) \text{ [%]}$
$HS_+ = HS_- = 57 - 0.518 \times (VS_+ \text{ or } VS_-) \text{ [%]}$

■ **VPLL-Z4015**

$VS_+ = VS_- = 109 - 1.912 \times (HS_+ \text{ or } HS_-) \text{ [%]}$
$HS_+ = HS_- = 57 - 0.523 \times (VS_+ \text{ or } VS_-) \text{ [%]}$

Projection distance (VPL-FX500L)

Unit: m (inches)

Projection image size		Projection distance L			
Diagonal	Width × Height	VPLL-FM22	VPLL-ZM32	VPLL-ZM42	VPLL-ZP41
80" (2.03 m)	1.63 × 1.22 (64 × 48)	1.42 (56)	2.39 – 2.64 (94 – 103)	3.05 – 3.82 (120 – 150)	4.11 – 5.01 (162 – 197)
100" (2.54 m)	2.03 × 1.52 (80 × 60)	1.79 (71)	3.00 – 3.31 (118 – 130)	3.82 – 4.79 (151 – 188)	5.16 – 6.29 (203 – 247)
120" (3.05 m)	2.44 × 1.83 (96 × 72)	2.16 (85)	3.61 – 3.98 (143 – 157)	4.60 – 5.76 (181 – 227)	6.20 – 7.57 (245 – 298)
150" (3.81 m)	3.05 × 2.29 (120 × 90)	2.72 (107)	4.53 – 4.99 (179 – 196)	5.76 – 7.22 (227 – 284)	7.77 – 9.49 (306 – 373)
200" (5.08 m)	4.06 × 3.05 (160 × 120)	3.64 (143)	6.06 – 6.68 (239 – 263)	7.70 – 9.64 (303 – 379)	10.39 – 12.69 (409 – 499)

Unit: m (inches)

Projection image size	Projection distance L		
Diagonal	VPLL-ZM102	VPLL-ZM101	VPLL-Z4011
80" (2.03 m)	5.40 – 8.01 (213 – 315)	7.29 – 10.71 (287 – 421)	2.26 – 3.42 (89 – 134)
100" (2.54 m)	6.79 – 10.05 (268 – 395)	9.16 – 13.44 (361 – 529)	2.85 – 4.29 (112 – 169)
120" (3.05 m)	8.18 – 12.09 (323 – 476)	11.03 – 16.17 (435 – 636)	3.43 – 5.17 (135 – 203)
150" (3.81 m)	10.27 – 15.16 (405 – 597)	13.84 – 20.26 (545 – 797)	4.31 – 6.48 (170 – 255)
200" (5.08 m)	13.75 – 20.27 (542 – 798)	18.53 – 27.09 (730 – 1,066)	5.76 – 8.66 (227 – 341)

Unit: m (inches)

Projection image size	Projection distance L				
Diagonal	VPLL-4008	VPLL-Z4015	VPLL-Z4019	VPLL-Z4025	VPLL-Z4045
80" (2.03 m)	1.73 (68)	3.22 – 4.24 (127 – 167)	4.19 – 5.35 (165 – 210)	5.26 – 9.74 (207 – 383)	9.69– 16.78 (382 – 660)
100" (2.54 m)	2.18 (86)	4.05 – 5.33 (160 – 210)	5.27 – 6.72 (208 – 264)	6.61 – 12.21 (261 – 481)	12.17 – 21.03 (479 – 828)
120" (3.05 m)	2.63 (103)	4.89 – 6.42 (193 – 252)	6.35 – 8.08 (250 – 318)	7.97 – 14.69 (314 – 578)	14.64 – 25.28 (577 – 995)
150" (3.81 m)	3.30 (130)	6.13 – 8.05 (242 – 317)	7.96 – 10.14 (314 – 399)	10.00 – 18.40 (394 – 724)	18.35 – 31.66 (723 – 1,246)
200" (5.08 m)	4.43 (174)	8.21 – 10.77 (324 – 424)	10.66 – 13.56 (420 – 533)	13.38 – 24.58 (527 – 968)	24.54 – 42.29 (967 – 1,665)

Projection distance formula (VPL-FX500L)

D: Projected image size (Diagonal)   Unit: m (inches)

Lens	Projection distance L (minimal length)	Projection distance L (maximal length)
VPLL-FM22	$L = 0.0185 \times D - 0.0524$ ($L = 0.7265 \times D - 2.0633$)	–
VPLL-ZM32	$L = 0.0305 \times D - 0.0581$ ($L = 1.2027 \times D - 2.2890$)	$L = 0.0337 \times D - 0.0549$ ($L = 1.3267 \times D - 2.1606$)
VPLL-ZM42	$L = 0.0387 \times D - 0.0558$ ($L = 1.5251 \times D - 2.1962$)	$L = 0.0485 \times D - 0.0524$ ($L = 1.9097 \times D - 2.0625$)
VPLL-ZP41	$L = 0.0523 \times D - 0.0757$ ($L = 2.0585 \times D - 2.9822$)	$L = 0.0640 \times D - 0.1052$ ($L = 2.5203 \times D - 4.1418$)
VPLL-ZM102	$L = 0.0696 \times D - 0.1755$ ($L = 2.7411 \times D - 6.9075$)	$L = 0.1022 \times D - 0.1635$ ($L = 4.0233 \times D - 6.4371$)
VPLL-ZM101	$L = 0.0937 \times D - 0.2145$ ($L = 3.6886 \times D - 8.4462$)	$L = 0.1365 \times D - 0.2063$ ($L = 5.3734 \times D - 8.1224$)
VPLL-4008	$L = 0.0225 \times D - 0.0777$ ($L = 0.8874 \times D - 3.0591$)	–

Lens	Projection distance L (minimal length)	Projection distance L (maximal length)
VPLL-Z4011	$L = 0.0292 \times D - 0.0739$ $(L = 1.1481 \times D - 2.9096)$	$L = 0.0436 \times D - 0.0651$ $(L = 1.7184 \times D - 2.5635)$
VPLL-Z4015	$L = 0.0416 \times D - 0.1100$ $(L = 1.6375 \times D - 4.3315)$	$L = 0.0544 \times D - 0.1029$ $(L = 2.1413 \times D - 4.0525)$
VPLL-Z4019	$L = 0.0539 \times D - 0.1260$ $(L = 2.1217 \times D - 4.9594)$	$L = 0.0684 \times D - 0.1200$ $(L = 2.6930 \times D - 4.7225)$
VPLL-Z4025	$L = 0.0677 \times D - 0.1610$ $(L = 2.6648 \times D - 6.3404)$	$L = 0.1237 \times D - 0.1510$ $(L = 4.8702 \times D - 5.9456)$
VPLL-Z4045	$L = 0.1238 \times D - 0.2159$ $(L = 4.8725 \times D - 8.5019)$	$L = 0.2126 \times D - 0.2269$ $(L = 8.3702 \times D - 8.9328)$

Lens shift range (VPL-FX500L)

■ VPLL-ZM32, VPLL-ZM42, VPLL-ZM102
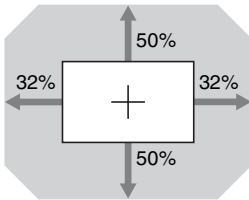
$VS_+ = VS_- = 50 - 1.563 \times (HS_+ \text{ or } HS_-)$ [%]
$HS_+ = HS_- = 32 - 0.640 \times (VS_+ \text{ or } VS_-)$ [%]

■ VPLL-ZP41, VPLL-ZM101, VPLL-Z4019, VPLL-Z4025, VPLL-Z4045
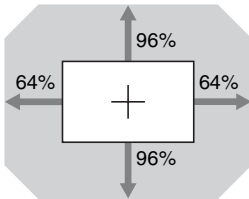
$VS_+ = VS_- = 96 - 1.500 \times (HS_+ \text{ or } HS_-)$ [%]
$HS_+ = HS_- = 64 - 0.667 \times (VS_+ \text{ or } VS_-)$ [%]

■ VPLL-4008
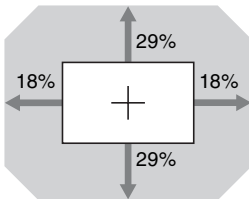
$VS_+ = VS_- = 29 - 1.611 \times (HS_+ \text{ or } HS_-)$ [%]
$HS_+ = HS_- = 18 - 0.621 \times (VS_+ \text{ or } VS_-)$ [%]

Others

■ VPLL-Z4015, VPLL-Z4011
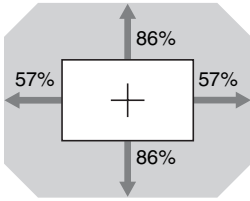
$VS_+ = VS_- = 86 - 1.509 \times (HS_+ \text{ or } HS_-) \text{ [\%]}$
$HS_+ = HS_- = 57 - 0.663 \times (VS_+ \text{ or } VS_-) \text{ [\%]}$

Dimensions

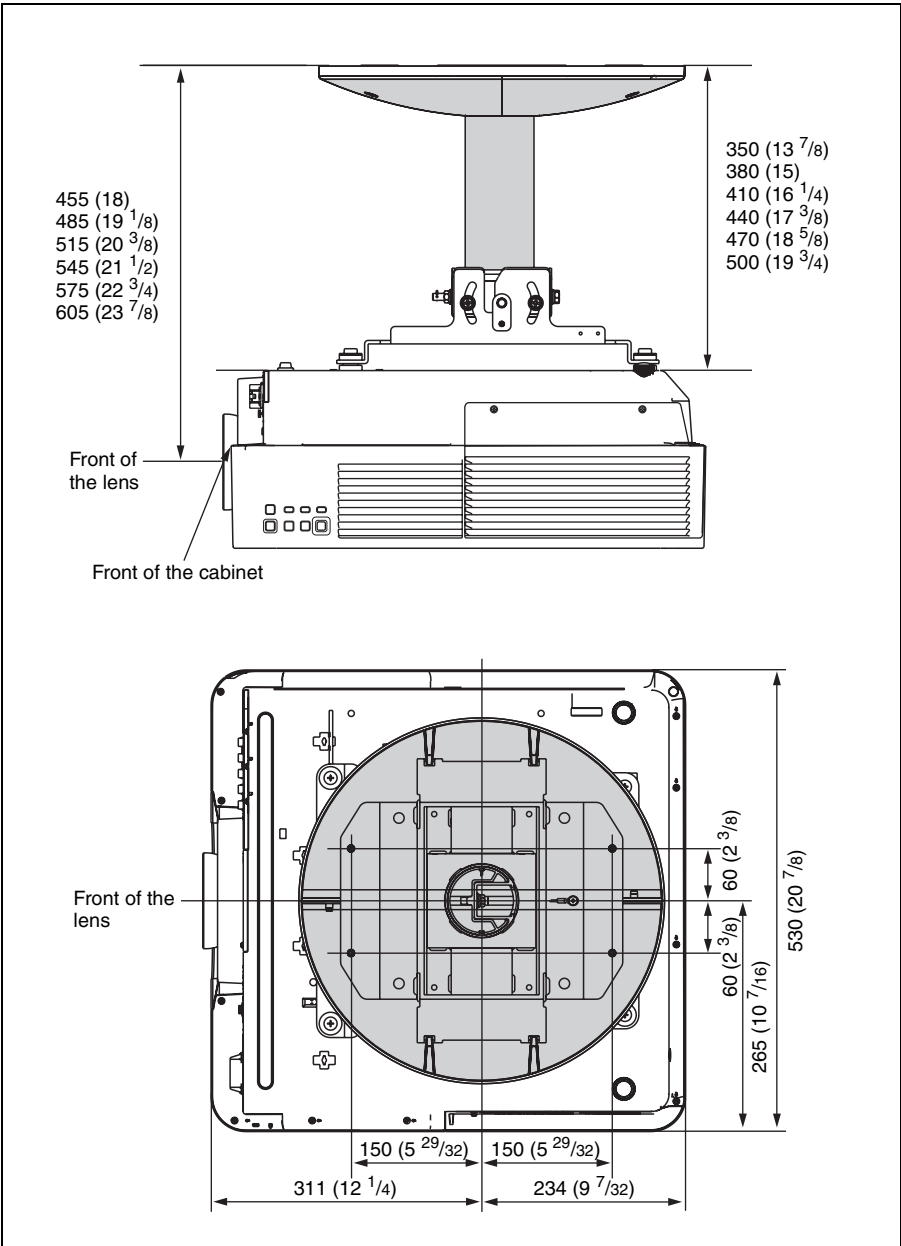**Front**   Unit: mm (inches)

530 (20 $^7/_8$)

213 (8 $^3/_8$)

204 (8 $^1/_{32}$)

105 (4 $^1/_8$)

Center of the lens

265 (10 $^7/_{16}$)

Bottom   Unit: mm (inches)

545 (21 $^{15}/_{32}$)

474 (18 $^{21}/_{32}$)

137.2 (5 $^{13}/_{32}$)

62.5 (2 $^{15}/_{32}$)

ø24

215 (8 $^{15}/_{32}$)

141 (5 $^9/_{16}$)

216 (8 $^1/_2$)

131 (5 $^5/_{32}$)

Center of the lens

215 (8 $^{15}/_{32}$)

141 (5 $^9/_{16}$)

131 (5 $^5/_{32}$)

216 (8 $^1/_2$)

14 ($^9/_{16}$)

475.2 (18 $^{23}/_{32}$)
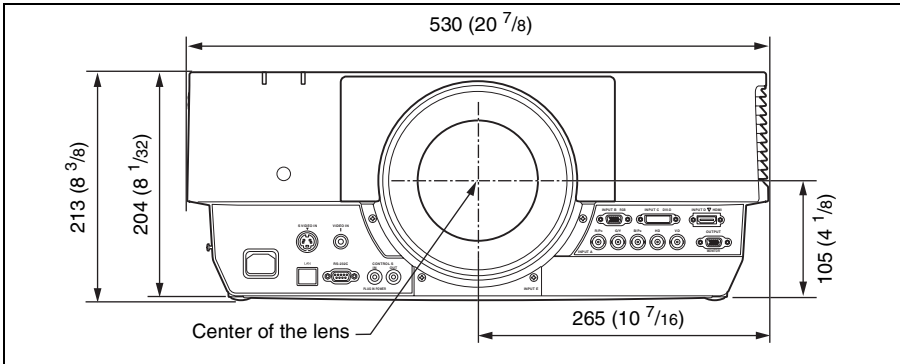
Others
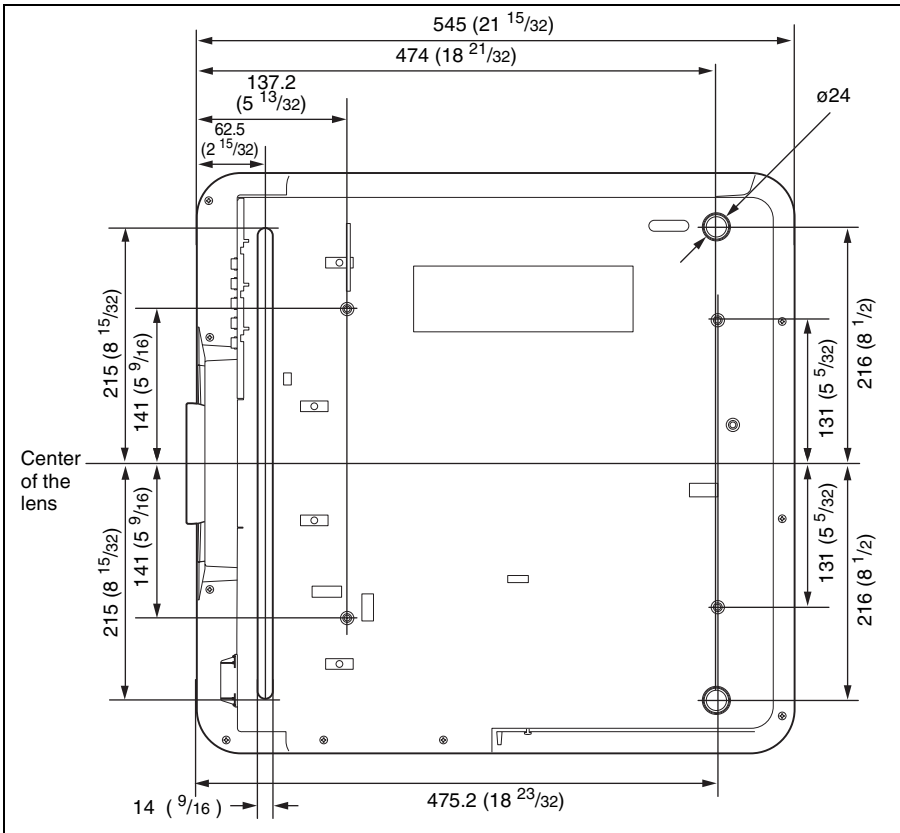
When using the PSS-630 projector suspension support

Caution

Never mount the projector on the ceiling or move it by yourself. Be sure to consult with qualified Sony personnel (charged).

Unit: mm (inches)

350 (13 $^7/_8$)
380 (15)
410 (16 $^1/_4$)
440 (17 $^3/_8$)
470 (18 $^5/_8$)
500 (19 $^3/_4$)

455 (18)
485 (19 $^1/_8$)
515 (20 $^3/_8$)
545 (21 $^1/_2$)
575 (22 $^3/_4$)
605 (23 $^7/_8$)

Front of the lens

Front of the cabinet

Front of the lens

60 (2 $^3/_8$)

60 (2 $^3/_8$)

265 (10 $^7/_{16}$)

530 (20 $^7/_8$)

150 (5 $^{29}/_{32}$)   150 (5 $^{29}/_{32}$)

311 (12 $^1/_4$)   234 (9 $^7/_{32}$)

The distance L' between the front of the lens (center) and the front of the cabinet

Unit: mm (inches)

Lens	L'	Type
VPLL-FM22	30.9 (1 $^7/_{32}$)	①
VPLL-ZM32	42.5 (1 $^{11}/_{16}$)	①
VPLL-ZM42	40.1 (1 $^{19}/_{32}$)	①
VPLL-ZP41	9.1 ($^{11}/_{32}$)	②
VPLL-ZM102	3.0 ($^1/_8$)	①
VPLL-ZM101	41.3 (1 $^5/_8$)	②
VPLL-4008	57.8 (2 $^9/_{32}$)	②
VPLL-Z4011	75.5 (2 $^{31}/_{32}$)	②
VPLL-Z4015	47.8 (1 $^7/_8$)	②
VPLL-Z4019	26.7 (1 $^1/_{16}$)	②
VPLL-Z4025	55.4 (2 $^3/_{16}$)	②
VPLL-Z4045	53.0 (2 $^3/_{32}$)	②

① ②

Front of the cabinet

Front of the lens

L'   L'
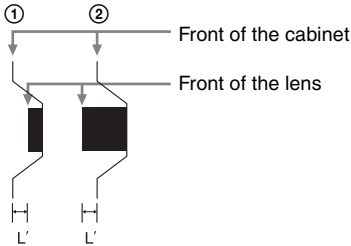
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Others

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