MITSUBISHI ELECTRIC

HOME THEATER PROJECTOR

MODEL

HC9000D
HC9000DW

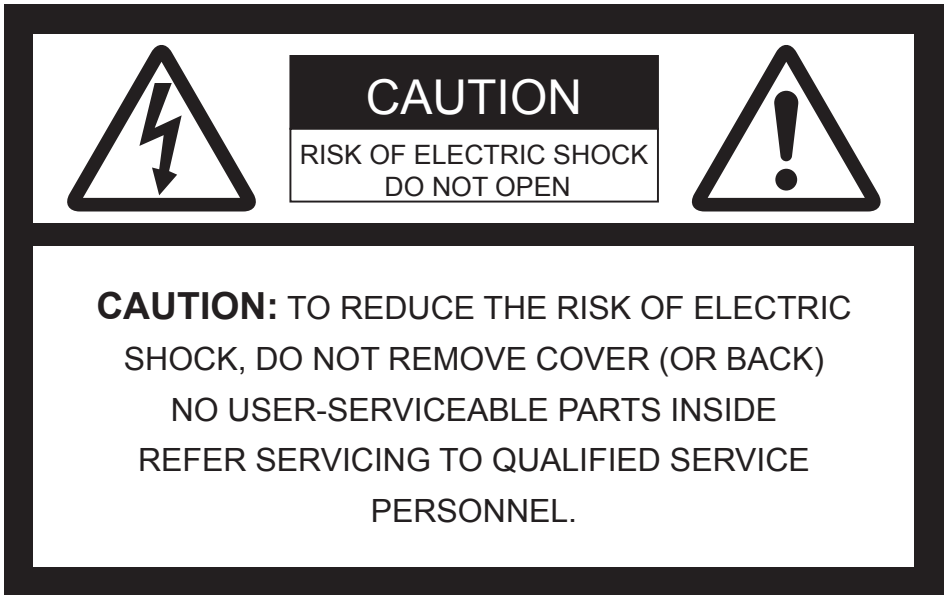
User Manual

HDMI™
HIGH-DEFINITION MULTIMEDIA INTERFACE

HD ready

HC9000D
HC9000DW

This User Manual is important to you.
Please read it before using your projector.



The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING:
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION:
TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

NOTE:
SINCE THIS PROJECTOR IS PLUGGABLE EQUIPMENT, THE SOCKET-OUTLET SHALL BE INSTALLED NEAR THE EQUIPMENT AND SHALL BE EASILY ACCESSIBLE.

WARNING
Use the attached specified power supply cord. If you use another power supply cord, it may cause interference with radio and television reception.

Use the attached computer cable and RS-232C cable with this equipment so as to keep interference within the limits of a FCC Class B device.

This apparatus must be grounded.

DO NOT LOOK DIRECTLY INTO THE LENS WHEN THE PROJECTOR IS IN THE POWER ON MODE.

CAUTION
Not for use in a computer room as defined in the Standard for the Protection of Electronic Computer/ Data Processing Equipment, ANSI/NFPA 75.

When using the projector in Europe: COMPLIANCE NOTICE
This projector complies with the requirements of the EC Directive 2004/108/EC “EMC Directive” and 2006/95/EC “Low Voltage Directive”.

The electro-magnetic susceptibility has been chosen at a level that gains proper operation in residential areas, on business and light industrial premises and on small-scale enterprises, inside as well as outside of the buildings. All places of operation are characterised by their connection to the public low voltage power supply system.

WARNING
Use the attached computer cable and RS-232C cable with this equipment so as to keep interference within the limits of an EN55022 Class B device.
Please follow WARNING instructions.

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Note: This symbol mark is for EU countries only.
This symbol mark is according to the directive 2002/96/EC Article 10 Information for users and Annex IV, and/or to the directive 2006/66/EC Article 20 Information for end-users and Annex II.

Your MITSUBISHI ELECTRIC product is designed and manufactured with high quality materials and components which can be recycled and/or reused.
This symbol means that electrical and electronic equipment, batteries and accumulators, at their end-of-life, should be disposed of separately from your household waste.
If a chemical symbol is printed beneath the symbol shown above, this chemical symbol means that the battery or accumulator contains a heavy metal at a certain concentration. This will be indicated as follows:
Hg: mercury (0,0005%), Cd: cadmium (0,002%), Pb: lead (0,004%)
In the European Union there are separate collection systems for used electrical and electronic products, batteries and accumulators.
Please, dispose of this equipment, batteries and accumulators correctly at your local community waste collection/ recycling centre.
Please, help us to conserve the environment we live in!

Trademark, Registered trademark

SXRD™ is the trademark of Sony Corporation.
HDMI, the HDMI logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing LLC.
The “HD ready” logo is a trademark of EICTA.
Other brand or product names are trademarks or registered trademarks of their respective holders.

Important safeguards

Please read all these instructions regarding your projector and retain them for future reference. Follow all warnings and instructions marked on the projector.

1. Read instructions
   All the safety and operating instructions should be read before the appliance is operated.
2. Retain instructions
   The safety and operating instructions should be retained for future reference.
3. Warnings
   All warnings on the appliance and in the operating instructions should be adhered to.
4. Instructions
   All operating instructions must be followed.
5. Cleaning
   Unplug this projector from the wall outlet before cleaning it. Do not use liquid aerosol cleaners. Use a damp soft cloth for cleaning.
6. Attachments and equipment
   Never add any attachments and/or equipment without the approval of the manufacturer as such additions may result in the risk of fire, electric shock or other personal injury.
7. Water and moisture
   Do not use this projector near water or in contact with water.
8. Accessories
   Do not place this projector on an unstable cart, stand, tripod, bracket or table. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer or sold with the projector. Any mounting of the appliance should follow the manufacturer's instructions and should use a mounting accessory recommended by the manufacturer.

   An appliance and cart combination should be moved with care. Quick stops, excessive force and uneven surfaces may cause the appliance and cart combination to overturn.
9. Ventilation
   Slots and openings in the cabinet are provided for ventilation, ensuring reliable operation of the projector and to protect it from overheating. Do not block these openings or allow them to be blocked by placing the projector on a bed, sofa, rug, or bookcase. Ensure that there is adequate ventilation and that the manufacturer's instructions have been adhered to.
10. Power sources
    This projector should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power, please consult your appliance dealer or local power company.
11. Power-cord protection
    Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them. Pay particular attention to cords at plugs, convenience receptacles, and points where they exit from the appliance. Do not put the power cord under a carpet.
12. Overloading
    Do not overload wall outlets and extension cords as this can result in a fire or electric shock.
13. Objects and liquids
    Never push objects of any kind through openings of this projector as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the projector.
14. Servicing
    Do not attempt to service this projector by yourself. Refer all servicing to qualified service personnel.
15. Damage requiring service
    Unplug this projector from the wall outlet and refer servicing to qualified service personnel under the following conditions:
    (a) If the power-supply cord or plug is damaged.
    (b) If liquid has been spilled, or objects have fallen into the projector.
    (c) If the projector does not operate normally after you follow the operating instructions. Adjust only those controls that are covered by the operating instructions. An improper adjustment of other controls may result in damage and may often require extensive work by a qualified technician to restore the projector to its normal operation.
    (d) If the projector has been exposed to rain or water.
    (e) If the projector has been dropped or the cabinet has been damaged.
    (f) If the projector exhibits a distinct change in performance - this indicates a need for service.
16. Replacement parts
    When replacement parts are required, be sure that the service technician has used replacement parts specified by the manufacturer or parts having the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.
17. Safety check
    Upon completion of any service or repair to this projector, ask the service technician to perform safety checks determining that the projector is in a safe operating condition.

WARNING:

Unplug immediately if there is something wrong with your projector.
Do not operate if smoke, strange noise or odor comes out of your projector. It might cause fire or electric shock. In this case, unplug immediately and contact your dealer.

Never remove the cabinet.
This projector contains high voltage circuitry. An inadvertent contact may result in an electric shock. Except as specifically explained in the User Manual do not attempt to service this product by yourself. Please contact your dealer when you want to fix, adjust or inspect the projector.

Do not modify this equipment.
It can lead to fire or electric shock.

Do not keep using the damaged projector.
If the projector is dropped and the cabinet is damaged, unplug the projector and contact your dealer for inspection. It may lead to fire if you keep using the damaged projector.

Do not face the projector lens to the sun.
It can lead to fire.

Use correct voltage.
If you use incorrect voltage, it can lead to fire.

Do not place the projector on uneven surface.
Place the projection on a leveled and stable surface only. Please do not place equipment on unstable surfaces.

Do not look into the lens when it is operating.
It may hurt your eyes. Never let children look into the lens when it is on.

Do not unplug the power cord during operation.
It can lead to lamp breakage, fire, electric shock or other trouble. It is best to wait for the fan to turn off before turning the main power off.

Do not touch the air outlet grille and bottom plate, which become hot.
Do not touch them or put other equipment in front of the air outlet grille. The air outlet grille and bottom plate, when heated, may cause injury or damage to other equipment. Also, do not set the projector on the desk which is easily affected by heat.

Do not look into the air outlet grille when projector is operating.
Heat, dust, etc. may blow out of it and hurt your eyes.

Do not insert your fingers in the space between the lens and the cabinet.
The lens may shift causing injury or damage to the projector.

Do not block the air inlet and outlet grilles.
If they are blocked, heat may be generated inside the projector, causing deterioration in the projector quality and fire.

Do not use flammable solvents (benzene, thinner, etc.) and flammable aerosols near the projector.
Flammable substances may ignite causing fire or breakdown because the temperature inside the projector rises very high while the lamp is illuminating.

Do not use the projector with condensation on it.
It can lead to breakdown or other failure.

Place of installation
For safety's sake, refrain from setting the projector at any place subjected to high temperature and high humidity. Please maintain an operating temperature, humidity, and altitude as specified below.

- Operating temperature: between +41°F (+5°C) and +95°F (+35°C)
- Operating humidity: between 30% and 90%
- Never put any heat-producing device under the projector so that the projector does not overheat.
- Do not attach the projector to a place that is unstable or subjected to vibration.
- Do not install the projector near any equipment that produces a strong magnetic field. Also refrain from installing near the projector any cable carrying a large current.
- Place the projector on a solid, vibration free surface; otherwise it may fall, causing serious injury to a child or adult, and serious damage to the product.
- Do not stand the projector; it may fall, causing serious injury and damage to the projector.
- Slanting the projector more than ±10° (right and left) or ±10° (front and rear) may cause trouble or explosion of the lamp.
- Do not place the projector near air-conditioning unit, heater, or humidifier to avoid hot or moist air to the exhaust and ventilation hole of the projector.
- We don't recommend using the projector at an altitude of 1500 meters or higher. Use at an altitude of 1500 meters or higher may affect the projector's life.
- Do not place the projector in the following places. Otherwise, a short circuit, heat generation, or melting of the power cord coating may occur, causing fire, electric shock, product failure, or deformation.
  - Outdoors or non air-conditioned place
  - Place where a gas such as a hydrogen sulfide is generated (i.e. hot spring)
  - Place where there is too much salt such as near the coast
- Plug is used for disconnect device. So the socket-outlet should be install near the equipment and shall be easily accessible.

COMPLIANCE NOTICE OF FCC

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

Changes or modifications not expressly approved by Mitsubishi could void the user's authority to operate this equipment.

COMPLIANCE NOTICE OF INDUSTRY CANADA

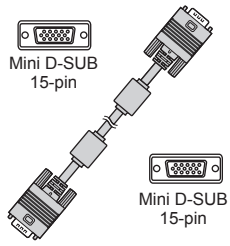
This Class B digital apparatus complies with Canadian ICES-003.

Preparing your projector

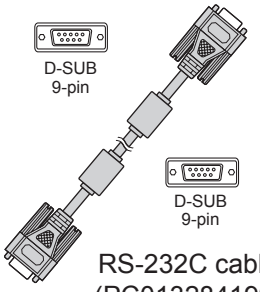
Checking accessories

The following accessories are provided with this projector. Check to be sure that all of the accessories are packed in the package.

■ Cables



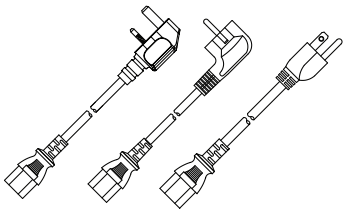
Computer cable
(PC013284299)



RS-232C cable
(PC013284199)

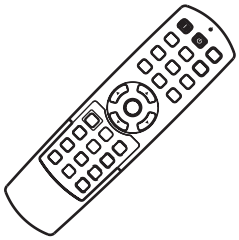
- Used for projector control by computer.

■ Power supply parts

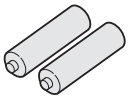


Power cord for US (PC013285699)
Power cord for EU (PC013285899)
Power cord for UK (PC013285799)

■ Remote control parts



Remote control
(PB0132860U9)



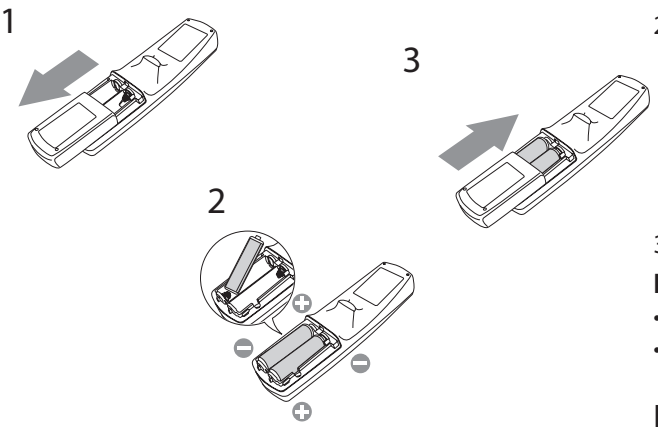
R6 (Size-AA)
battery (two)

■ Others

- Lens cap
- Lamp replacement tray
- User Manual/Quick Start up (English only)
- CD-ROM (with User Manual)
- Safety Manual/Quick Start up

Important:

- The attached power cords are to be used exclusively for this product. Never use them for other products.



Inserting the batteries into the remote control

1. Remove the back lid of the remote control.
2. Check the polarity (+), (-) of the batteries, and set them correctly, inserting their (-) side first.
   - If the battery is inserted from the (+) side first, inserting the (-) side is difficult because the coil spring end hits on the battery side. If the battery is forced in this way, the outer label of the battery may get ripped and it may cause a short-circuit and heating.
3. Attach the back lid.

Important:

- Use two size-AA batteries (R6).
- Replace the two batteries with new ones when the remote control is slow to respond.

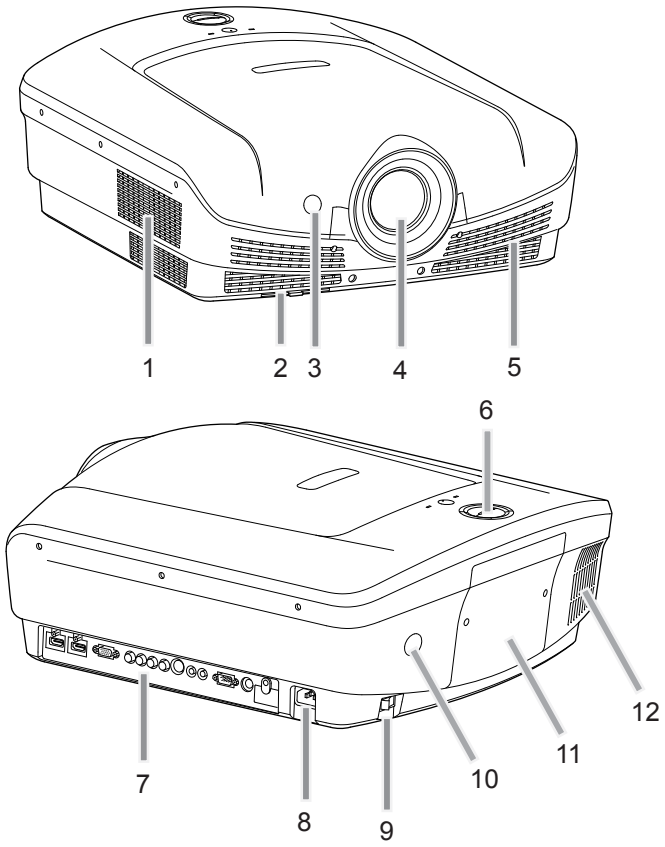
Removing the batteries from the remote control

Remove the back lid of the remote control and take out the batteries.

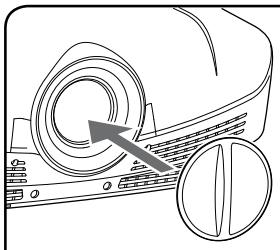
Caution:

- Use of a battery of wrong type may cause explosion.
- Only Carbon-Zinc or Alkaline-Manganese Dioxide type batteries should be used.
- Dispose of used batteries according to your local regulations.
- Batteries may explode if misused. Do not recharge, disassemble, or throw them in fire.
- Be sure to handle the batteries according to the instructions.
- Load the batteries with its positive (+) and negative (-) sides correctly oriented as indicated on the remote control.
- Keep batteries out of reach of children and pets.
- Remove the batteries, if the remote control is not used for a long time.
- Do not combine a new battery with an old one.
- If the solution of batteries comes in contact with your skin or clothes, rinse with water. If the solution comes in contact with your eyes, rinse them with water and then consult your doctor.

Overview

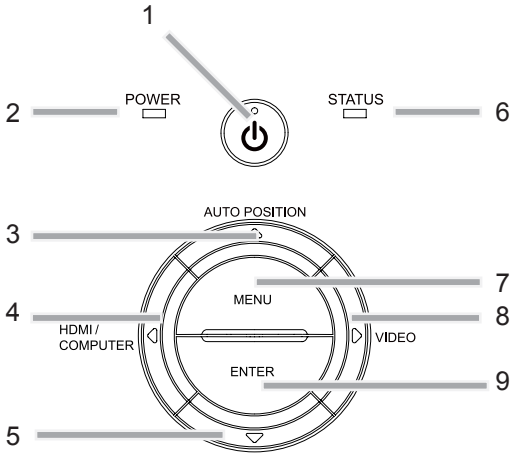


1 Air exhaust grille
2 Air filter
3 Remote control sensor (front)
4 Lens
5 Air intake grille
6 Control panel and indicators
7 Terminal panel
8 Power jack
9 Main power switch
O: OFF I: ON
10 Remote control sensor (rear)
11 Lamp cover
12 Air intake grille



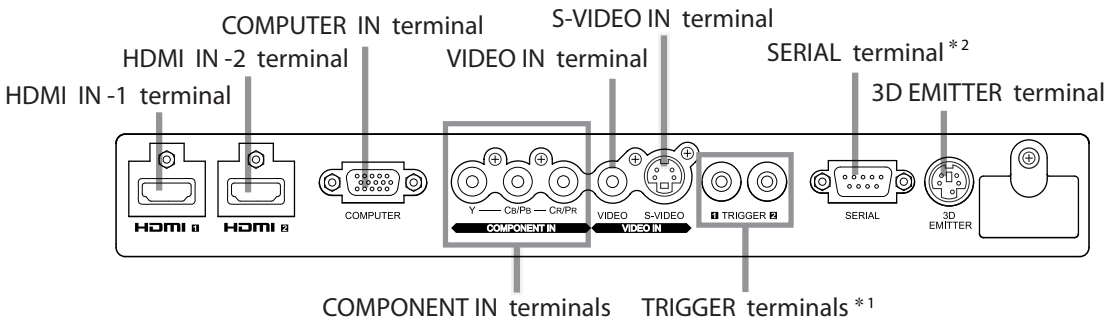
To attach the supplied lens cap, push it into the lens section of the projector.
(For removal, pull it in the other direction)

Control panel and Indicators



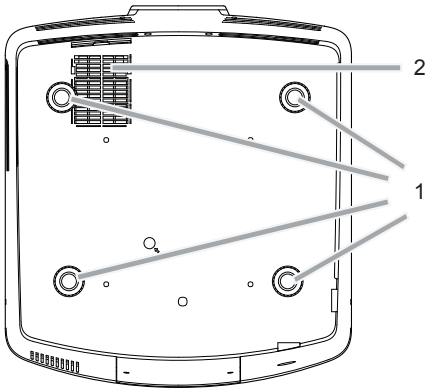
1 POWER button (ON/STANDBY)
The status is changed between ON and STANDBY.
2 POWER indicator
3 AUTO POSITION/▲ button
4 HDMI/COMPUTER/◄ button
5 ▼ button
6 STATUS indicator
7 MENU button
8 VIDEO/► button
9 ENTER button

Terminal panel



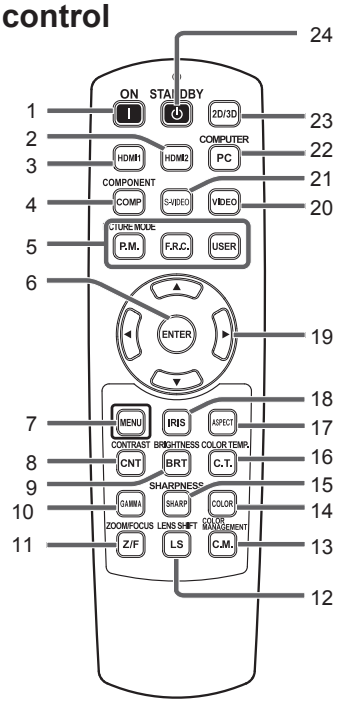
＊1 : Used for the optional electric screen and anamorphic lens.
＊2 : Used for projector control by computer. Contact your dealer for details.

Bottom side



1 Adjustment feet
2 Air intake grille

Remote control



1 ON (I) button
2 HDMI2 button
3 HDMI1 button
4 COMPONENT button
5 P.M., F.R.C., USER buttons
6 ENTER button
7 MENU button
8 CONTRAST button*
9 BRIGHTNESS button*
10 GAMMA button*
11 ZOOM/FOCUS button
12 LENS SHIFT button
13 COLOR MANAGEMENT button*
14 COLOR button*
15 SHARPNESS button*
16 COLOR TEMP. button*
17 ASPECT button
18 IRIS button
19 ▲, ▼, ◀, ▶ buttons
20 VIDEO button
21 S-VIDEO button
22 COMPUTER button
23 2D/3D button
24 STANDBY button

* : See below for the picture quality adjusting buttons.

Important:

When you press any button on the remote control, the buttons on the remote control are lit. Wait for a while after releasing the button to turn them off.

Using the picture quality adjusting buttons

When you press any of the picture quality adjusting buttons, the screen for adjusting the picture quality appears. Adjust the picture quality by pressing the ▲ and ▼ buttons. The picture quality adjustment can be made alternatively in the Picture1 or the Picture2 menu. (See pages 34 to 36.) Items in the menus are shown in parentheses below.

CONTRAST (Contrast)..... Adjusts the contrast of the projected image.
BRIGHTNESS (Brightness)..... Adjusts the brightness of the projected image.
COLOR TEMP. (Color Temp.)..... Selects one of the preset color temperatures. Adjustment of USER mode is also available. (See page 40.)
GAMMA (Gamma Correction) ..... Selects one of the preset gamma modes. Adjustment of USER mode is also available. (See page 41.)
SHARPNESS (Sharpness)..... Adjusts the sharpness of the projected image.
COLOR (Color)..... Adjusts the color thickness of the projected image.
COLOR MANAGEMENT ..... Select one of the preset color management settings.
(Color Management)

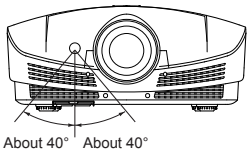
Using the setting change buttons

When you press any of the setting change buttons on the remote control, you can easily select one of the preset settings.
PICTURE MODE (Picture Mode) ..... Switches the picture mode.
USER (User)..... Switches the User setting set in the picture mode.
F.R.C. (Frame Rate Conversion)..... Switches the frame rate.

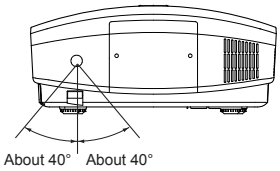
Using the remote control

Operational range of the remote control

Front of projector

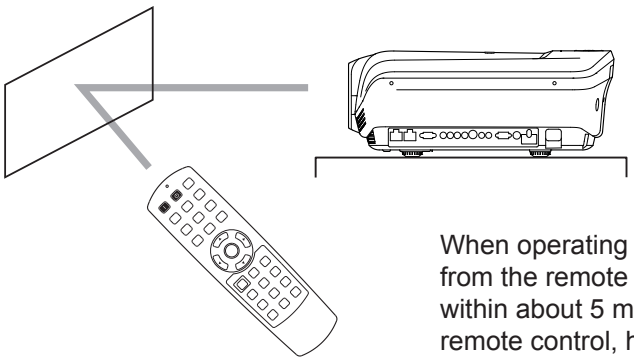


Rear of projector



Operate the remote control within a distance of about 10 m (30 feet) from the projector, pointing the IR beam at the remote control photo-sensor (front or rear) of the projector.

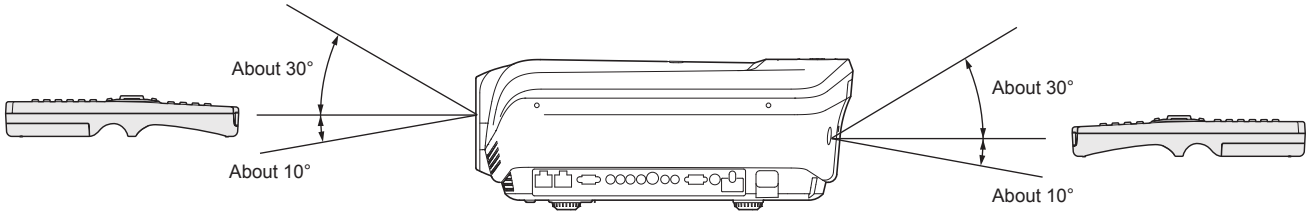
- Keep the remote control photo-sensor out of direct sunlight or fluorescent lamp light.
- Keep the remote control photo-sensor at least 2 m (6 feet) away from fluorescent lamps. Otherwise, the remote control may malfunction.
- If there is an inverter-operated fluorescent lamp near the remote control, the remote control operation may become unstable.
- When you use the remote control too close to the remote control sensor, the remote control may not work correctly.
- A remote control may operate improperly while you watch the 3D images, however, it is not a malfunction.
- When a remote control operates improperly while you watch the 3D images, switch Remote Position in the Setup menu to Front or Rear.



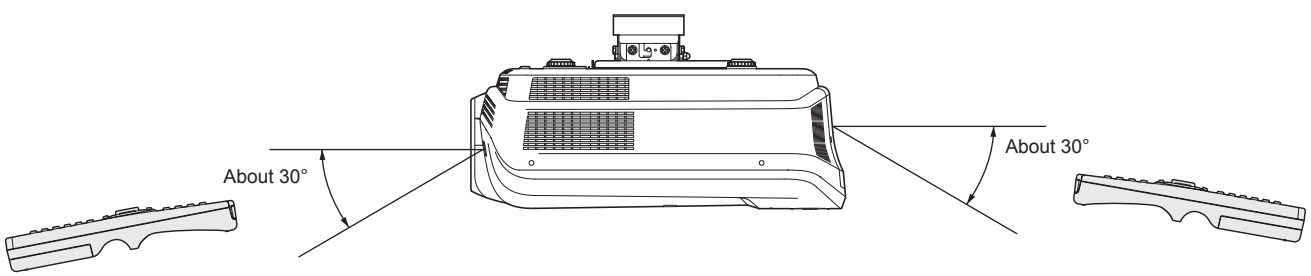
When operating the remote control, keep the distance from the remote control to the projector via the screen within about 5 m (15 feet). The operable range of the remote control, however, depends on the characteristics of the screen.

Reception angle

Vertical directions



Vertical directions (ceiling mount)



Setting up your projector

Setting up the screen

Install the screen perpendicularly to the projector. If the screen can not be installed in such a way, adjust the projection angle of the projector. (See page 12.)

- Install the screen and projector so that the projector's lens is placed at the same height and horizontal position of the screen center.
- Do not install the screen where it is exposed to direct sunlight or lighting. Light directly reflecting on the screen makes the projected images washed-out and hard to view.

Screen Size

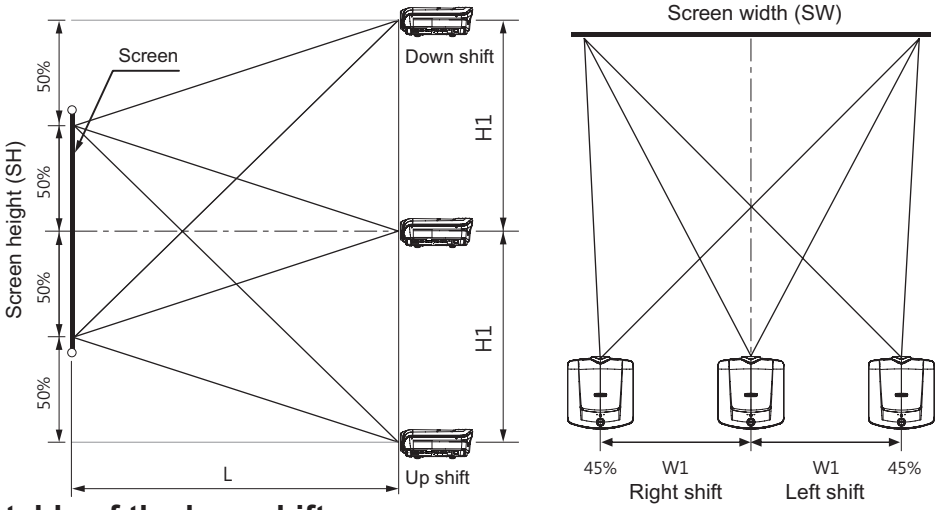
You can keep the image display area within the screen by setting Aspect Ratio in the Screen menu according to the aspect ratio of the actual screen. Select Full screen when the aspect ratio of the screen is Full screen or Standard.
When setting Aspect Ratio to Full screen:

- 4:3 size movies are projected in the full screen.
- Set Aspect Ratio in the Screen menu to Full Screen when displaying Vista-size images. In this case, they are squeezed horizontally.
- When Aspect Ratio in the Screen menu is set to Anamorphic 1 and 480i/p, 576i/p, 720p, or 1080i/p signal is input, the part for displaying subtitles is not projected. To display subtitles, reset Aspect Ratio to Full screen and adjust the image position using Horizontal Position and Vertical Position in the Screen menu.

Screen size and projection distance

Refer to the following tables to determine the screen size and projection distance.

- The figures in the tables are approximate and may be slightly different from the actual measurements.
- The lens shift height and width show distances from factory default position.



■ Correlation table of the lens shift

Lens shift up-down	100%	80%	60%	40%	20%	0%
Lens shift right-left	0%	15.3%	26%	34%	40%	45%

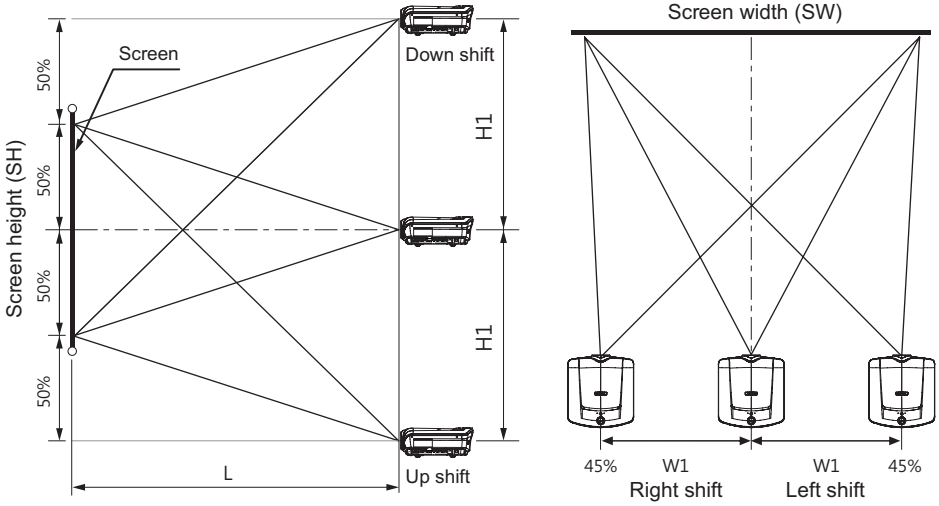
* The values of the up-down and right-left can not set to maximum simultaneously.

When the aspect ratio of the screen is Full Screen

Screen (16:9)						Projection distance (L)				Lens movable range			
Diagonal size		Height (SH)		Width (SW)		Shortest (Wide)		Longest (Tele)		H1		W1	
inch	cm	inch	cm	inch	cm	inch	m	inch	m	inch	cm	inch	cm
50	127	25	62	44	111	66	1.7	122	3.1	25	62	20	50
60	152	29	75	52	133	80	2.0	147	3.7	29	75	24	60
70	178	34	87	61	155	94	2.4	172	4.4	34	87	27	70
80	203	39	100	70	177	108	2.7	197	5.0	39	100	31	80
90	229	44	112	78	199	122	3.1	222	5.6	44	112	35	90
100	254	49	125	87	221	135	3.4	246	6.3	49	125	39	100
110	279	54	137	96	244	149	3.8	271	6.9	54	137	43	110
120	305	59	149	105	266	163	4.1	296	7.5	59	149	47	120
150	381	74	187	131	332	205	5.2	371	9.4	74	187	59	149
200	508	98	249	174	443	274	7.0	496	12.6	98	249	78	199

- Projection distance changes according to the setting of Aspect Ratio in the Screen menu. The table above is in the case of "Full Screen."
- Depending on the installation conditions, warm air that is emitted from the exhaust vents may flow into the intake vent, causing the projector image stop.

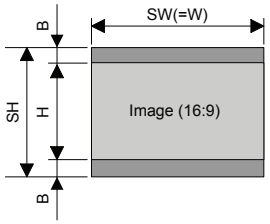
Screen size and projection distance (continued)



■ Correlation table of the lens shift

Lens shift up-down	100%	80%	60%	40%	20%	0%
Lens shift right-left	0%	15.3%	26%	34%	40%	45%

* The values of the up-down and right-left can not set to maximum simultaneously.



When the aspect ratio of the screen is Standard

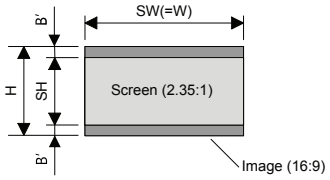
When the aspect ratio of the screen is Standard, the positional relation between the projected image and the screen is as shown on the right. Refer to the following table for installation.

When the aspect ratio of the image is 16:9

Screen (4:3)						Image (16:9)								Projection distance (L)				Lens movable range			
Diagonal size		Height (SH)		Width (SW)		Diagonal size		Height (H)		Width (W)		Black space(B)		Shortest (Wide)		Longest (Tele)		H1		W1	
inch	cm	inch	cm	inch	cm	inch	cm	inch	cm	inch	cm	inch	cm	inch	m	inch	m	inch	cm	inch	cm
60	152	36	91	48	122	55	140	27	69	48	122	5	11	73	1.9	134	3.4	27	69	22	55
70	178	42	107	56	142	64	163	32	80	56	142	5	13	86	2.2	157	4.0	32	80	25	64
80	203	48	122	64	163	73	187	36	91	64	163	6	15	99	2.5	180	4.6	36	91	29	73
90	229	54	137	72	183	83	210	41	103	72	183	7	17	111	2.8	203	5.2	41	103	32	82
100	254	60	152	80	203	92	233	45	114	80	203	8	19	124	3.2	226	5.7	45	114	36	91
110	279	66	168	88	224	101	256	50	126	88	224	8	21	137	3.5	249	6.3	50	126	40	101
120	305	72	183	96	244	110	280	54	137	96	244	9	23	150	3.8	272	6.9	54	137	43	110
150	381	90	229	120	305	138	350	68	171	120	305	11	29	188	4.8	341	8.7	68	171	54	137
200	508	120	305	160	406	184	466	90	229	160	406	15	38	251	6.4	455	11.6	90	229	72	183

- Projection distance changes according to the setting of Aspect Ratio in the Screen menu. The table above is in the case of “Full Screen.”

When the aspect ratio of the screen is 2.35:1 (CinemaScope)

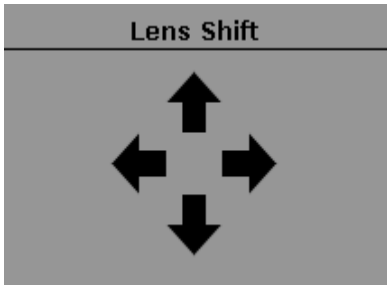


Screen (2.35:1 1920x816dot)								Image(16:9 1920x1080dot)						Projection distance (L)				Lens movable range			
Diagonal size		Height (SH)		Width (SW)		Black Space(B')		Diagonal Size		Height(H)		Width(W)		Shortest (Wide)		Longest (Tele)		H1		W1	
inch	cm	inch	cm	inch	cm	inch	cm	inch	cm	inch	cm	inch	cm	inch	m	inch	m	inch	cm	inch	cm
100	254	39	99	92	234	6	16	106	268	52	131	92	234	143	3.6	260	6.6	52	131	41	105
110	279	43	109	101	257	7	18	116	295	57	145	101	257	158	4.0	287	7.3	57	145	46	116
120	305	47	119	110	281	8	19	127	322	62	158	110	281	173	4.4	313	8.0	62	158	50	126
130	330	51	129	120	304	8	21	137	349	67	171	120	304	187	4.8	340	8.6	67	171	54	137
140	356	55	139	129	327	9	22	148	375	72	184	129	327	202	5.1	366	9.3	72	184	58	147
150	381	59	149	138	351	9	24	158	402	78	197	138	351	217	5.5	392	10.0	78	197	62	158
160	406	63	159	147	374	10	26	169	429	83	210	147	374	231	5.9	419	10.6	83	210	66	168
170	432	66	169	156	397	11	27	180	456	88	224	156	397	246	6.2	445	11.3	88	224	70	179
180	457	70	179	166	421	11	29	190	483	93	237	166	421	260	6.6	471	12.0	93	237	75	189
190	483	74	189	175	444	12	31	201	510	98	250	175	444	275	7.0	498	12.6	98	250	79	200
200	508	78	199	184	468	13	32	211	536	104	263	184	468	290	7.4	524	13.3	104	263	83	210

Adjusting the position of the projected image

To adjust the position of the projected image on the screen, use the LENS SHIFT button.

1. Press the LENS SHIFT button.
   - The Lens Shift menu appears at the center of the screen.
2. Press the ▲, ▼, ◀ or ▶ button to move the image position.
   - When the ▼ button is pressed, the image moves down.
   - When the ▲ button is pressed, the image moves up.
   - When the ▶ button is pressed, the image moves to the right.
   - When the ◀ button is pressed, the image moves to the left.

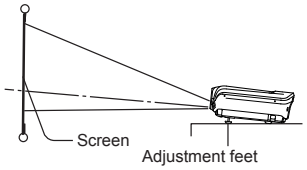


- The crosshatch pattern is displayed while no video signal is input to the projector.
- Be careful not to be caught in the opening in the lens while the lens is moving.
- When the lens is vertically shifted by a large amount, color separation may occur.
- While the lens shift is working, the screen may flicker.

Correcting skewed or distorted image

For the best projection, project images on a flat screen installed at 90 degrees to the floor. If necessary, tilt the projector using the four adjustment feet on the bottom of the projector.

1. Tilt up the projector to the appropriate angle.
2. Rotate the adjustment feet for fine adjustment.



Important:
Don't transport the projector with its adjustment feet extended. Otherwise the adjustment feet may be damaged.

When fine streaks are seen on projected images

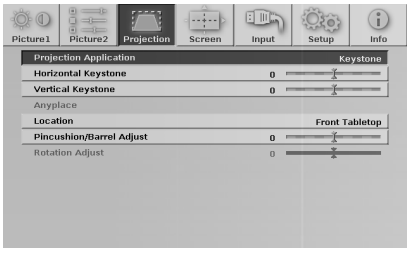
This is due to interference with the screen surface and is not a malfunction. Replace the screen or displace the focus a little. (See page 18 or 23 for focus adjustment.)

When projected images are distorted to a trapezoid

When the screen and the projector are not placed perpendicularly to each other, projected images become trapezoidal. If you cannot make the projector and the screen perpendicular to each other by mechanical adjustments, adjust keystone.

With the Projection menu:
(See page 34 for menu setting.)

1. Display the Projection menu.
2. Select Projection Application by pressing the ▲ or ▼ button and select the Keystone by pressing the ◀ or ▶ button.
3. Select the Vertical Keystone to equalize the width at the top and bottom of the screen by pressing the ◀ or ▶ button, viewing the screen.
4. Select the Horizontal Keystone to equalize the height at the left and right of the screen by pressing the ◀ or ▶ button, viewing the screen.

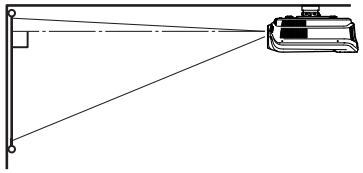


To cancel the menu:

5. Press the MENU button.

- The best adjustment result can be obtained when the lens is positioned at the center of the lateral direction at the top in the longitudinal direction.
- When the keystone adjustment is carried out, the adjustment value is indicated. Note that this value doesn't mean a projection angle.
- When the keystone adjustment takes effect, the resolution decreases. In addition, stripes may appear or straight lines may bend in images with complicated patterns. They are not due to product malfunctions.
- When the keystone adjustment is carried out, the image may not be displayed correctly because of the type of input signal.
- When the keystone adjustment is performed, the displayed image may be distorted.
- Depending on the installation conditions of the projector and the screen, a perfect rectangular image and the proper aspect ratio may not be obtained.
- The settings of Horizontal keystone, Vertical keystone and Pincushion/Barrel Adjust of the Projection Application in the Projection menu are invalid (restored to the default settings) while you are watching the 3D images. The settings can not be changed.

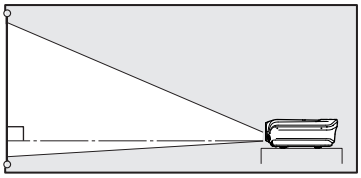
Front projection, ceiling mounting



For ceiling mounting, you need the ceiling mount kit designed for this projector. Ask a specialist for installation. For details, consult your dealer.

- The warranty on this projector does not cover any damage caused by use of any non-recommended ceiling mount kit or installation of the ceiling mount kit in an improper location.
- When using the projector mounted on the ceiling, set Location in the Projection menu to Front Ceiling. (See page 36.)
- When the projector is mounted on the ceiling, images may appear darker than those projected in the case of tabletop mounting. This isn't a product malfunction.
- Ask your installation specialist to provide an A/C power switch. When you do not use the projector, be sure to shut down the main power by the switch.
- Do not install the projector where the exhaust vents are exposed to air emitted by an air conditioning. Such installation may cause a breakdown.
- Do not install the projector near a fire alarm because it emits hot air from its exhaust vents.

Rear projection



Ask a specialist for installation. For details, consult your dealer.

- For rear projection, set Location in the Projection menu to Rear Tabletop. (See page 36.)

Caution:

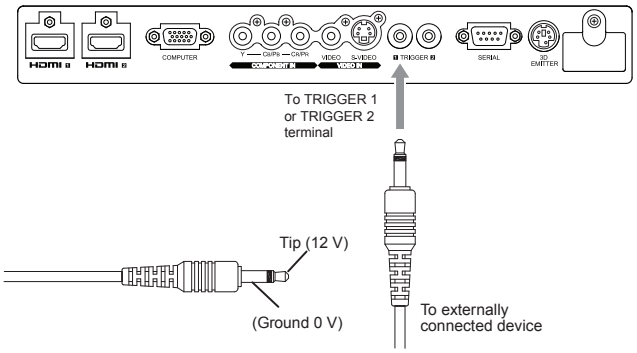
- Placing the projector directly on a carpet impairs ventilation by the fans, causing damage or failure. Put a hard board under the projector to facilitate ventilation.
- Place the projector at least 50 cm (or 20 inch) away from the wall to prevent the air inlet grille and the air outlet grilles that emit hot air from being blocked.
- Do not use the projector in the following locations and manners, which may cause fire or electric shock.
  - In a dusty or humid place.
  - In a sideways position, or with the lens facing down.
  - Near a heater.
  - In an oily, smoky, or damp place such as a kitchen.
  - In direct sunlight.
  - Where the temperature rises high, such as in a closed car.
  - Where the temperature is lower than +41ºF (or +5ºC) or higher than +95ºF (or +35ºC).

Important:

- We don't recommend using the projector at an altitude of 1500 meters or higher. Use at an altitude of 1500 meters or higher may affect the projector's life.

TRIGGER terminal

The TRIGGER terminal on the rear of the projector is a terminal that outputs a 12 V signal to control an externally connected device (electric screen) when images are projected.



To use the TRIGGER terminal, set Trigger1 (Power) or Trigger2 (Anamo) to On in the Setup menu. (The factory default is Off. See page 38 for details.) Use the following steps to change the setting.

With the Setup menu:

(See page 34 for menu setting.)

1. Display the Setup menu.
2. Select Trigger1 (Power) or Trigger2 (Anamo) by pressing the ▲ or ▼ button.
3. Select On or Off by pressing the ◀ or ▶ button.

To cancel the menu:

4. Press the MENU button.

Caution:

- Do not use the signal output from the TRIGGER terminal as a power for other devices.
- Do not link the TRIGGER terminal with an audio terminal of other device because that device may be damaged.
- The rated current for the TRIGGER terminal is 200 mA. If you use a current exceeding this rating, a failure may occur.
- For information about electric screens, please contact screen manufacturers.

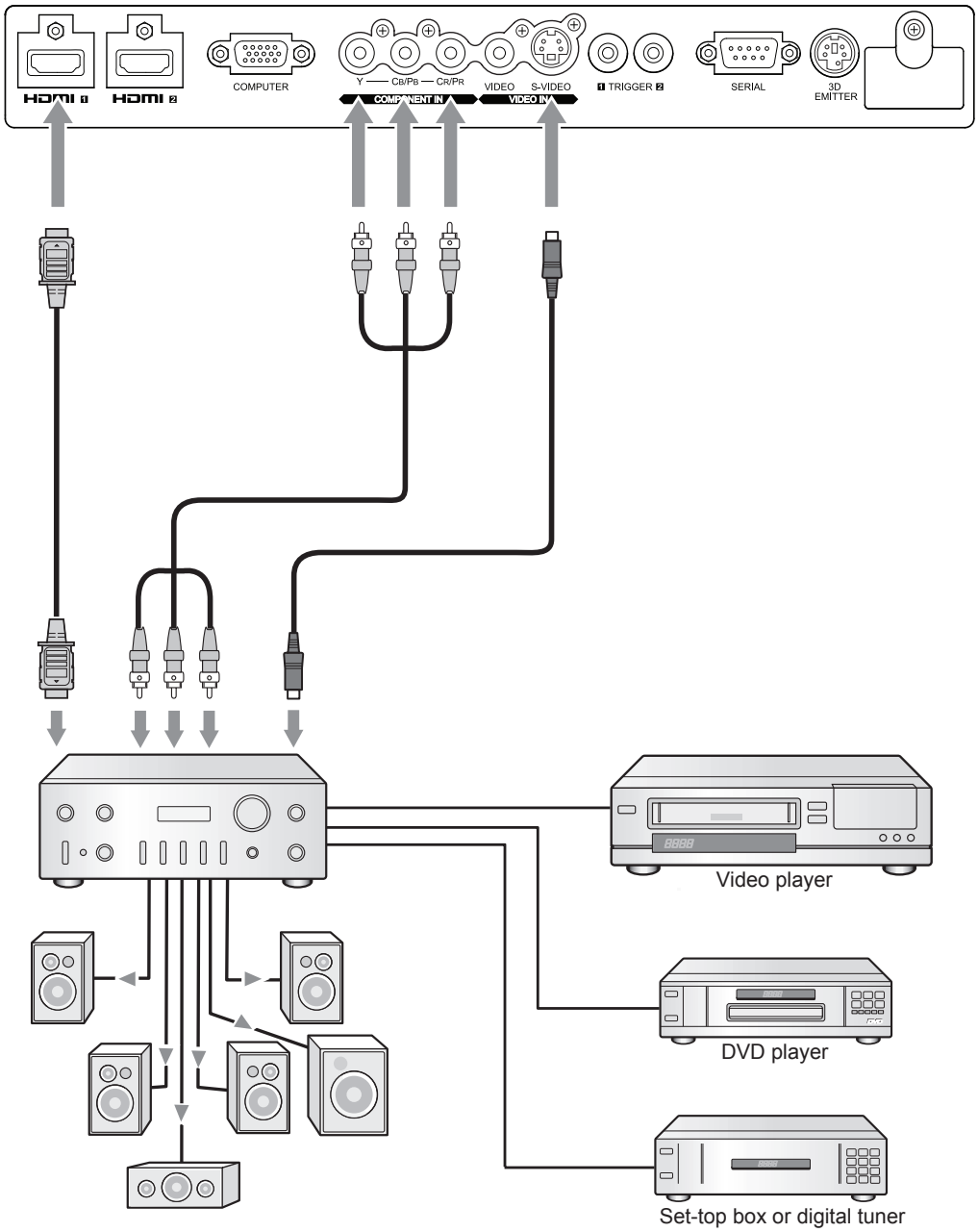
A. Connecting the projector to video equipment

- When the projector and the connected devices are located too close to each other, the projected image may be affected by their interference.
- See the owner's guide of each device for details about its connections.

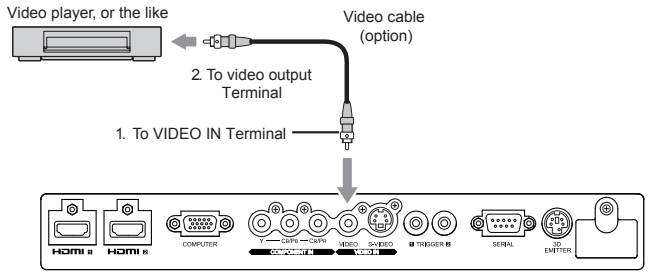
Preparation:

- Make sure that the power of the projector and that of the video equipment are turned off.

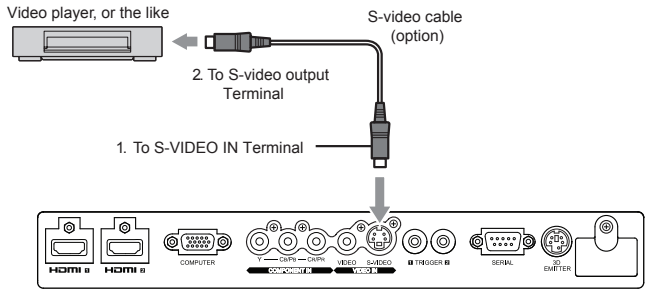
Basic home theater system connection



Connecting to a video player, etc.



1. Connect one end of the optional video cable to the VIDEO IN terminal of the projector.
2. Connect the other end of the video cable to the video output terminal of the video equipment.



When the video equipment is equipped with the S-video output terminal, make the connection as follows:

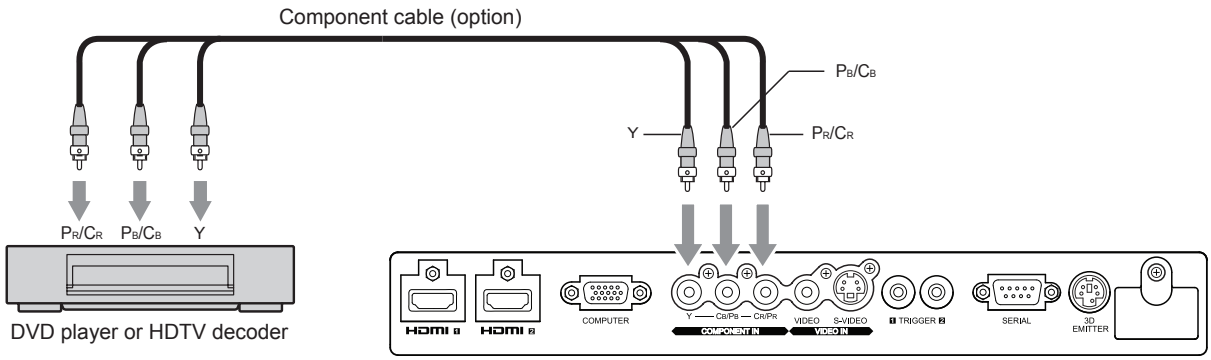
1. Connect one end of the optional S-video cable to the S-VIDEO IN terminal of the projector.
2. Connect the other end of the S-video cable to the S-video output terminal of the video equipment.

- Also read the instruction manual of the equipment to be connected.
- Contact your dealer for details of connection.

When a TV tuner or VCR is connected:
When you use this projector with a TV tuner or VCR connected, no image may appear or a message of NO SIGNAL may appear on the screen when you change the channel via any channel that is not being received. In such a case, set the channels of the TV tuner or VCR again. To avoid such symptom, use the TV tuner or VCR with its channel skip function (that is a function not to display channels that are not being received) enabled.

Connecting to a DVD player or HDTV decoder

To connect this projector to video equipment that has component video output terminals, such as a DVD player, use the COMPONENT terminals.



- The terminal's names Y, P_B, and P_R are given as examples of when a HDTV decoder is connected.
- The terminal's names vary depending on the connected devices.
- Images may not be projected correctly depending on the type of the DVD player you use.
- Though it may take some time before an image is displayed on the screen depending on the type of the input signal, such symptom is not a malfunction.

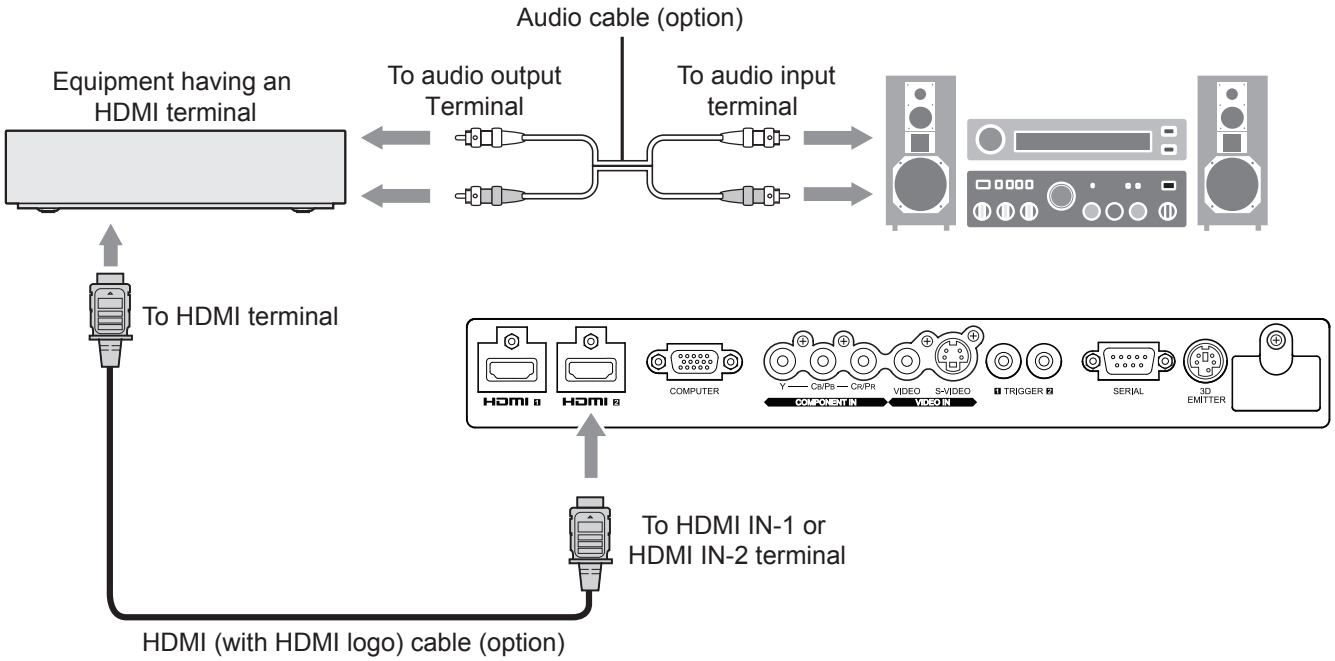
Connecting to video equipment having a HDMI terminal

You can project high-quality images by connecting the HDMI IN terminal of this projector to video equipment having a HDMI output terminal. In addition, this projector supports HDCP and is able to receive encrypted digital video data that are output from DVD players.

- Select HDMI 1 or HDMI 2 as the input source.
- HDCP (High-bandwidth Digital Content Protection), developed by Intel Corporation, is a method to encrypt digital video data for the purpose of copy protection.
- HDMI (High-Definition Multimedia Interface) is fully backward compatible with computers, displays and consumer electronics devices incorporating the DVI standards.
- This projector can be linked with video devices equipped with HDMI output terminal. However, with some of them, this projector may not display any image or not operate correctly.
- If this projector doesn't display any image or not operate correctly, see the operation manual of the video device for its connection.
- When you use the video equipment other than HDMI conformity product, the image may not be projected properly.
- Use of a long cable may decrease the quality of projected images.

Connection (for video equipment having an HDMI terminal)

- Use a commercially available HDMI (with HDMI logo) cable.
- Some cables may not be connected correctly depending on the size and shape of their connectors.



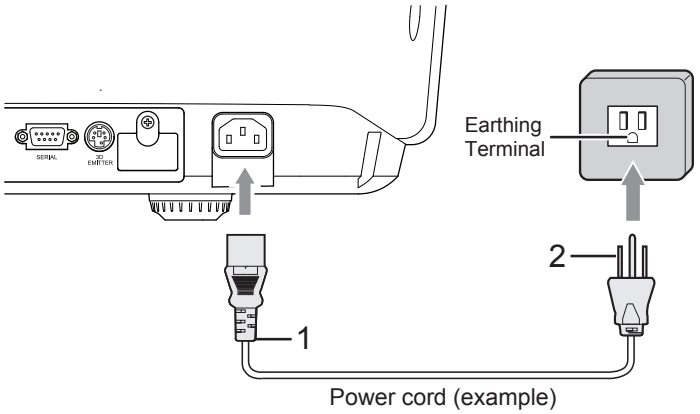
When you connect this projector and a Digital device (such as a DVD player) via the HDMI terminal, black color may appear dark and deep, depending on the type of the connected device.

- This depends on the black level setting of the connected device. There are two kinds of methods to digitally transfer image data, in which different black level settings are employed respectively. Therefore, the specifications of the signals output from DVD players differ, depending on the type of the digital data transfer method they use.
- Some DVD players are provided with a function to switch the methods to output digital signals. When your DVD player is provided with such function, set it as follows.

  EXPAND or ENHANCED → NORMAL
  - See the users guide of your DVD player for details.
- Set HDMI Input of Input menu and depending on the device to be used.

B. Plugging in the power cord

- In order to ensure the safety in case of trouble with the projector, use an electrical outlet having an earth leakage breaker to supply the power to the projector. If you do not have such outlet, ask your dealer to install it.



Power cord (example)

1. Plug the attached power cord into the power cord inlet of this projector.
2. Plug the other end of the power cord into a power outlet.

- The lens cap is for protecting the lens. If you leave the lens cap on the lens with the projector turned on, it may be deformed because of heat build-up. Remove the lens cap when you turn on the projector.
- One of power cords for the U.S., Europe, and U.K. is provided appropriately.
- This projector uses the power plug of three-pin grounding type. Do not take away the grounding pin from the power plug. If the power plug doesn't fit your wall outlet, ask an electrician to change the wall outlet.
- In case that the power cord for the U.S. is provided with this projector, never connect this cord to any outlet or power supply using other voltages or frequencies than rated. If you want to use a power supply using other voltage than rated, prepare an appropriate power cord separately.
- Use 100-240 V AC 50/60 Hz to prevent fire or electric shock.
- Do not place any objects on the power cord or do not place the projector near heat sources to prevent damage to the power cord. If the power cord should be damaged, contact your dealer for replacement because it may cause fire or electric shock.
- Do not modify or alter the power cord. If the power cord is modified or altered, it may cause fire or electric shock.

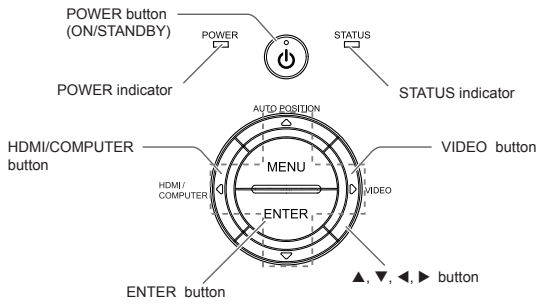
Caution:

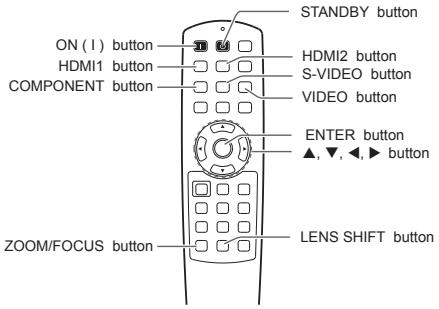
- Plug in the power cord firmly. When unplugging, hold and pull the power plug, not the power cord.
- Do not plug in or out the power cord with your hand wet. It may cause electric shock.

C. Projecting images

Preparation:

- Remove the lens cap.



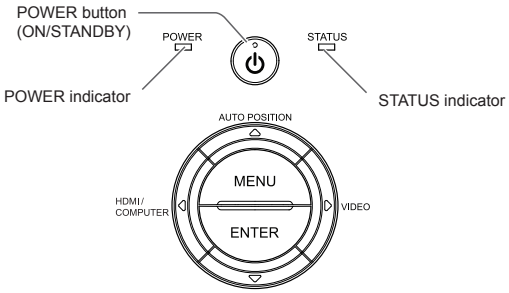


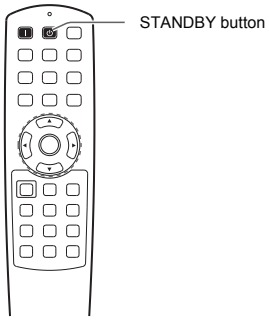
1. Put the projector into standby mode by pressing the main power switch. The POWER indicator lights up red.
   - If the projector was turned off before the lamp was cooled down sufficiently last time, the lamp may not light up even when the POWER button is pressed. In this case, turn off the main power switch and wait for a while (10 minutes or more) and then turn on the main power switch and press the POWER button to light up the lamp.
2. Turn on the power of the connected video equipment.
3. Press the POWER button on the projector or ON (I) button on the remote control.
   - It may take about 1 minute for the lamp to light up.
   - The lamp fails to light up on rare occasions. In such a case, wait for a few minutes and then try again.
   - Do not cover the lens with the lens cap while the lamp is on.
   - After the POWER button is pressed or the lamp mode is switched, the image may flicker before the lamp becomes stable. This is not a product malfunction.
   - The projector starts warming up when the POWER button is pressed. During the warm-up process, images may appear dark and no commands are accepted.
   - By steady orange, the STATUS indicator indicates that the lamp should be replaced soon. (When the STATUS indicator lights up red, replace the lamp.)
4. Press the ZOOM/FOCUS button on the projector or on the remote control to display “Lens Focus”.
5. Adjust with the ▲ or ▼ button to get a fine picture.
6. Select an input source.
   - Press the VIDEO or HDMI/COMPUTER button on the projector or the VIDEO, S-VIDEO, COMPONENT, HDMI1 or HDMI2 button on the remote control that is corresponding to the terminal in use.
   - The input source is switched between VIDEO, S-VIDEO and COMPONENT every time you press the VIDEO button on the projector.
   - The input source is switched between PC, HDMI1 and HDMI2 every time you press the HDMI/COMPUTER button on the projector.
   - The projector automatically selects the appropriate signal format. (The selected signal format is displayed on the Info menu.)
   - Though it may take some time before an image is displayed on the screen depending on the type of the input signal, such symptom is not a malfunction.
   - Some images become easier to view when the setting of aspect ratio is changed. (See page 20.)
   - When this projector is connected with an HDMI device supporting HDCP, such as a DVD player, image is not displayed correctly at the time of switching the input source on rare occasions. In such cases, switch to other input source and then switch back to the HDMI input source.
   - When COMPONENT is chosen as the source, images supplied from the computer may flicker. Adjust the setting of Phase of the Input menu to reduce flicker, if it occurs.
7. Adjust the position of the projector to keep an appropriate projection distance with which images are projected in their specified sizes.
8. Adjust the position of the projector so that the projector and the screen are perpendicular to each other. (See page 10.)
9. Press the ZOOM/FOCUS button on the projector or on the remote control to display “Lens Focus” and then press the button again to display “Lens Zoom.”

10. Adjust with the ▲ or ▼ button to get an approximate size while the Zoom menu is displayed.
11. Press the LENS SHIFT button. The Lens Shift menu appears at the center of the screen.
12. Press the ▲ or ▼ button to adjust the vertical position and ◀ or ▶ button to adjust the horizontal position of the displayed image.
    - Be careful not to be caught in the opening in the lens while the lens is moving.
    - When the projector cannot be positioned perpendicularly to the screen, adjust the projection angle. (See page 10.)

Repeat steps 4 to 5 and 9 to 12, if necessary.

To stop projecting:



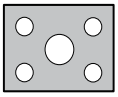
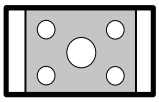
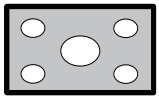
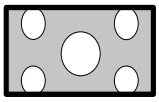
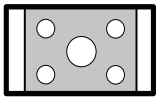
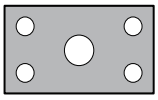
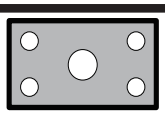
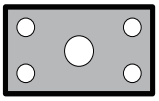
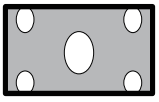
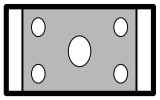
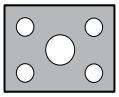
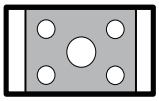
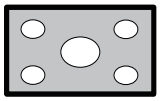
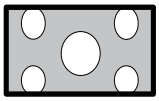
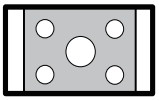
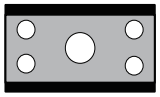
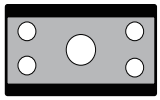
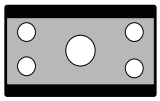
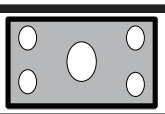
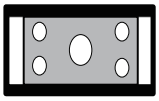


13. Press the POWER button on the projector or the STANDBY button on the remote control.
    - A confirmation message is displayed.
    - To cancel this condition, leave the projector for a while or press the MENU button.
14. Press the POWER button on the projector or the STANDBY button on the remote control again.
    - The lamp goes out and the projector goes into a standby mode. In this standby mode, the POWER indicator blinks red and the STATUS indicator goes out.
15. Wait about 2 minutes.
    - During this period of 2 minutes in the standby mode, the intake fan and exhaust fan rotate to cool the lamp.
    - The lamp can't be lit again for 1 minute after turning off the projector for safety purpose. If you want to turn on the projector again, wait until the indicator goes out, and then press the POWER button.
    - The air outlet fans make loud sounds as the temperature around the projector rises.
    - Do not turn off the main power switch or unplug the power cord while the POWER indicator is blinking. Turning off the main power switch or unplugging the power cord immediately after use may cause a breakdown.
    - Though the fan makes loud sound during cooling, such symptom is not a malfunction.
16. Turn off the main power switch.
    - The POWER indicator will go out.
    - If the main power switch should be turned off or the power cord should be unplugged accidentally while either the air inlet fan or the air outlet fans are operating or the lamp is on, allow the projector to cool down for 10 minutes with the power off. To light the lamp again, press the POWER button. If the lamp doesn't light up immediately, wait for a few minutes and then press the POWER button again. If it should still fail to light up, replace the lamp.
    - Cover the lens with the lens cap to protect it from dust.
    - For safety's sake, unplug the power cord from the outlet.

Setting the aspect ratio

You can change the aspect ratio of the input video signal (or the ratio of width to height of the image). Change the setting according to the type of the input video signal.

: Signal size

Original image size \ Setting		Standard	Full Screen	Anamorphic1	Anamorphic2
		Aspect ratio changes depending on the input signal.	Squeezed image is expanded to 16:9.	This mode is suitable for viewing 2.35：1-size images using the anamorphic lens.	This mode is suitable for viewing 16：9 or 4：3-size images or images input from personal computers using the anamorphic lens.
4:3 image (SD signal)					
16:9 image (HD signal)					
PC signal (4:3)					
2.35:1 image					

- Bold frames are recommended modes.
- When Aspect Ratio is set to Anamorphic1, display position can be changed with ▲ or ▼ button on the remote control.
- This projector is equipped with a function to change the aspect ratio. If you select an aspect ratio that is inconsistent with that of the input signal, images around the screen edges may be hidden or deformed. When viewing original video works reflecting the authors' intentions, you are recommended to keep their aspect ratios unchanged.
- It may be an infringement of the rights protected by the copyright law to project images compressed or enlarged by changing the aspect ratio in public areas, such as inside and outside shops and hotels, for commercial or public viewing purposes.

How to change the settings:

With the remote control:

1. Press the ASPECT button.
   - The screen for selecting the aspect ratio appears.
2. Select your desired aspect ratio by pressing the ASPECT button.
   - The aspect mode is switched between Standard, Full Screen, Anamorphic1 and Anamorphic2.
   - Some modes are not available with certain signals.

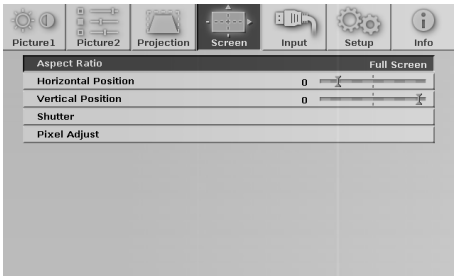
With the Screen menu:

(See page 34 for menu setting.)

1. Display the Screen menu.
2. Select Aspect Ratio by pressing the ▲ or ▼ button.
3. Select your desired aspect ratio by pressing the ◀ or ▶ button.

To cancel the menu:

4. Press the MENU button.



Important:

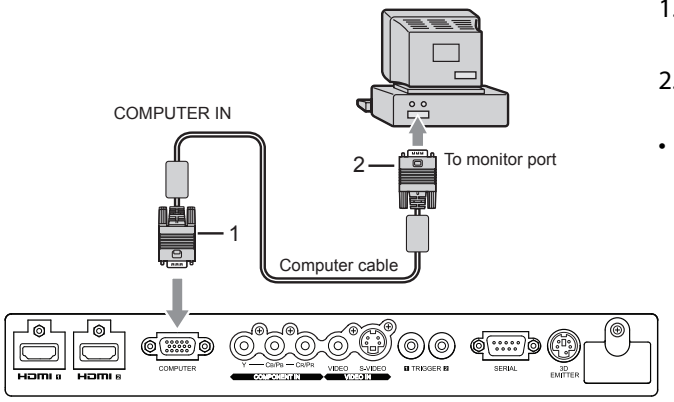
- In such cases as when you keep displaying images in the 4:3 mode or 2.35:1 mode for a long time and then change the mode to 16:9 mode, the masking areas may remain as afterimage around the display image. Consult your dealer in this case.

Viewing computer images

A. Connecting the projector to a computer

Preparation:

- Make sure that the power of the projector and that of the computer are turned off.
- When connecting the projector to a desktop computer, disconnect the computer cables that are connected to the monitor.



1. Connect one end of the supplied computer cable to the COMPUTER IN terminal of the projector.
2. Connect the other end of the computer cable to the monitor port of the computer.

- Additional devices, such as a conversion connector and an analog RGB output adapter, are required depending on the type of the computer to be connected.

- Turn on the power of the projector before that of the computer.
- Use of a long cable may decrease the quality of projected images.
- Also read the instruction manual of the equipment to be connected.
- Images may not be projected correctly, depending on the type of the computer connected.
- Contact your dealer for details of connection.

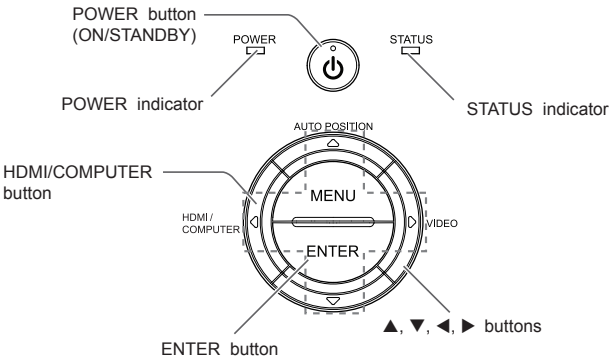
B. Plugging the power cord

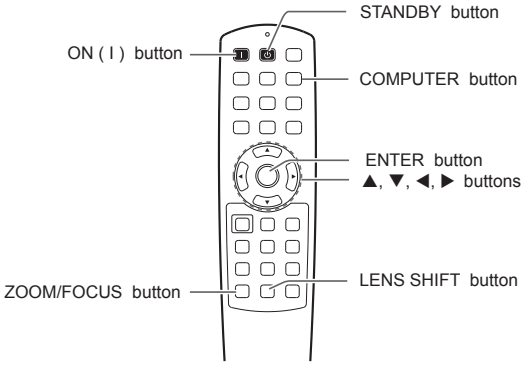
Plug the power cord in the same way as described in “Viewing video images.” (See page 17.)

C. Projecting images

Preparation:

- Remove the lens cap.





1. Put the projector into standby mode by pressing the main power switch. The POWER indicator lights up red.
   - If the projector was turned of before the lamp was cooled down sufficiently last time, the lamp may not light up even when the POWER button is pressed. In this case, turn off the main power switch and wait for a while (10 minutes or more) and then turn on the main power switch and press the POWER button to light up the lamp.
2. Turn on the power of the connected computer.
3. Press the POWER button on the projector or ON (I) button on the remote control.
   - It may take about 1 minute for the lamp to light up.
   - The lamp fails to light up on rare occasions. In such a case, wait for a few minutes and then try again.
   - Do not cover the lens with the lens cap while the lamp is on.
   - After the POWER button is pressed, or the lamp made is switched, the image may flicker before the lamp becomes stable. This is not a product malfunction.
   - The projector starts warming up when the POWER button is pressed. During the warm-up process, images may appear dark and no commands are accepted.
   - By steady orange, the STATUS indicator indicates that the lamp should be replaced soon. (When the STATUS indicator lights up red, replace the lamp.)
4. Press the ZOOM/FOCUS button on the projector or on the remote control to display “Lens Focus”.
5. Adjust with the ▲ or ▼ button to get a fine picture.
6. Select an input source.
   - Press the HDMI/COMPUTER button on the projector or the COMPUTER button on the remote control to select COMPUTER.
   - The input source is switched between PC, HDMI1 and HDMI2 every time you press the HDMI/COMPUTER button on the projector.
   - Though it may take some time before an image is displayed on the screen depending on the type of the input signal, such symptom is not a malfunction.
   - Images may not be projected in the correct position, depending on the type of the input signal. In such a case, carry out the auto position function. (See page 24.)
   - The projector automatically selects the appropriate signal format. (The selected signal format is displayed on the Info menu.)
   - You cannot change the input source while the menu is being displayed.
   - When COMPUTER is chosen as the source, images supplied from the computer may flicker. Adjust the setting of Phase of the Input menu to reduce flicker, if it occurs.
7. Adjust the position of the projector to keep an appropriate projection distance with which images are projected in their specified sizes.
8. Adjust the position of the projector so that the projector and the screen are perpendicular to each other. (See page 10.)
9. Press the ZOOM/FOCUS button on the projector or on the remote control to display “Lens Focus” and then press the button again to display “Lens Zoom.”
10. Adjust with the ▲ or ▼ button to get an approximate size while the Zoom menu is displayed.

11. Press the LENS SHIFT button. The Lens Shift menu appears at the center of the screen.
12. Press the ▲ or ▼ button to adjust the vertical position and ◀ or ▶ button to adjust the horizontal position of the displayed image.
    - Be careful not to be caught in the opening in the lens while the lens is moving.
    - When the projector cannot be positioned perpendicularly to the screen, adjust the projection angle. (See page 10.)

Repeat steps 4 to 5 and 9 to 12, if necessary.

To stop projecting:

13. Press the POWER button on the projector or the STANDBY button on the remote control.
    - A confirmation message is displayed.
    - To cancel this condition, leave the projector for a while or press the MENU button.
14. Press the POWER button on the projector or the STANDBY button on the remote control again.
    - The lamp goes out and the projector goes into a standby mode. In this standby mode, the POWER indicator blinks red and the STATUS indicator goes out.
15. Wait about 2 minutes.
    - During this period of 2 minutes in the standby mode, the intake fan and exhaust fan rotate to cool the lamp.
    - The lamp can't be lit again for 1 minute after turning off the projector for safety purpose. If you want to turn on the projector again, wait until the indicator goes out, and then press the POWER button.
    - The air outlet fans make loud sounds as the temperature around the projector rises.
    - Do not turn off the main power switch or unplug the power cord while the POWER indicator is blinking. Turning off the main power switch or unplugging the power cord immediately after use may cause a breakdown.
    - Though the fan makes loud sounds during cooling, such symptom is not a malfunction.
16. Turn off the main power switch.
    - The POWER indicator will go out.
    - If the main power switch should be turned off or the power cord should be unplugged accidentally while either the air inlet fan or the air outlet fans are operating or the lamp is on, allow the projector to cool down for 10 minutes with the power off. To light the lamp again, press the POWER button. If the lamp doesn't light up immediately, wait for a few minutes and then press the POWER button again. If it should still fail to light up, replace the lamp.
    - Cover the lens with the lens cap to protect it from dust.
    - For safety's sake, unplug the power cord from the outlet.

AUTO POSITION

When the image supplied from the computer is displaced, carry out the following procedure.

1. Display a bright image (such as a full-screen display of the Recycle Bin window).
2. When the screen saver has been enabled, disable it.
3. Use the Auto Position in the Input menu.

- Change the settings in the Input menu to put the image in the correct position. (See page 43.)
- If the image is not projected in the correct position even after you carry out the auto position setting several times, change the settings in the Screen menu to put the image in the correct position.(See page 37.)
- When you carry out this procedure with a dark image, the image may be displaced.

When connecting to a notebook computer:

When the projector is connected to a notebook computer, images may not be projected in some cases. In such cases, set the computer so that it can output signals externally. The setting procedure varies depending on the type of the computer. See the instruction manual of your computer.

Example of the setting procedure for external output

Press the [Fn] key and any of the keys [F1] to [F12] at the same time. (The key to be pressed depends on the type of the computer you use.)

Setting of the resolution

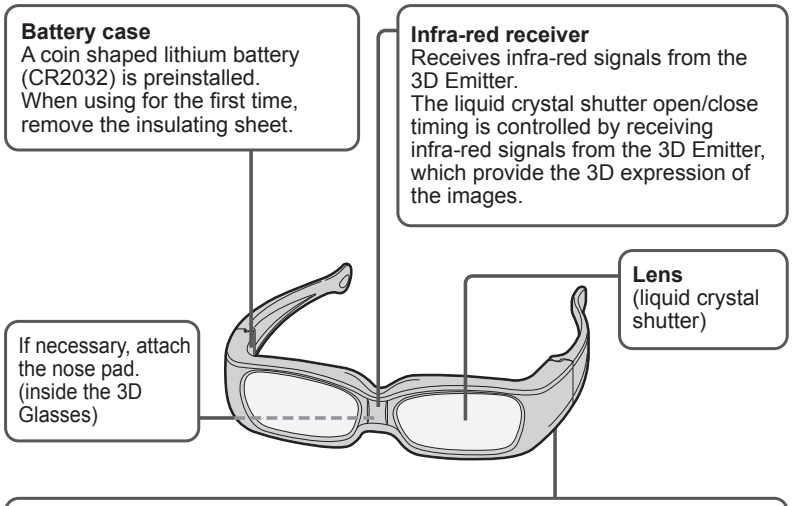
If the resolution of the computer doesn't match with that of the projector, projected images may be obscured. Ensure that their resolutions are the same (see page 55). For the method to change the output resolution of the computer, contact the manufacturer of the computer.

Viewing 3D images

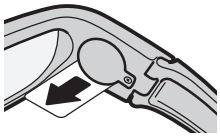
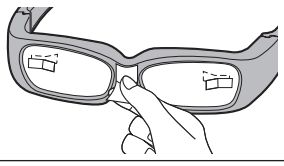
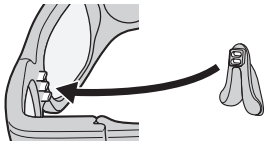
You can enjoy the 3D fun when you watch 3D movies with 3D Glasses. The 3D Glasses and 3D Emitter can be purchased individually; to view 3D images, the special 3D Glasses (EY-3DGS-1U) and 3D Emitter (EY-3D-EMT1) must be purchased.
Before use, read the user manual of the 3D Glasses and 3D Emitter.

3D Glasses (EY-3DGS-1U)

With the 3D Glasses and 3D Emitter, you can enjoy 3D images when you watch the 3D supporting programs on the projectors supporting 3D images.
You can wear the 3D Glasses over vision corrective glasses.



Preparations

1 Remove the insulating sheet. Pull the sheet slowly to the direction of the arrow in the below figure. 	**2 Remove the protective sheets.** Remove the protective sheets on the infra-red reception area and lens (4 parts) by pulling up each tab as shown below. 	**3 If necessary, attach the supplied nose pad.**  When you wear the 3D Glasses over vision corrective glasses, removing the nose pad is recommended.

Glasses(Liquid Crystal Shutter)

- Do not press the glasses too hard; and also do not fall on or bend them.
- Do not scratch the surface of the glasses with anything sharp.

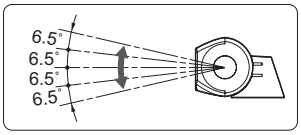
Infra-red transmission

- Do not contaminate the infra-red transmission and do not apply anything on it, because it makes the 3D infra-red transmission device not receive the signals and the glasses not operate normally.
- If there is other infra-red communication equipment interference, the 3D images can not be seen.
- The 3D Glasses may operate incorrectly when using the remote control, but this is not a failure. If you stop the operation of the remote control, it will return to normal.
- When you view 3D images,sometimes the remote control is out of order,but this is not failure.

Using 3D Glasses

- Do not use the machine which can generate electromagnetic waves (such as mobile telephone, etc.) near the 3D Glasses, which may cause incorrect actions of glasses.
- Use it between +32°F (0°C) to +104°F (+40°C).
- If you view in a room using a fluorescent lamp, the whole light in the room seems to blink. Therefore, the unit shall be placed as far from the fluorescent lamp as possible. If it continues, shut off the fluorescent lamp.
- Wear the 3D Glasses correctly. If not, you will not view the correct three-dimensional images.
- It is not clear to see other screens (such as computer images, digital clock, calculator, etc.) with the 3D Glasses, therefore, take off the 3D Glasses when viewing other images.
- The 3D Glasses are not sunglasses, so do not use as sunglasses.
- Do not use the 3D Glasses given at the cinema.
- You can not see the 3D images when you lie down with the 3D Glasses.
- Do not pull the temple of the glasses, it may cause break.

3D Emitter (EY-3D-EMT1)



Base part

Infra-red transmission part
This part transmits the infra-red signals.
The transmission angle can be adjusted vertically in five steps.

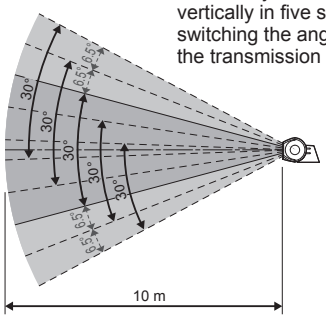
3D Emitter terminal
Connect this terminal to the 3D EMITTER terminal on the projector using the supplied mini DIN 5-pin cable.

Placement and connection of 3D Emitter

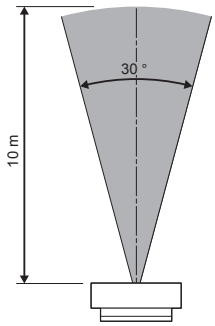
Transmission rang of the infra-red signal
This 3D Emitter transmits the infra-red signal in the range illustrated below.

View from the side

The transmission angle can be adjusted vertically in five steps by switching the angle of the transmission part.



View from the top



The above figures are approximate and may be slightly different from the actual measurements.

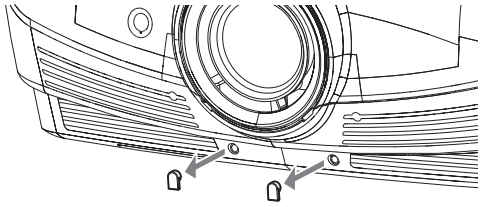
Place the 3D Emitter so that you can use the 3D Glasses within the transmission range described above.
Normally, attach the 3D Emitter to the projector as described on page 27.
However, if the 3D Glasses don't receive the signal properly when you attach the 3D Emitter to the projector, place the 3D Emitter according to the procedure described on page 27.

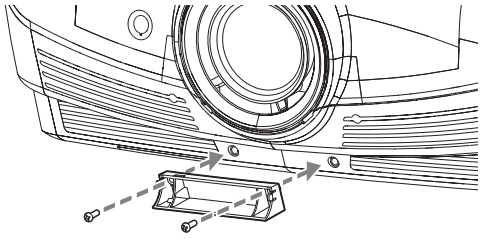
- Do not put any object which obstructs the communication between the 3D Emitter and the 3D Glasses.
- Do not place the 3D Emitter near the remote control sensor of other devices.
- The transmission distance is decreased when the infra-red signal from the 3D Emitter is transmitted to the 3D Glasses by reflecting on the screen. In addition, the transmission distance in such case varies depending on the characteristics of the screen.

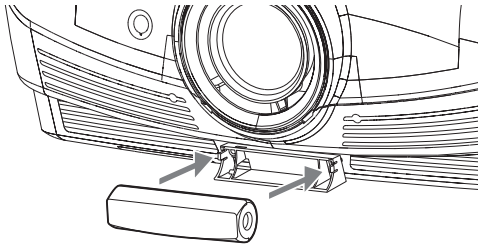
Attaching the 3D Emitter on the projector

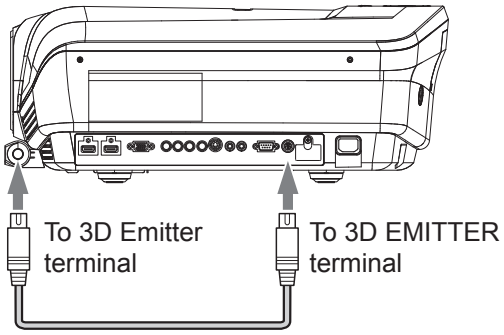
Preparation:
Turn off the power of the projector.

1. Remove the caps covering the 3D emitter attaching part on the projector.
2. Secure the base part of the 3D Emitter to the 3D Emitter attaching part on the projector using the supplied screws.
3. Put the infra-red transmission part of the 3D Emitter into the base part.
4. Connect the 3D Emitter terminal on the 3D Emitter to the 3D EMITTER terminal on the projector using the supplied mini DIN 5-pin cable (1 m).
5. Turn on the power of the projector and make settings for viewing 3D images.
6. Prepare the 3D Glasses.
7. Adjust the vertical angle of the 3D Emitter so that the 3D Glasses can receive the infra-red signal.









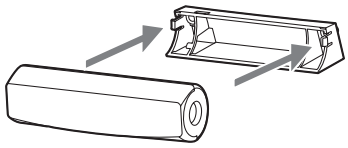
Mini DIN 5-pin cable (1 m)

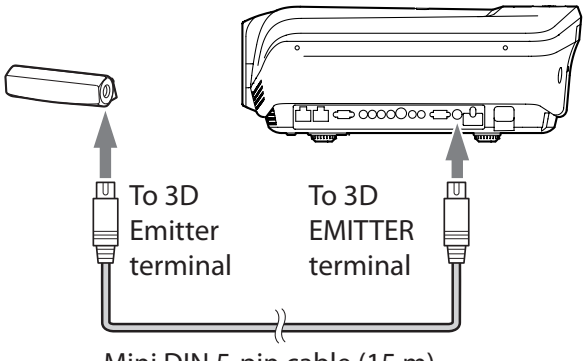
Placing the 3D Emitter in an arbitrary place

Preparation:
Turn off the power of the projector.

1. Put the Infra-red transmission part of the 3D Emitter into the base part.
2. Secure temporarily the 3D Emitter in an arbitrary place (such as the wall around the screen).
3. Connect the 3D emitter terminal on the 3D Emitter to the 3D EMITTER terminal on the projector using the supplied mini DIN 5-pin cable (15 m).
4. Turn on the power of the projector and make settings for viewing 3D images.
5. Prepare the 3D Glasses.
6. Adjust the position and angle of the 3D Emitter so that the 3D Glasses can receive the infra-red signal.

   • After completing the adjustment, fix the 3D Emitter firmly using the supplied double-sided tape, etc.



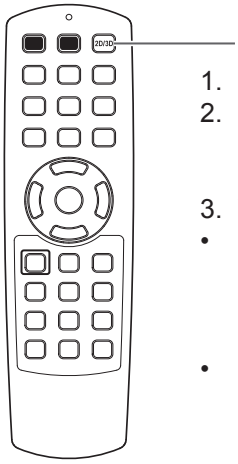


Mini DIN 5-pin cable (15 m)

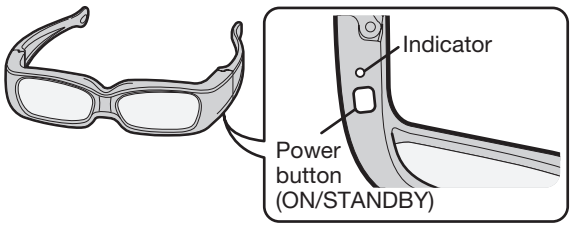
3D images viewing

This unit can convert the broadcast and signal input of the following 3D images into the three-dimensional image viewing.(as of January,2011)

- 3D images input via HDMI IN-1 or HDMI IN-2 terminal from the recorder/player corresponding to the 3D images.(Side by Side,Top and Bottom and Frame Packing)
- 3D images by the digital terrestrial broadcasting and BS digital broadcasting. (side by side) (For viewing the 3D image system with CATV (cable television), please consult CATV broadcasters or CATV providers.)



1. Project a 3D image on the screen.
2. Press the power button on the 3D Glasses for about 1 second to turn the power on.
3. Wear the 3D Glasses.
   - If the image can not switch to 3D automatically, it will not switch the 3D pictures. At this time, press the 2D/3D button on the remote control.
   - The settings is switched among AUTO, Frame Packing, Side by Side, Top and Bottom and 2D every time you press the 2D/3D button.



Switching the vision of the 3D images (3D Brightness, 3D Sync)

3D Brightness (See page 37.)

- You can adjust the brightness of the 3D images. The setting value becomes larger, the image viewing with the 3D Glasses becomes brighter.

3D Sync (See page 37.)

- When you feel uncomfortable while viewing the 3D images, the left and right of the 3D images may not synchronize with the left and right switch of the glasses of the 3D Glasses (Liquid Crystal Shutter). In this case, the uncomfortable feeling may disappear by reversing the left and right switching of the 3DGlasses with 3D Sync in the Input menu.

Visual distance of the 3D images

- When you view the 3D images, it is recommended to keep a distance from the screen about three times of the effective height of the screen.
- Viewing images from closer distance than the recommended distance may lead to deconditioning or eyestrain.
- The 3D Glasses may not work properly when it is used too far from the screen.
- Do not place any block in the communication area between the 3D Emitter and the 3D Glasses.

Viewing the 3D images

- Please read the 3D Glasses and 3D Emitter user manuals carefully before viewing the 3D images
- You can switch to 3D mode with the 2D/3D in the Input menu.
- When the unit is used in 3D mode (switch into the 3D setting) the indicator of the 3D Emitter lights up green.
- Switching the 3D mode (such as 3D setting system) of the recorder/player may be required when projecting 3D images from the recorder/player corresponding to 3D images. Read the user manual of the recorder/player for details.
- There are personal differences in viewing the 3D images. For persons with myopia, hypermetropia, astigmatism or left and right sights, please wear glasses to correct them then wear the 3D Glasses.
- The picture seems misplaced at the start of projecting the 3D images, however, this is not a malfunction.
- The menus can not be displayed while viewing the 3D images of Side by Side or Top and Bottom system. When you press the MENU button or STANDBY button, the mode switches from 3D to 2D. To view the 3D image again, switch the mode to 3D.
- The settings of Horizontal keystone, Vertical keystone, Anyplace, Pincushion/Barrel Adjust and Rotation Adjust of the Projection Application in the Projection menu are invalid (restored to the default settings) while you are watching the 3D images. The settings can not be changed.

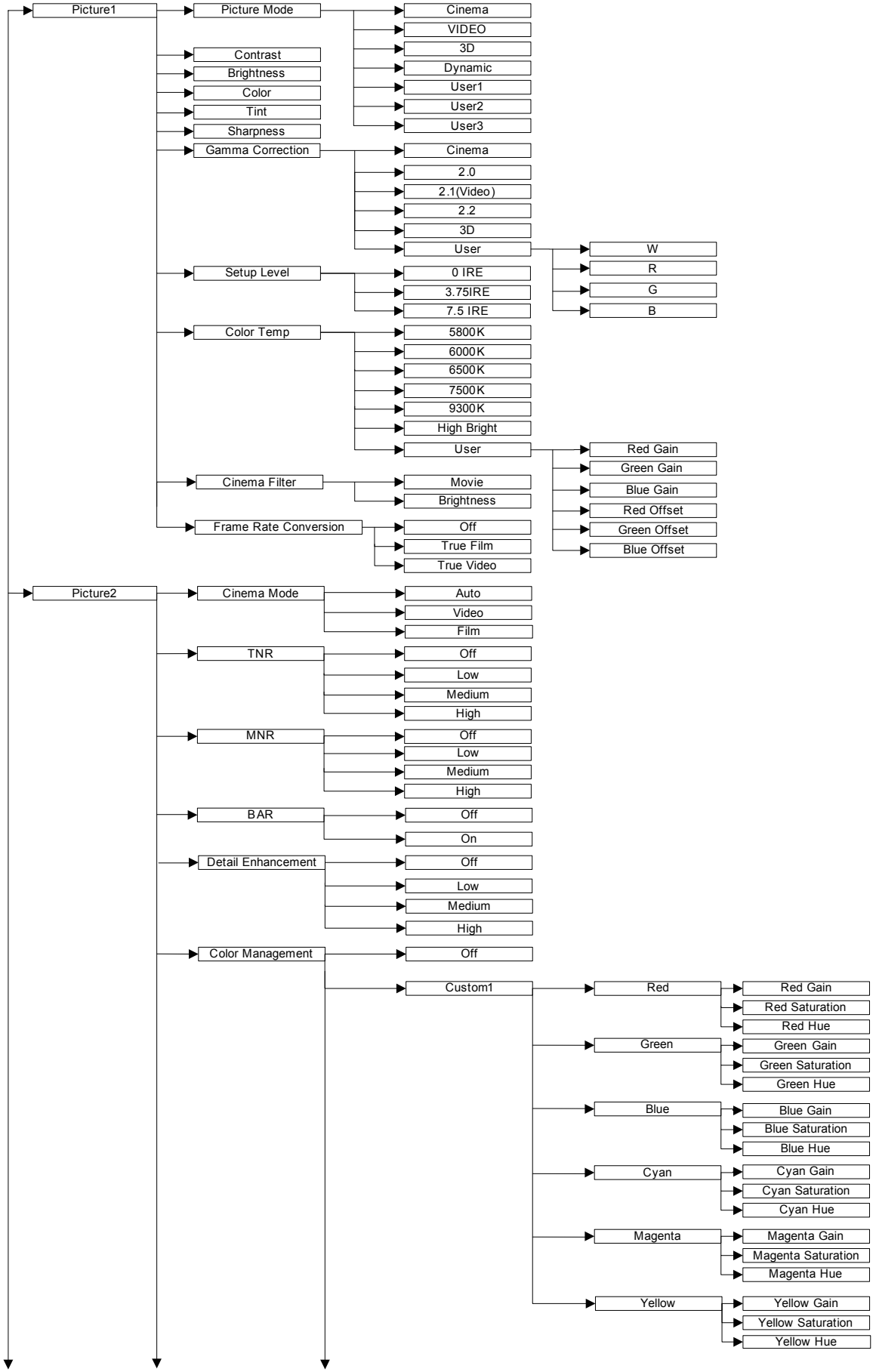
Cautions to view 3D images:

- Stop viewing the 3D image immediately if you feel tired, discomfort, or any other abnormality. It may cause you to feel unwell if continuing to watch the 3D image in such cases. Please take the necessary rest, do not continue watch the 3D image for a long time. Stop using the 3D Glasses if you can clearly see double images when viewing 3D content. Prolonged use may cause eyesight fatigue.
- When viewing the pictures that roll over and shake or many dynamic pictures, if you feel uncomfortable, please look at another place.

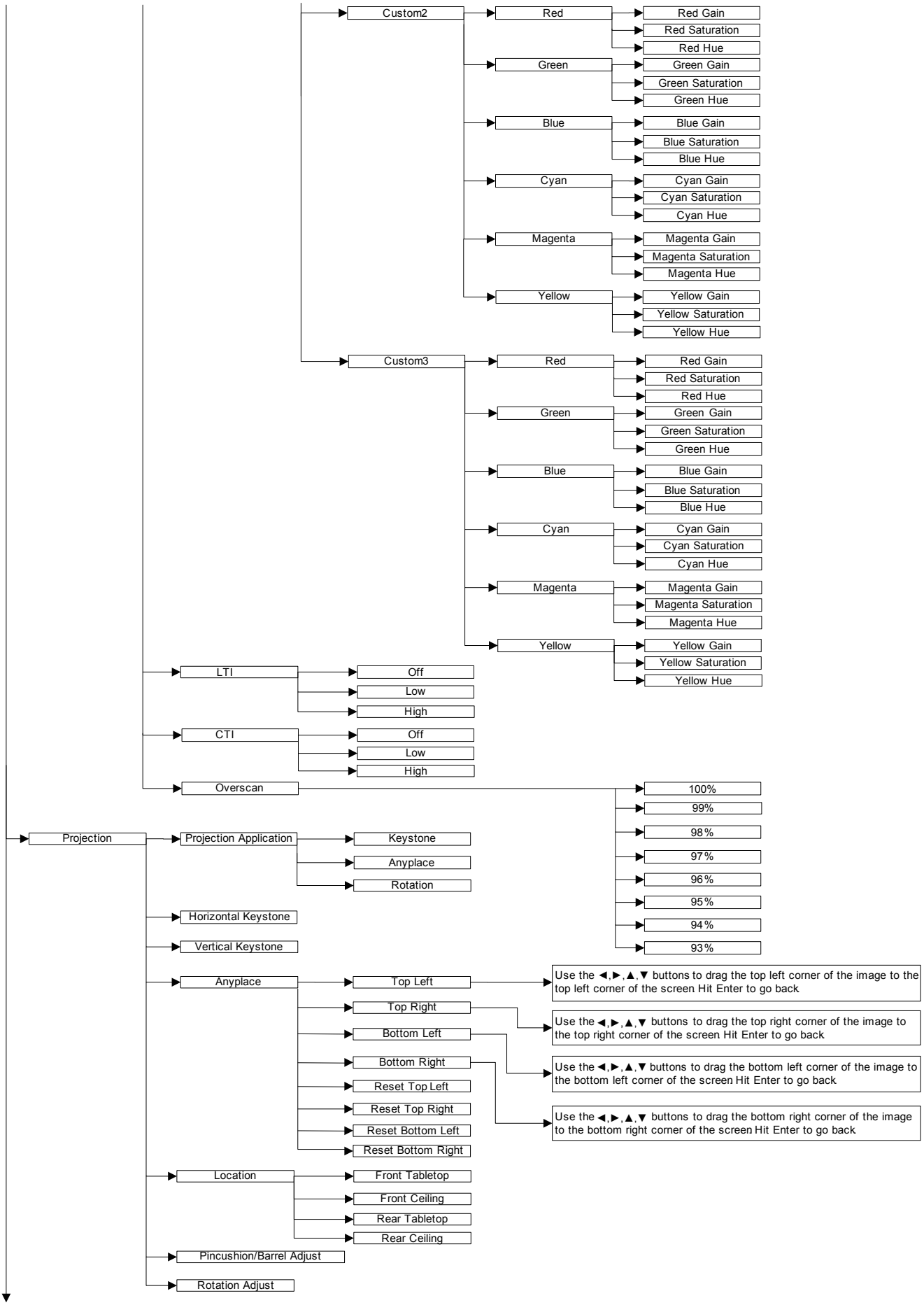
- Do not use the 3D Glasses if you have a history of over-sensitivity to light, heart problems, or have any other existing medical condition. Using the 3D Glasses may cause the symptoms to worsen.
- When watching 3D movies, take an appropriate break after watching a movie. When watching 3D content on interactive devices such as 3D games or computers, take an appropriate break every 30 - 60 minutes. Prolonged use may cause eyesight fatigue.
- When you feel uncomfortable, stop viewing 3D images and playing 3D games until you are restored. If necessary, consult a doctor. Also, stop driving a car until you are restored (for about 2 hours). The period to restore varies with the individual.
- As a guide, 3D Glasses should not be used by children younger than 5 - 6 years old. As it is difficult to judge younger children's reactions to fatigue or discomfort, their physical condition may deteriorate suddenly. When this product is being used by a child, the parent or guardian should check to ensure that the child's eyes are not becoming tired.
- Stop using the 3D Glasses immediately if you feel tired, discomfort, or any other abnormality. Continuing to use the 3D Glasses in such cases may cause you to feel unwell. Please take the necessary rest before continuing use.
- When using the 3D Glasses, be careful not to strike the screen or other people by mistake. As the images are in 3D, you may mistake the distance from the screen, causing to strike the screen which may result in injury.
  When using the 3D Glasses, do not place breakable objects near the glasses. You may move by mistaking the 3D objects you are viewing as the real objects, causing damages to surrounding objects that may lead to injury.
- Do not use if the 3D Glasses are cracked or broken. Doing so may result in injury or eyesight fatigue.
- If a malfunction or fault occurs in the 3D Glasses, stop use immediately. Continuing to use the 3D Glasses may result in injury, eyesight fatigue, or may cause you to feel unwell.
- Do not move around while wearing the 3D Glasses. The surrounding area appears dark, which may result in falling or other accidents that may cause injury.
- Do not drop, apply force on, or step on the 3D Glasses. Doing so may damage the glass section, which may result in injury. Always store the 3D Glasses in the supplied case when not in use.
- Use the 3D Glasses when viewing the 3D images.
- Use the 3D Glasses only for the specified purpose.
- When using the 3D Glasses, make sure your eyes are on an approximate horizontal level.
  If you suffer from myopia (short sightedness), hyperopia (far-sightedness), astigmatism, or have eyesight differences between the left and right eyes, please use corrective glasses or other such methods to correct your eyesight before putting on the 3D Glasses.
- When you view the 3D images, keep a distance from the screen of about three times the effective height of the screen.
- Stop using the 3D Glasses immediately if your skin feels unusual. In rare cases, the paint or materials used in the 3D Glasses may cause an allergic reaction.
  Stop using the 3D Glasses immediately if you experience any redness, pain, or itching on the nose or temples. Prolonged use may cause such symptoms due to excess pressure, which may result in the user feeling unwell.
- Be careful not to trap a finger in the hinge section of the 3D Glasses. Doing so may result in injury. Pay special attention when children are using this product.
- Be careful of the tips of the frame when putting on the 3D Glasses. Accidentally inserting the tip of the frame into the eye may cause injury.
- When connecting the projector and a player such as BD player through a HDMI signal distributor or AV amplifier via HDMI cable, make sure to use the HDMI signal distributor or AV amplifier supporting HDMI 1.4 (3D).
- This projector controls the open/close timing of the 3D glasses lenses (liquid crystal shutter) by using the infra-red signals received from the 3D emitter. Therefore, in rare cases, a remote control of other devices such as an air conditioner or lighting apparatus which uses the infra-red signals may not operate properly (while you are watching the 3D images). However, it is not a malfunction.

Menu operation

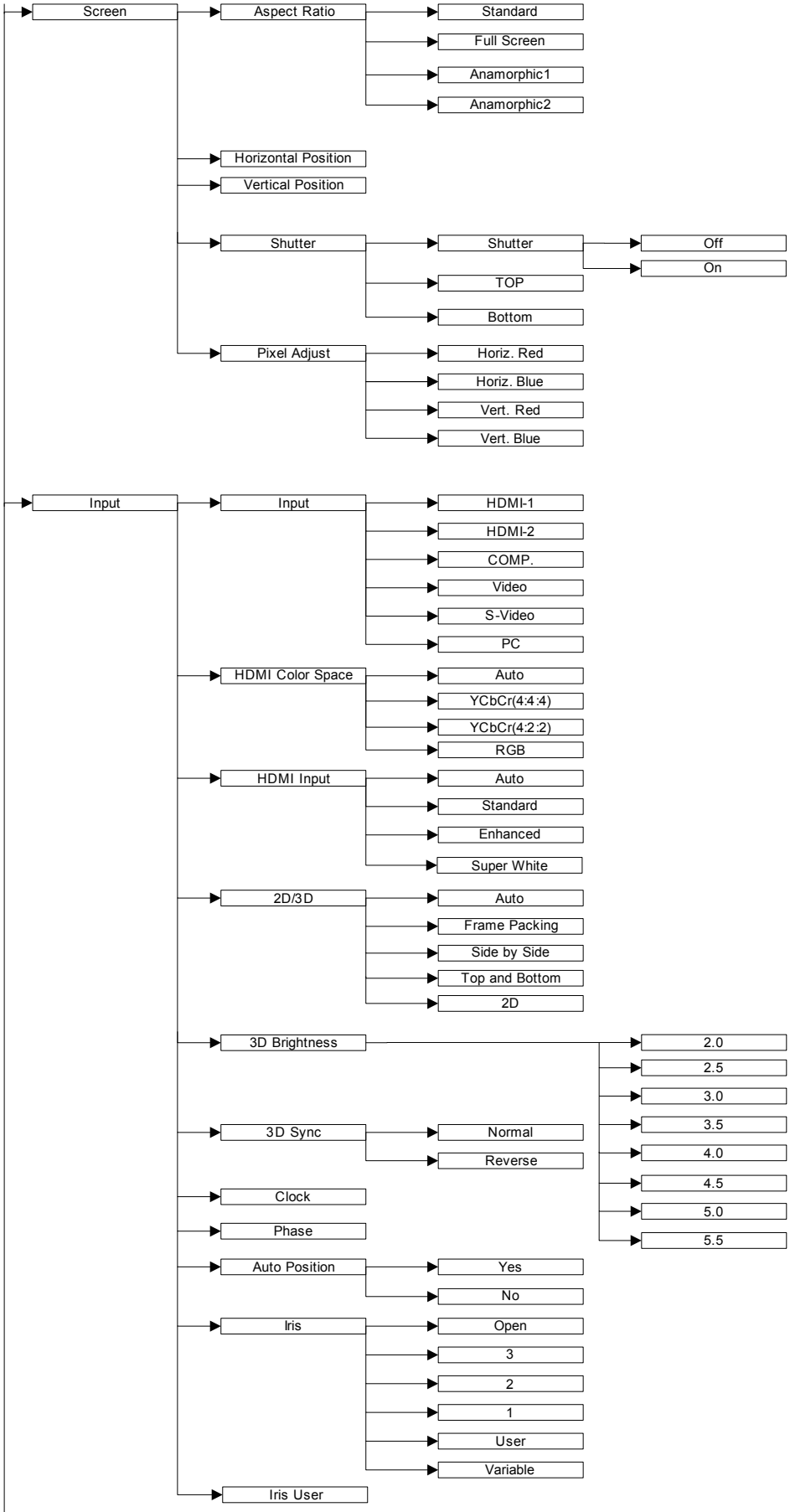
- Some menu items can't be operated or displayed depending on the input signal or signal format.



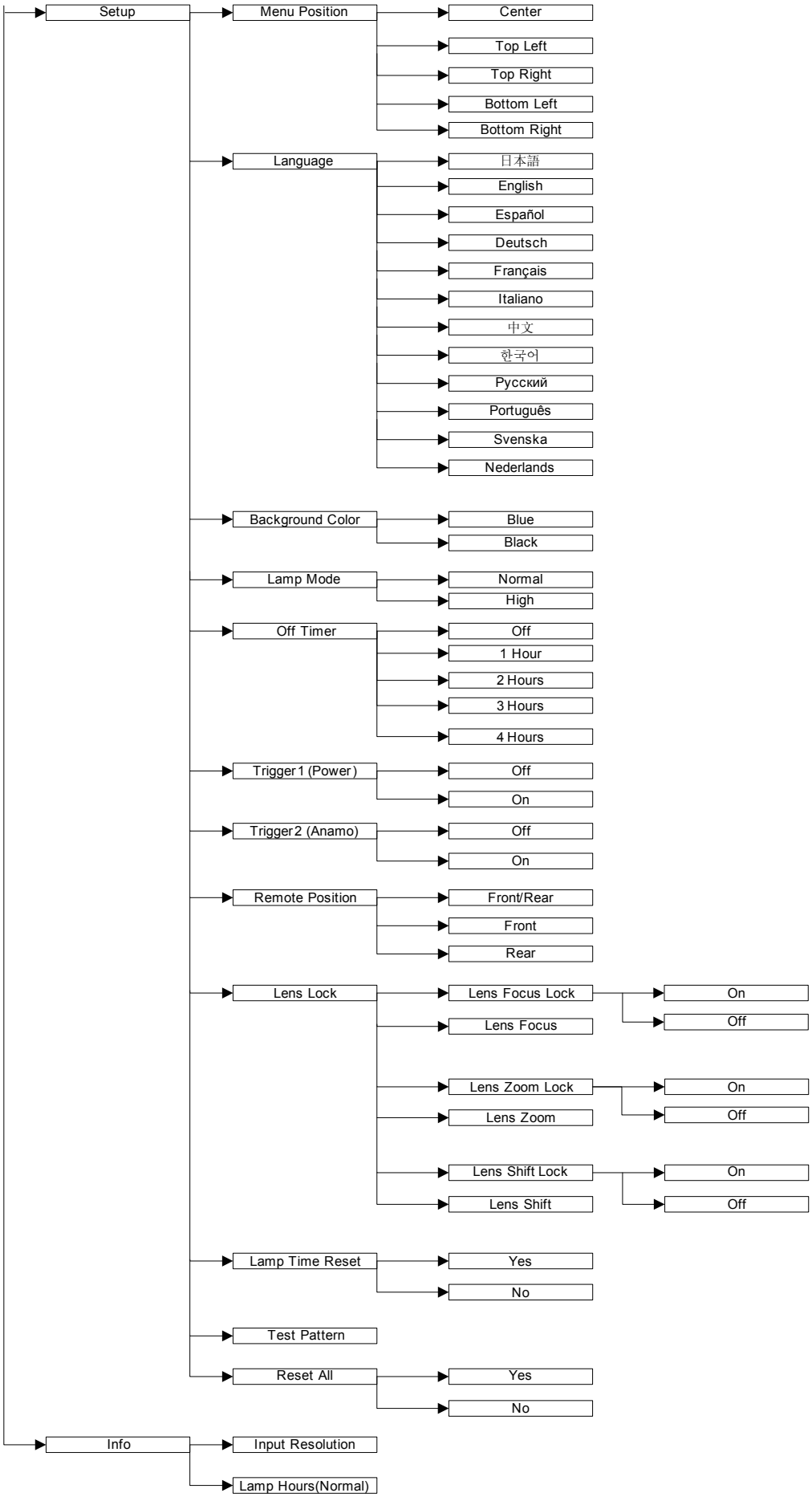
- Some menu items can't be operated or displayed depending on the input signal or signal format.



- Some menu items can't be operated or displayed depending on the input signal or signal format.



- Some menu items can't be operated or displayed depending on the input signal or signal format.

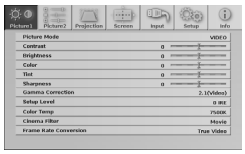


How to set the menus:

The following describes how to set Off Timer time as an example.

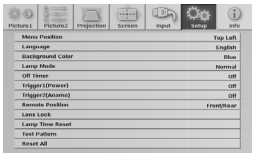
1. Press the MENU button.

• The menu selection bar is displayed.



2. Press the ◀ or ▶ button to select Setup menu.

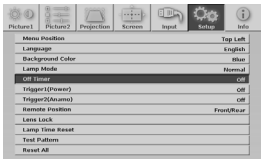
• Every time the ◀ or ▶ button is pressed, the menu switches among Picture 1, Picture 2, Projection, Screen, Input, Setup and Info.



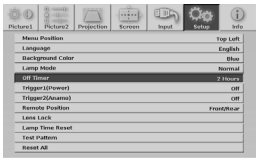
3. Press the ENTER button (or ▼ button).

• The item to set can be selected.

4. Press the ▲ or ▼ button to select Off Timer to adjust.



5. Press the ◀ or ▶ button to set the desired Off timer setting.



To cancel the menu:

6. Press the MENU button

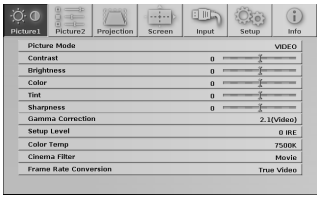
Important

- When the buttons don't function, unplug the power cord from the wall outlet. Wait about 10 minutes, plug the power cord in, and try again.
- After selecting the items marked with ↵, press the ENTER button.
- The menus and screens shown in this manual may be different from those of the actual projector.
- When you change the menu to set, press the ▲ button several times to select the menu selection bar and then start operation from step 2.

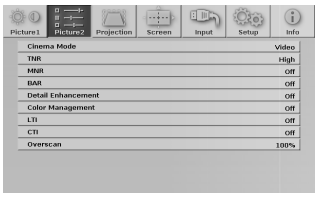
Available settings in the menus

Set the following items on their relevant menus.

1.Picture 1 menu



2. Picture 2 menu



1. Picture 1 menu

ITEM	SETTING	FUNCTION
Picture Mode	Cinema	This is a mode for watching movies in dim lighting as in a theater.
	VIDEO	This is a standard mode suitable for watching video images, etc.
	3D	This is a mode for watching 3D Film.
	Dynamic	This is a bright mode suitable for watching sports images.
	User1/ User2/ User3	Use to adjust and save the Picture Mode settings voluntarily.
Contrast	±50	Use to adjust the contrast of the projected image. (See page 39.)
Brightness	±50	Use to adjust the brightness of the projected image. (See page 39.)
Color	±50	Use to adjust the color thickness of the projected image. (See page 39.)
Tint	±50	Use to adjust the color tint of the projected image. (See page 39.)
Sharpness	±50	Use to adjust the sharpness of the projected image. (See page 39.)
Gamma Correction	Cinema	Use to attach greater importance to dark image quality. This is a mode for watching movies in dim lighting as in a theater.
	2.0	This is a bright mode suitable for watching sports images, etc.
	2.1(Video)	This is a standard mode suitable for watching video images, etc.
	2.2	This is a standard mode suitable for film material.
	3D	This is a brightest mode suitable for watching 3D movies.
	User	This is a mode to customize the gamma curve.

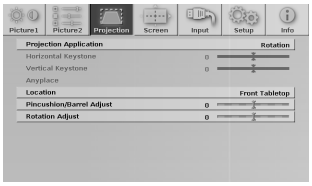
Setup Level	0 IRE		Select to make black lighter.
	3.75 IRE / 7.5 IRE		Select to black intense. When 7.5 IRE is selected, the brightness is decreased by the set-up cancel function for the U.S. Select 0 IRE when the image is dark.
Color Temp	5800K – 9300K		Use to adjust the color temperature. When the color temperature becomes lower, white color appears reddish. When it becomes higher, white color appears bluish. (See page 40.)
	High Bright		This is the mode with high regard for brightness.
	User	Red Gain	Use to adjust red brightness.
		Green Gain	Use to adjust green brightness.
		Blue Gain	Use to adjust blue brightness.
		Red Offset	Use to adjust red offset.
		Green Offset	Use to adjust green offset.
		Blue Offset	Use to adjust blue offset.
Cinema Filter	Movie		The color range of green and cyan will be expanded.
	Brightness		The filter function is not added.
Frame Rate Conversion	Off		A 96Hz driver provides four times in the input of 24P, realizing a speed of film. This mode is suitable for playing games as this mode does not cause the image delay due to conversion.
	True Film		Use to produce the sharp images, leaving frame-by-frame feeling unique to films.
	True Video		Use to reduce blurring of the moving images by interpolating the video images.

2. Picture 2 menu

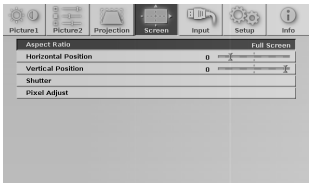
ITEM	SETTING			FUNCTION
Cinema Mode	Auto			The film mode will be automatically activated when a film source signal is input. Select Auto for normal use. When flicker occurs on the screen, frame dropping or other incorrect display occurs, or jaggies on slanting lines are remarkable, select either Film or Video, which improves the symptom better.
	Video			The film mode will not be activated.
	Film			Fixed to the film mode.
TNR	Off			The reduction of random noise is not carried out. (See page 41.)
	Low/Medium/High			The degree to reduce the random noise is adjusted. (See page 41.)
MNR	Off			The reduction of mosquito noise is not carried out. (See page 41.)
	Low/Medium/High			The degree to reduce the mosquito noise is adjusted. (See page 41.)
BAR	Off			The reduction of block noise is not carried out. (See page 41.)
	On			The reduction of block noise is carried out. (See page 41.)
Detail Enhancement	Off			The detail of the image is compensated emphatically. (See page 41.)
	Low/Medium/High			The degree of image compensation is adjusted. (See page 41.)
Color Management	Off			Color management is not carried out.
	Custom 1 - 3	Red	Red Gain	The range of red color is adjusted.
			Red Saturation	The saturation degree of red color is adjusted.
			Red Hue	The hue of red color is adjusted.
		Green	Green Gain	The range of green color is adjusted.
			Green Saturation	The saturation degree of green color is adjusted.
			Green Hue	The hue of green color is adjusted.
		Blue	Blue Gain	The range of blue color is adjusted.
			Blue Saturation	The saturation degree of blue color is adjusted.
			Blue Hue	The hue of blue color is adjusted.
		Cyan	Cyan Gain	The range of cyan color is adjusted.
			Cyan Saturation	The saturation degree of cyan color is adjusted.
			Cyan Hue	The hue of cyan color is adjusted.
		Magenta	Magenta Gain	The range of magenta color is adjusted.
			MagentaSaturation	The saturation degree of magenta color is adjusted.
			Magenta Hue	The hue of magenta color is adjusted.
		Yellow	Yellow Gain	The range of yellow color is adjusted.
			Yellow Saturation	The saturation degree of yellow color is adjusted.
			Yellow Hue	The hue of yellow color is adjusted.

LTI	Off	The contour of the signal is not reinforced.
	Low/High	The contour of the signal is reinforced.
CTI	Off	The blur around the color boundary is not improved.
	Low/High	The blur around the color boundary is improved.
Overscan	100% - 93%	Use to adjust the display area of the projected image when playing blu-ray discs.

3. Projection menu



4. Screen menu



3. Projection menu

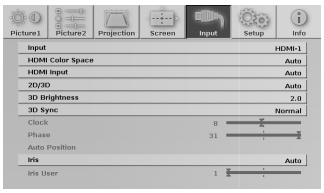
ITEM	SETTING	FUNCTION
Projection Application	Keystone	Use to correct keystone distortion.
	Anyplace	Use to adjust the image position.
	Rotation	Use to rotate the image.
Horizontal Keystone	-40 to 40	Use to adjust horizontal keystone distortion.
Vertical Keystone	-30 to 30	Use to adjust vertical keystone distortion.
Anyplace	Top Left	Use to adjust the top left position of the image.
	Top Right	Use to adjust the top right position of the image.
	Bottom Left	Use to adjust the bottom left position of the image.
	Bottom Right	Use to adjust the bottom right position of the image.
	Reset Top Left	Use to reset the setting of Top Left.
	Reset Top Right	Use to reset the setting of Top Right.
	Reset Bottom Left	Use to reset the setting of Bottom Left.
	Reset Bottom Right	Use to reset the setting of Bottom Right.
Location	Front Tabletop	Select when viewing images from the front with the projector installed on the floor.
	Front Ceiling	Select when viewing images from the front with the projector installed on the ceiling.
	Rear Tabletop	Select when viewing images projected from the behind of the screen with the projector installed on the floor.
	Rear Ceiling	Select when viewing images projected from the behind of the screen with the projector installed on the ceiling.
Pincushion / Barrel Adjust	-20 to 20	Displays the horizontal and vertical distortion correction.
Rotation Adjust	-180 to 180	Use to adjust the rotation angle of the image.

- The settings of Horizontal keystone, Vertical keystone, Anyplace, Pincushion/Barrel Adjust and Rotation Adjust of the Projection Application in the Projection menu are invalid (restored to the default settings) while you are watching the 3D images. The settings can not be changed.

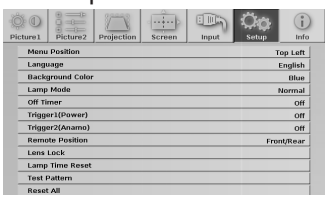
4.Screen menu

ITEM	SETING		FUNCTION
Aspect Ratio	Standard		Select to change the aspect ratio automatically depending on the input signal.
	Full Screen		Select to project images with an aspect ratio of 16:9.
	Anamorphic1		This mode is suitable for viewing 2.35:1-size images using the anamorphic lens. Use the ▲ or ▼ key to adjust the vertical display position. This mode doesn't support input signals from personal computers.
	Anamorphic2		This mode is suitable for viewing 16:9- or 4:3-size images or images input from personal computers using the anamorphic lens.
Horizontal Position	The setting range depends on the input signal.		Use to adjust the horizontal position of the projected image.
Vertical Position	The setting range depends on the input signal.		Use to adjust the vertical position of the projected image.
Shutter	Shutter	Off	Use to deactivate the shutter function.
		On	Use to activate the shutter function.
	Top		Use to adjust the upper black bar of the image when Shutter is set to On.
	Bottom		Use to adjust the Lower black bar of the image when Shutter is set to On.
Pixel Adjust	Horiz. Red/Horiz. Blue/ Vert. Red/Vert. blue		Use to adjust a slight color shift to the horizontal and vertical directions.

5. Input menu



6. Setup menu



5. Input menu

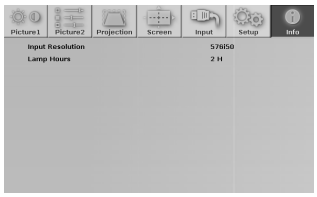
ITEM	SETTING	FUNCTION
Input	HDMI-1	Switch the input terminal to HDMI-1.
	HDMI-2	Switch the input terminal to HDMI-2.
	Comp.	Switch the input terminal to COMPONENT.
	Video	Switch the input terminal to VIDEO.
	S-Video	Switch the input terminal to S-VIDEO.
	PC	Switch the input terminal to COMPUTER.
HDMI Color Space	Auto	The proper color space setting is automatically selected.
	YCbCr(4:4:4)	Select this option when connecting the projector to a device having YCbCr(4:4:4) output terminals.
	YCbCr(4:2:2)	Select this option when connecting the projector to a device having YCbCr(4:2:2) output terminals.
	RGB	Select this option when connecting the projector to the DVI terminal of the personal computer or video equipment having R, G, and B output terminals.
HDMI Input	Auto	Use to automatically set the signal level when using HDMI input.
	Standard	In normal use, select this option when connecting the projector to the video equipment such as a DVD player.
	Enhanced	Select this option when connecting the projector to the DVI terminal of the personal computer or the player is set to enhance mode.
	Super White	Select when solid white occurs.
2D/3D	Auto	Automatically distinguish the input signal and display in 2D or 3D.
	Frame Packing	Select when displaying the 3D signal images of frame packing system.
	Side by Side	Select when displaying the 3D signal images of side by side system.
	Top and Bottom	Select when displaying the 3D signal images of top and bottom system.
	2D	Select when displaying the 2D images. When displaying the 3D images of side by side or top and bottom system with this option, the image for left eye and right eye will be displayed separately at the left and right or top and bottom of the screen.
3D Brightness	2.0 to 5.5	Adjust the brightness of the image when viewing with the 3D Glasses.
3D Sync	Normal	In normal use, select this option when viewing image with the 3D Glasses.
	Reverse	Select this option when the right and left images are reversed when displaying 3D images.
Clock		Use to eliminate flickering or blur, if it appears, while viewing the projected image. (See page 43.)
Phase		Use to eliminate vertical wide stripes, if it appears, while viewing the projected image. (See page 43.)
Auto Position		Select this option and press ENTER to automatically adjust the projected image. When the confirmation screen appears, select Yes to automatically adjust the screen position and phase of the image.
Iris	Open	The iris is kept fully opened.
	3	The iris is closed. Select this option to make black color of the image deeper.
	2	Select to make black color of the image brighter.
	1	Select to make black color of the image more brighter than 2.
	User	Use this option to select the customized setting of iris.
Iris User	Variable	The iris is adjusted according to the brightness of the image.
	0 to 18	The iris setting is voluntarily set.(This option can be used when User is selected in Iris).

6. Setup menu

ITEM	SETTING	FUNCTION
Menu Position	Center/Top Left/Top Right/Bottom Left/ Bottom Right	Use to change the position of the menu.
Language	12 languages	Use to select the language used in the menus: 日本語, English, Español, Deutsch, Français, Italiano, 中文, 한국어, Русский, Português, Svenska, Nederlands.
Background Color	Blue	Use to select blue as the background color when there is no signal input from the source.
	Black	Use to select black as the background color when there is no signal input from the source.
Lamp Mode	Normal	Select to moderate the intensity of the lamp. The operating sound is reduced.
	High	Select this option when you want to view images in a well-lit room.
Off Timer	Off	Does not use the Off Timer function.
	1 Hour	When no video signal is input and no operation is made for 1 hour, the projector automatically turns off.
	2 Hours	When no video signal is input and no operation is made for 2 hours, the projector automatically turns off.
	3 Hours	When no video signal is input and no operation is made for 3 hours, the projector automatically turns off.
	4 Hours	When no video signal is input and no operation is made for 4 hours, the projector automatically turns off.
Trigger1 (Power)	Off / On	When this option is set to On, the trigger output signal (12 V) is output from the TRIGGER terminal when the lamp lights up.
Trigger2 (Anamo)	Off / On	When this option is set to On, the trigger output signal (12 V) is output from the TRIGGER terminal when the aspect ratio is set to ANAMORPHIC 1 or ANAMORPHIC 2.
Remote Position	3 Options	Set the position of remote infrared receiver to front or rear.
Lens Lock	Lens Focus Lock	Use to enable or cancel the Focus Lock.
	Lens Focus	Adjust the focus of the screen. Press ENTER to display the focus adjustment dialog and adjust the focus by pressing the ▲ or ▼ button. (See page 18.)
	Lens Zoom Lock	Use to enable or cancel the Lens Zoom Lock.
	Lens Zoom	Adjust the size of the screen. Press ENTER to display the zoom adjustment dialog and adjust the zoom by pressing the ▲ or ▼ button. (See page 18.)
	Lens Shift Lock	Use to enable or cancel the Lens Shift Lock.
	Lens Shift	Adjust the position of the screen. Press ENTER to display the lens shift adjustment dialog and adjust the position by pressing the ▲, ▼, ◀ or ▶ button. (See page 12.)
Lamp Time Reset	Yes / No	The lamp operation time is reset to 0.
Test Pattern	9 options	Display the selected test pattern on the projected screen.
Reset All	Yes/No	The menu settings are reset to the factory defaults (except the Language and Lamp Time Reset settings).

- When the lamp mode is switched, the projected image may flicker. This is not a product malfunction.
- Do not change the setting of Lamp Mode frequently.
- It may take a little while to carry out Reset All in the Setup menu.

7. Info menu



7. Info menu

ITEM	DESCRIPTION
Input Resolution	Display the resolution of the image signal being projected.
Lamp Hours(Normal)	Display the lamp operating time. (unit: hours)

- The Lame Hours is calculated based on that Lamp Mode is Normal.

Adjusting projected images

To adjust the brightness (Contrast and Brightness):

You can make adjustments for the brightness of the projected image using the menu.
(See page 34 for menu setting.)

1. Display the Picture 1 menu.
2. Select Contrast or Brightness by pressing the ▲ or ▼ button.
3. Adjust the selected item by pressing the ◀ or ▶ button.

To cancel the menu:

4. Press the MENU button.

Contrast

Select to adjust the contrast of the image. Every time the ▶ button is pressed, the image becomes brighter and more defined. Every time the ◀ button is pressed, the image becomes darker and less defined.

Brightness

Every time the ▶ button is pressed, the image becomes brighter. Every time the ◀ button is pressed, the image becomes darker.

To adjust the color (Color and Tint):

You can adjust the color of the projected image using the menu.
(See page 34 for menu setting.)

1. Display the Picture 1 menu.
2. Select Color or Tint by pressing the ▲ or ▼ button.
3. Adjust the selected item by pressing the ◀ or ▶ button.

To cancel the menu:

4. Press the MENU button.

Color

Use to adjust the color intensity of the projected image. Every time the ▶ button is pressed, the color intensity increases. Every time the ◀ button is pressed, the color intensity decreases.

Tint

Use to adjust the tint of the projected image. Every time the ▶ button is pressed, the image appears more greenish. Every time the ◀ button is pressed, the image appears more reddish.

To sharpen or soften the projected image (Sharpness):

You can adjust the sharpness of the projected image using the menu.
(See page 34 for menu setting.)

1. Display the Picture 1 menu.
2. Select Sharpness by pressing the ▲ or ▼ button.
3. Adjust the selected item by pressing the ◀ or ▶ button.

To cancel the menu:

4. Press the MENU button.

To adjust the tone of white (Color Temp.):

You can select a preset color temperature (white tone) using the menu.
(See page 34 for menu setting.)

1. Display the Picture 1 menu.
2. Select Color Temp. by pressing the ▲ or ▼ button.
3. Select your desired color temperature by pressing the ◀ or ▶ button.
   The color temperature of each option is as follows:
   5800K, 6000K, 6500K, 7500K, 9300K, High Bright, User.

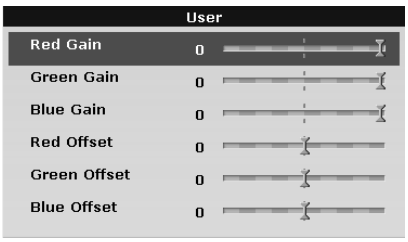
To cancel the menu:

4. Press the MENU button.

To adjust the tone of white (To customize the color temperature):

To customize (and store) the color temperature to your preference, carry out the following procedure.
(See page 34 for menu setting.)

1. Select Color Temp. in the Picture 1 menu.
2. Press the ◀ or ▶ button to select User ↵.
3. Press the ENTER button.
4. Press the ▲ or ▼ button to select the desired item.
5. Press the ◀ or ▶ button to adjust the selected item.
6. Repeat steps 4 and 5 for optimum adjustment results.



To cancel the menu:

7. Press the MENU button.

You can set Brightness, Contrast, Color/Tint, and Sharpness by each button on the remote control and also can select a preset color temperature (white tone) by COLOR TEMP. button on the remote control.

About color temperature

There are different kinds of white color. Color temperature is a way to show the differences in white. White of which temperature is low appears reddish. When the color temperature rises, white appears bluish. For example, you can change the color temperature using the following procedures.
To rise the color temperature: Increase the Blue Gain and decrease the Red Gain.
To reduce the color temperature: Decrease the Blue Gain or Green Gain and increase the Red Gain.

- If you set all of R, G, B Gain to negative values, the original brightness of the image can't be obtained even when you maximize Contrast in the Picture 1 menu.

To optically brighten or darken projected images (Iris):

Iris is a function to optically adjust the contrast by opening or closing the aperture of the lamp. This projector is equipped with the following 6 modes to adjust the iris.

Open: The iris is kept fully opened.
3: This mode is the deeper black than the other modes.
2: This mode is darker than the mode1 but brighter than mode3.
1: This mode provides is the more brighter than the mode 2 and mode 3.
User: Allow user to define their prefer brightness level.
Variable: The iris is adjusted in stages when displaying dark images.

To adjust the original ratio of change in brightness (To customize the Gamma Correction):

To customize (and store) the Gamma Correction to your preference, carry out the following procedure.
(See page 34 for menu setting.)

1. Display the Picture 1 menu.
2. Select Gamma Correction by pressing the ▲ or ▼ button.
3. Press the ◀ or ▶ button to select User ↵ .
4. Press the ENTER button.
5. Press the ▲ or ▼ button to select desired Adjust item(W,R,G,B).
6. Press the ENTER button.
7. Press the ▲ or ▼ button to select desired item.
8. Press the ◀ or ▶ button to adjust the gamma value.
9. Repeat steps 5 - 8 for optimum adjustment results.

To store Gamma Correction setting:

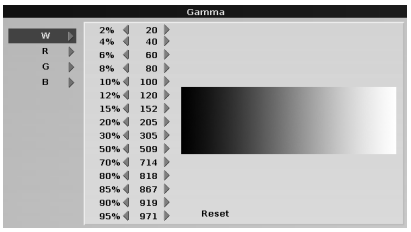
10. Press the MENU button to store the adjusted gamma setting in the memory.

To cancel the Gamma Correction:

11. Select Reset and press the ENTER button to reset the gamma setting back to the default values.

To enable the stored gamma mode:

12. Select User by pressing the GAMMA button on the remote control.



• Change in the brightness may be hard to recognize in some images.

Noise reduction

This projector has the following noise reduction functions. However, these functions don't work with 720p, 1080i, and 1080p signals and signals supplied from computer.

TNR (temporal recursive noise reduction)
Reduces random noise appearing in projected images.

MNR (mosquito noise reduction)
Reduces mosquito noise appearing around sharp edges in DVD images.

BAR (block artifact removal)
Reduces block noise or mosaic-like patterns appearing in DVD images.

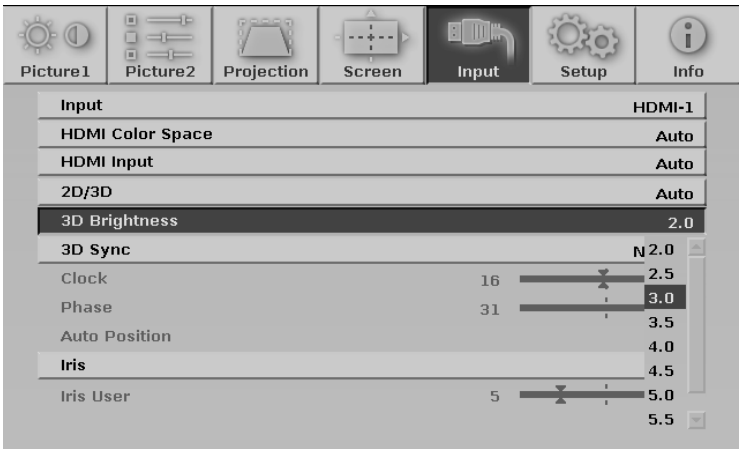
To adjust the 3D Brightness:

You can adjust the 3D Brightness of the projected image using the menu. This menu is available only in 3D mode.
(See page 34 for menu setting.)

1. Display the Input menu.
2. Press the ▲ or ▼ button to select 3D Brightness.
3. Press the ENTER button.
4. Press the ▲ or ▼ button to select the desired item.
5. Press the ENTER button to select the desired value.

To cancel the menu:

6. Press the MENU button.



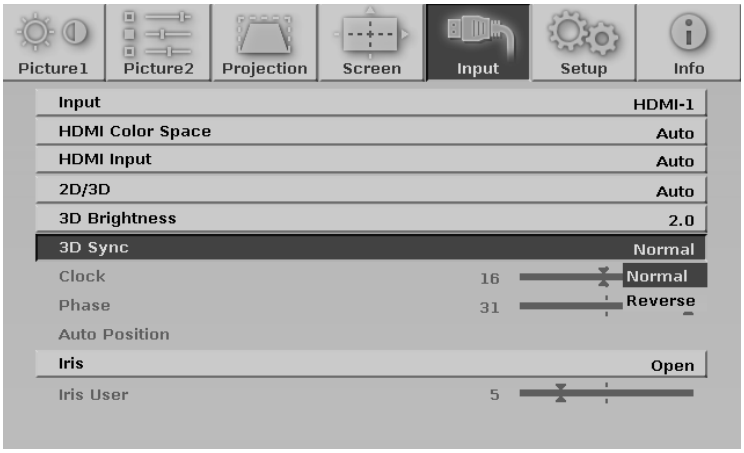
To adjust the 3D Sync:

You can adjust the 3D Sync of the projected image using the menu. This menu is available only in 3D mode.
(See page 34 for menu setting.)

1. Display the Input menu.
2. Press the ▲ or ▼ button to select 3D Sync.
3. Press the ENTER button.
4. Press the ▲ or ▼ button to select the desired item.
5. Press the ENTER button to select the item.

To cancel the menu:

6. Press the MENU button.



This projector automatically and properly projects video signals supplied from the computer. However, some video signals may not be projected, depending on the type of the computer. In such a case, Use the Auto Position function to (See page 24.) adjust the projected image using the Input menu.

How to adjust the image supplied from the computer using the menu:

Carry out the following procedures according to the symptoms.

Wide strips appear.....Adjust Clock in the Input menu.
The projected image flickers.....Adjust Phase in the Input menu.
The projected image is blurred.....Adjust Phase in the Input menu.
The projected image is displaced horizontally. .....Adjust Horizontal Position in the Screen menu. Every time the ◀ button is pressed, the image moves to the Left. Every time the ▶ button is pressed, the image moves to the Right.
The projected image is displaced vertically. .....Adjust Vertical Position in the Screen menu. Every time the ◀ button is pressed, the image moves down. Every time the ▶ button is pressed, the image moves up.
Noise appears on the top or bottom part of the image. ..Adjust Shutter (Top) or Shutter (button) in the Screen menu.

1. Display the Screen menu.
2. Press the ▲ or ▼ button to select an item to adjust.
3. Adjust the selected item by pressing the ◀ or ▶ button.

To cancel the menu:

4. Press the MENU button.

- Do not change the settings of the Screen menu in normal use.

Simple method to adjust the image position

To adjust the horizontal position:

1. Align the left edge of the image with the left side of the screen by adjusting Horizontal Position. Then, align the right edge of the image with the right side of the screen by adjusting Horizontal Position.
2. Repeat step 1 above to complete the adjustment of the horizontal position.

To adjust the vertical position:

3. Align the upper edge of the image with the upper side of the screen by adjusting Vertical Position. Then, align the lower edge of the image with the lower side of the screen by adjusting Vertical Position.

Replacing the lamp

This projector is equipped with a lamp to project images. This lamp is a consumable. It may burn out or its brightness may decrease during use. In such cases, replace the lamp with a new one as soon as possible. Be sure to replace the lamp with a new lamp sold separately that is exclusive to this projector. Contact your dealer for purchase of the lamp.

Spare lamp	VLT-HC9000LP

Warning:

- Be careful not to drop the lamp fixing screws inside of the projector. Don't put a metal piece or flammable object into the projector. Using the projector with any foreign object present inside may result in electric shock or fire. When you can't remove the foreign object from the inside, contact your dealer for removal.
- Be sure to install the lamp securely. When the lamp isn't installed properly, it won't illuminate. Improper installation may also result in fire.
- Don't shake the removed lamp or don't lift it above your face. Your eyes may be injured by flying or falling glass fragments.
- Don't replace the lamp immediately after use because the lamp cover will be very hot. You may get burned. Turn off the power using the POWER button. After the lamp goes out, wait about 2 minutes until the intake and exhaust fans for cooling the lamp stop rotating. Then turn off the main power switch, unplug the power cord, and wait at least 1 hour to allow the lamp to cool down enough to the touch.
- Do not touch the lamp directly. It may break and cause injury or burn.

Interval of lamp replacement

The recommended interval of lamp replacement is about 4000*1*2 hours of consecutive use. Such interval differs depending on the operating environment and may be shorter than 4000 hours*1*2. When the lamp operation time exceeds 3800*1hours, the STATUS indicator will be lit in orange only to warning the lamp life will be excess, and the lamp replacement message (LAMP replacement) will appear on the screen. When the MENU button is pressed, the lamp replacement message will disappear but the indicator still keep lighting in orange. When the lamp operation time exceeds 4000 hours*1*2, and the STATUS indicator lights up in red, the lamp automatically turns off 10 minutes after the "LAMP replacement" message appears on the screen until the lamp is replaced and the lamp operation time is reset. (See page 45)

*1: Duration when LAMP MODE of the Setup menu is set to Normal. When it is set to High, this duration will be shorted.

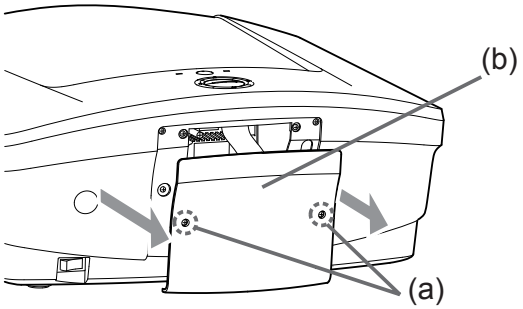
*2: When Lamp Mode is set to High, this duration will be shorted to 2000 hours.

Caution:

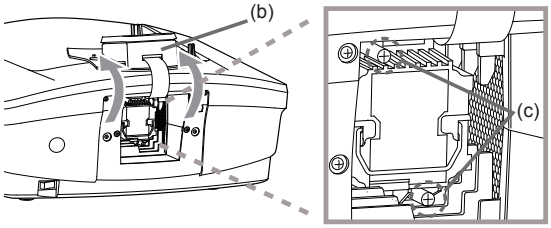
- Don't remove the lamp for any purpose other than replacement. Unnecessary removal of the lamp may result in a breakdown.
- This projector uses a high-pressure mercury lamp as the light source. The high-pressure mercury lamp may explode or fail to illuminate permanently because of an impact, scratch, or deterioration through use. The period of time until explosion or permanent failure to illuminate varies considerably from lamp to lamp, depending on operation conditions. Therefore, the lamp may explode soon after the start of use.
- The possibility of explosion of the lamp increases if you use it beyond its replacement period. When the instruction of lamp replacement appears, replace it with a new one immediately even if the lamp is still lighting normally.
- When the high-pressure mercury lamp explodes, glass fragments will scatter inside or outside the lamp box and the gas charged inside the lamp will diffuse inside or outside the projector. The gas inside the lamp contains mercury. Be careful not to breathe it or avoid it from entering your eye or mouth. If you should breathe it or if it should enter your eye or mouth, see a doctor immediately.
- In the event that the high-pressure mercury lamp exploded, glass fragments may have been scattered inside the projector. Ask your dealer to replace the lamp and to inspect the inside of the projector. When you clean or replace the lamp by yourself, be sure to hold the handle of the lamp. You may get injured by glass fragments.
- When removing the lamp from the ceiling-mounted projector, use the lamp replacement tray packed with the projector or option lamp to prevent glass fragments from scattering.
- Be sure to use the lamp exclusive to this projector, VLT-HC9000LP. Use of other lamps may cause a failure of the projector.

To replace the lamp:

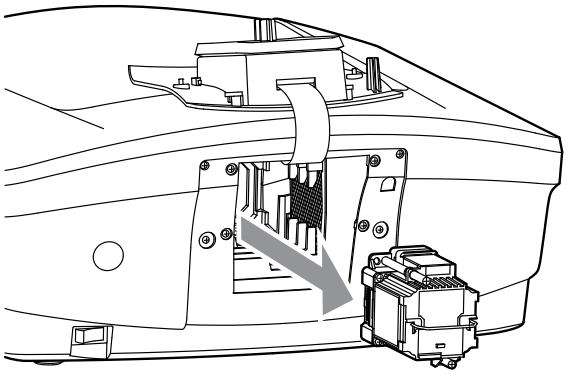
1. Turn off the main power switch and unplug the power cord.
2. Loosen 2 screws (a) using a Phillips screwdriver (+) and remove the rear side lamp cover (b) from the projector.



3. Loosen 2 screws (c) using a Phillips screwdriver (+).

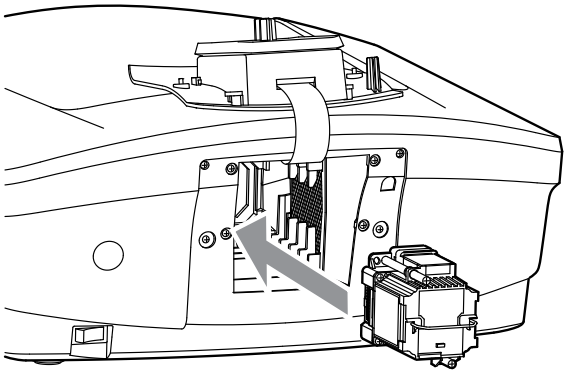


4. Pull the handle.
5. Pull out the lamp box by the handle while holding the projector.

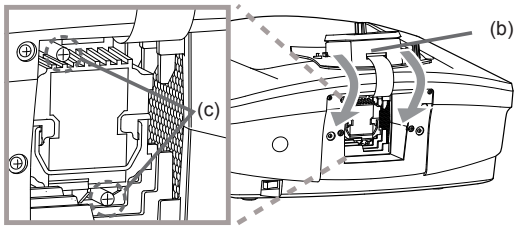


- Pull the lamp box out of the projector slowly. If it is pulled out quickly, the lamp may break scattering glass fragments.
- Do not spill liquid on the removed lamp box or do not place it near any flammable object or where children can reach to prevent injury or fire.

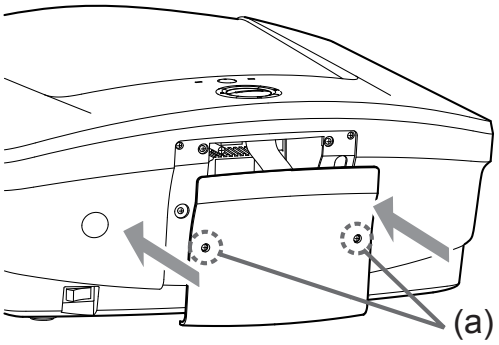
6. Load a new lamp box securely into the projector in the right orientation.



7. Put the handle back to the original position.
   - Make sure that the handle is locked.
8. Tighten up 2 screws (c) using a Phillips screwdriver (+).



   - Make sure that the screws are tightened firmly.
9. Attach the rear side lamp cover (b) to the projector and fix it with 2 screws (a).



   - Make sure that the screws are tightened firmly.

Reset of the lamp operation time

10. Plug the power cord into the wall outlet and turn on the main power switch.
11. Display the Setup menu. (See page 34 for menu setting)
12. Press the ▼ button to select Lamp Time Reset.
13. Press the ENTER button to display the Confirm selection.
14. Select Yes to confirm.

Important:

- Make sure the Lamp Hours(Normal) in Info. menu reset back to 0 Hours.
- The projector doesn't turn on if the lamp cover isn't attached securely.
- Be sure to reset the Lamp Hours(Normal) whenever you replace the lamp.
- Do not reset the Lamp Hours(Normal) unless you replace the lamp.
- The lamp is fragile. If it is broken, be careful not to cut yourself with glass fragments.

Caution:

- This projector uses a lamp that contains mercury. Disposal of the lamp or the projector with the lamp may be regulated due to environmental considerations. For disposal or recycling information, please contact your local authorities or the Electronic Industries Alliance: www.eiae.org. (For the U.S. only.)

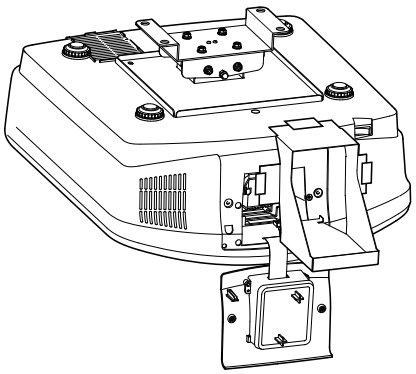
When removing the lamp from the ceiling-mounted projector

When removing the lamp from the ceiling-mounted projector, use the lamp replacement tray packed with the projector or option lamp to prevent glass fragments from scattering.

- Assemble the lamp replacement tray according to the procedure shown on it.

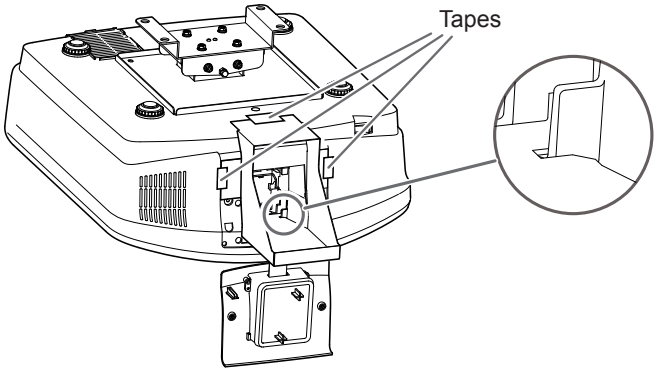
1. Follow steps 1 to 4 on page 45.

2. Attach the lamp replacement tray to the projector as shown in the figure.

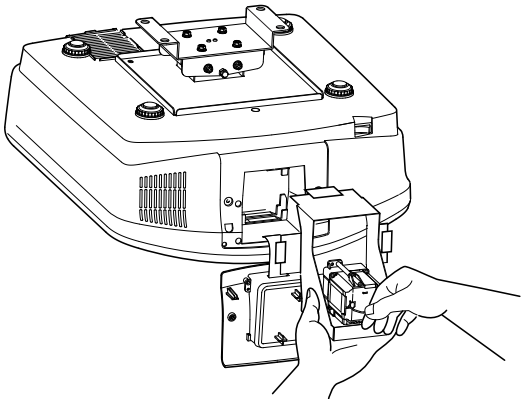


3. Secure the lamp replacement tray on the projector using the tapes packed with the tray.

4. Pull out the lamp box by the handle while holding the projector.
   - Hold the lamp replacement tray to prevent glass fragments from scattering.
   - Don't put the lamp directly on the lamp replacement tray because it may fall.



5. Detach the lamp replacement tray together with the removed lamp.



6. Follow steps 6 to 14 on page 45.

Maintenance

Warning:

- Never use flammable air duster or other materials when cleaning the air-filter. Flammable substances may ignite causing fire or backdown when the lamp is illuminated.
- Do not use flammable solvents (benzene, thinner, etc.) and flammable aerosols when cleaning the projector body and lens. Flammable substances may ignite causing fire or breakdown while the lamp is illuminating.

Caution:

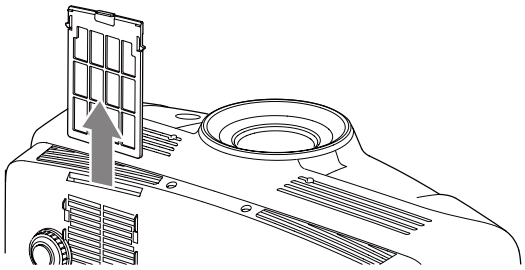
Be sure to turn off the lamp and unplug the power cord from the wall outlet before you perform any maintenance on the projector.

Cleaning of the air-filter

Clean the air-filter frequently (about once a month). If the filter or ventilation grilles become clogged with dirt or dust, the temperature inside the projector may rise and cause troubles, such as damage to the inside parts and shortening the life of the panels.

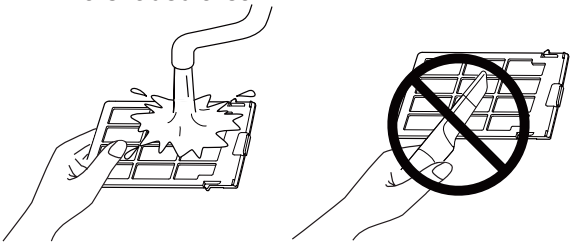
- When the temperature inside the projector rises, the STATUS indicator will blink orange and green and the lamp will be turned off.

1. Remove the air-filter.



2. Wash the air-filter or change it with a new filter.

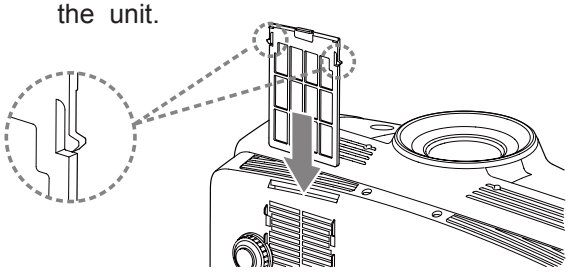
- Use water or diluted mild detergent to clean the filter.
- Rinse the filter thoroughly and let it dry completely in a shaded area.



- Do not clean the filter with a vacuum cleaner. The filter is soft and may be damaged.

3. Attach the air-filter.

- Check that the left and right claws are locked onto the unit.



Important:

- If the filter is damaged or becomes extremely dirty, change it with a new filter. Contact your dealer for a new filter.
- Use the dedicated filter only.

Caution:

Be sure to use the projector with an air-filter. If not, dust may get inside the projector causing fire and failure.

Cleaning of the projector and the ventilation slots

Use a soft cloth to clean the projector and the ventilation grilles. When the grilles become dirty, wipe them with a soft cloth dampened with diluted mild detergent, and then wipe them with a dry cloth.

To protect the surface of the projector from fading or deteriorating:

- Do not spray insecticide on or inside the projector.
- Do not use benzine or thinner to clean it.
- Do not let rubber or plastic materials contact with projector.

Cleaning of the lens

Use a standard lens-cleaning brush or a piece of lens tissue dampened with lens cleaning fluid. The lens surface is fragile. Use only recommended, nonabrasive lens-cleaning materials. Do not touch the lens with your fingers.

Troubleshooting

Before asking for repair of the projector, check the following. If the symptom persists, stop using the projector, be sure to unplug the power plug, and then contact your dealer.

No image appears on the screen.

<table>
<tr><th>Problem</th><th>Solution</th></tr>
<tr><td>Power can not be turned on.</td><td>• Check whether the indicators are on or off and how they are lightning.
<table>
<tr><th>POWER</th><th>STATUS</th><th>Solution</th></tr>
<tr><td>Off</td><td>Off</td><td>• Connect the power cord to the projector.
• Plug the power cord into a wall outlet.
• Turn on the main power switch.</td></tr>
<tr><td>Steady red</td><td>Blinking orange and green</td><td>• If any objects are blocking the air inlet or outlet grill, remove them and carry out the following.
1. Turn off the main power switch.
2. Make sure that the projector has cooled off.
3. Turn on the main power switch.
4. Press the POWER button.
• Don’t expose the air outlet grilles to hot air emitted from a heating appliance.
• Check whether the filter is clogged with dirt or dust.
→ Clean the filter, if clogged.
• Attach the lamp cover.</td></tr>
</table></td></tr>
<tr><td>No image appears on the screen.</td><td>• Check that the lens cap is removed.
• It may take about 1 minute for the lamp to light up.
• The lamp fails to light up on rare occasions. In such a case, wait for a few minutes and then try again.
• If the projector was turned off before the lamp was cooled down sufficiently last time, the POWER button may not work after the main power switch is turned on. After the temperature back to normal condition rotating, then press the POWER button to turn back on the POWER indicator.
• Check that the intake vent is clean.
• Check that the lamp cover is closed.
• Check that the cables connected to the external devices are not broken.
• When an extension cable is being used, replace it with the supplied cable for check. When images are displayed correctly, add an RGB signal amplifier to the extension cable.
• When connecting the projector through a HDMI Signal Distributor or AV amplifier via the HDMI cable, make sure that the HDMI Signal Distributor or AV amplifier support HDMI 1.3 Deep Color.
• Check the operation manual of the video device for its connection.</td></tr>
<tr><td>Power turns off.</td><td>• This problem may occur when the intake vent and/or exhaust vents are blocked. (In such a case, the STATUS indicator blinks red and green.)
→ Remove the objects blocking the intake vent and/or exhaust vents and then carry out the following procedure.
1. Wait for the intake fan and/or exhaust fan to stop. (Wait until the STATUS indicator goes out.)
2. Turn off the main power switch.
3. Wait at least 10 minutes.
4. Turn on the main power switch.
5. Press the POWER button.
• When the STATUS indicator is steady red, it is indicating that the lamp should be replaced. Replaced the lamp in this case.
• Check that Off Timer has been set to off.
• If the lamp has deteriorated, it may go out after a while it illuminates.</td></tr>
</table>

No image appears on the screen. (continued)

Problem	Solution
"NO SIGNAL" is displayed.	• Turn on the power of the connected device, or check whether there is something wrong with the connected device. • Check whether the external device output signals. (Check this especially when the external device is a notebook computer.) • Check that the cable connected to the external device isn't defective. • Check that the projector is connected to the external device using the correct terminals. • Check that the connected device is correctly selected as the input source. • When an extension cord is being used, replace it with the supplied cable and check whether images are projected correctly. If images are projected correctly, use an RGB signal amplifier along with the extension cord.
Images may be jagged when connecting the projector using the HDMI cable. "NO SIGNAL" is displayed when connecting the projector using the HDMI cable.	• Make sure if the cable is firmly plugged into the connecting terminal. • To accept and display 1080p signals on the screen, make sure to use a high-speed HDMI cable that can transmit 1080p signals. • When connecting the projector through a HDMI Signal Distributor or AV amplifier via the HDMI cable, make sure that the HDMI Signal Distributor or AV amplifier support HDMI 1.3 Deep Color.

Images are not displayed correctly.

Problem	Solution
Projected images are shaking. Projected images are displaced.	• Check that the cable connected to the external device isn't intermittent. • Connect the cable's plug with the external device's connector firmly. • Some computers output out-of-spec signals on rare occasion. Adjust the Input menu. • (See page 43.)
Projected images are distorted.	• Adjust the projector and the screen so that they are perpendicular to each other. • (See page 10.)
Projected images are dark.	• Adjust Brightness and Contrast in the Picture 1 menu. (See page 39.) • Replace the lamp. (See page 44 and 45.)
Projected images are blurred.	• Adjust the focus. (See pages 18 and 23.) • Clean the lens. (See page 27.) • Press the ◀ or ▶ button on the remote control to eliminate flicker. • Adjust Phase and Clock in the Input menu. (See page 43.) • Adjust Brightness and Contrast in the Picture 1 menu. (See page 39.) • Adjust the projector and the screen so that they are perpendicular to each other. • (See page 10.)
Afterimages persist on the screen.	• This phenomenon is improved by keeping projecting an evenly bright image. (Such "image burn-in" phenomenon where afterimages persist on the screen may occur if a stationary image is kept displayed on the screen for a long time.)
Red, blue, and green dots appear in projected images. Black dots appear in projected images.	• This phenomenon is unique to SXRD™ projector and isn't a product malfunction. (A small number of pixels always stay on or off, which are not malfunctions. More than 99.99% of the pixels are effective.)
Fine streaks are seen on projected images.	• This is due to interference with the screen surface and is not a malfunction. Replace the screen or displace the focus a little.
Projected images become wavy.	• Connect the plugs of the cables to external devices securely. • Keep the projector away from devices that emit interfering radio waves.
Hue is not appropriate.	• Check that the cables connected to the external devices are not broken.
Tint in projected images is incorrect.	• Check that the cable connected to the external device isn't broken.

Images are not displayed correctly. (continued)

Problem	Solution
No sound comes from the speakers connected to the AV amplifier. (No sound comes from the home theater system speakers.)	• The projector is not equipped with the speakers. • The AV amplifier reads the information that projector is not equipped with the speakers and then passes this information along to the DVD player. Because of this, either the DVD player may be temporarily stopping audio output, or the AV amplifier may be temporarily stopping audio output from the DVD player. → Change the setting on the AV amplifier or the DVD player.
Different color tint.	• When comparing images projected by two projectors, tints in the displayed images may be different because of variation between their optical components. This is not a malfunction. • When comparing the image projected by this projector with those displayed on the television or PC monitor, tints in the displayed images may be different because of difference in the range of color reproducibility. This is not a malfunction.
Only the motion areas in the images supplied from the computer aren't displayed.	• This is caused by the computer being used. Contact the manufacturer of your computer.
Projected images are obscured.	• Match the output resolution of your computer with the resolution of the projector. For the method to change the output resolution of the computer, contact the manufacturer of your computer. (See page 55.)
Image remains freezing.	• When image from VCR is projected, it may remain freezing during speed search. This is not a malfunction.
Noise appears around the image.	• In some images such as DVD, noise may appear around the recorded image. In this case, decrease the setting value of Overscan of the Picture 2 menu. (See page 35.)

Others

Problem	Solution
The exhaust vents emit warm air.	• This air comes out after cooling the inside of the projector. You may feel hot, but this is not a malfunction.
The menu can't be used.	• The microcomputers inside the projector may be wrongly operating because of noise. → Turn off the main power, wait about 10 minutes, and turn on the main power again.
The STATUS indicator is Blinking orange and green.	• This indication appears when the ambient temperature rises high. When the ambient temperature stays high, the lamp goes out. → Eliminate any causes of the rise in the ambient temperature. • This indication appears when the air inlet or outlet grille is blocked. When they are kept blocked, the lamp goes out. → Remove the objects blocking the air inlet or outlet grille. Clean the filter, if clogged. (See page 47.)
The remote control doesn't function easily or at all.	• When the remote control operates improperly while you watch the 3D images, switch the Remote Position in the Setup menu to Front or Rear. • Check that the batteries are loaded in the remote control or the batteries are not weak. (See page 6.) • Check that the remote control sensor isn't exposed to direct sunlight or fluorescent light. (See page 9.) • Use the remote control within its operation range. (See page 9.) • Use the remote control at least 10 cm away from the projector.
Mechanical operating noise (clicking sound) is heard.	• The iris produces sound while operating. This is not a malfunction.

Others (continued)

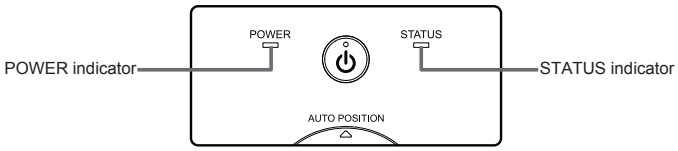
Problem	Solution
Images are not 3D. *The 3D Emitter and 3D Glasses are sold separately. They are not supplied with this product.	• Are the image settings switched to 3D mode? → Switch the mode to 3D mode. • Is there any block in the communication area between the 3D Emitter and the 3D Glasses? Or, is there a sticker or other such item on the infra-red reception section on the 3D Glasses? → The 3D Glasses operate by receiving signals from the 3D Emitter. Check that there is not any block in the communication area between the 3D Emitter and the 3D Glasses. • Is the distance between the 3D Emitter and 3D Glasses too far, or too close? → Adjust the location of the 3D Emitter. • Are the direction of the 3D Emitter and that of the infra-red reception section on the 3D Glasses misaligned? → Adjust the direction and location of the 3D Emitter. • Is the 3D Glasses turned off? → Press the power button of the 3D Glasses to turn it on. • It may need to switch the 3D mode (such as 3D setting system) of the recorder/player when projecting 3D images with the 3D image supporting recorder/player. (For detail, see the User Manual of the recorder/player.) • Is the 3D mode of the projector set properly for the image? → Set the 3D mode of the projector (frame packing, side-by-side, top and bottom) properly for the image. • Is the 3D Emitter connected to the projector? • The 3D Glasses may become out of sync due to fluorescent light. Turn off the fluorescent light. • Is there any other 3D Emitter or 3D image supporting television close to the 3D Glasses? → The 3D Glasses work by receiving signals from the 3D Emitter. Check that there is no interference of the signals from other infra-red emission section.
The power of the 3D Glasses turns off automatically. *The 3D Glasses are sold separately. They are not supplied with this product.	• Is there any block in the communication area between the 3D Emitter and the 3D Glasses? Or, is there a sticker or other such item on the infra-red reception section on the 3D Glasses? → When the signal from the 3D Emitter is interrupted, the power of the 3D Glasses automatically turns off 5 minutes after the interruption. Check that there is not any block in the communication area between the 3D Emitter and the 3D Glasses.
There is something wrong with the 3D images. *The 3D Emitter and 3D Glasses are sold separately. They are not supplied with this product.	• Depending on the 3D image status, you may feel something wrong with the 3D images. → Switch the “3D Sync” setting of the projector to check whether or not the uncomfortable feeling is disappeared. → When the signal from the 3D Emitter is interrupted, the power of the 3D Glasses automatically turns off 5 minutes after the interruption. Check that there is not any block in the communication area between the 3D Emitter and the 3D Glasses. • The 3D Glasses may become out of sync due to fluorescent light. Turn off the fluorescent light. • Is there any other 3D Emitter or 3D image supporting television close to the 3D Glasses? → The 3D Glasses work by receiving signals from the 3D Emitter. Check that there is no interference of the signals from other infra-red emission section.
The indicator blinks five times when the power of the 3D Glasses is turned on. *The 3D Glasses are sold separately. They are not supplied with this product.	• The battery of the 3D Glasses dies. → Replace the battery with a new one.
The indicator does not light up even if the power button is pressed. *The 3D Glasses are sold separately. They are not supplied with this product.	• Does the battery of the 3D Glasses die? → Replace the battery with a new one if the indicator does not light up even when you press the power button.

If the following problem occurs after the lamp is replaced, check the following first

Problem	Solution
The projector does not turn on.	• Attach the lamp cover securely. (See pages 44 and 45.) • Reset the lamp operating time. (See page 45.)
The STATUS indicator blinks.	• Reset the lamp operating time. (See page 45.)

Indicators

This projector has two indicators, each of which shows the operation condition of the projector.
The following offer solutions to possible problems. If these problem persist, turn the projector off and consult your dealer.



Normal condition

POWER	STATUS	CONDITION	NOTE
Steady Red	Off	Standby	
Blinking red		Lamp standby for power-off	The power cannot be turned on by pressing the POWER button.
Steady green	Blinking green	Lamp standby for power-on	The power cannot be turned off by pressing the POWER button.
	Steady green	The power is on. (Normal condition)	

Abnormal condition

POWER	STATUS	CONDITION	POSSIBLE SOLUTION
Steady red	Blinking orange	Electronic boards error1	Unplug the power cord, and then contact your dealer.
Steady red	Blinking orange and red	Electronic boards error2	
Steady red	Blinking red	Electronic boards error3	
Steady red	Blinking orange and green	The lamp cover isn't closed. Abnormal temperature • The ventilation grilles are clogged with dust or dirt. • The projector is used in a place of high temperature such as air blowing slot of the air conditioner.	Close the cover correctly. • Clean the ventilation grilles. • Relocate the projector to a cooler place.
Steady red	Blinking green	Fans error Power board error	Turn off the power switch and then turn it back on again. If the above solution is not effective, contact with your dealer.
Steady Green	Steady Orange	Lamp operation time warning. (Total lamp operation time reached 3800*1hours while the power was on.)	Replace the lamp. Ask your dealer for the purchase of new lamp.
Steady Green	Steady Red	Lamp operation time warning. (Total lamp operation time reached 4000*1*2hours while the power was on.)	

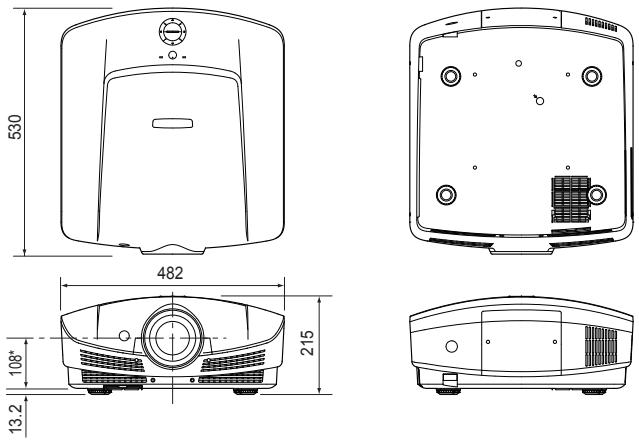
*1:Duration when Lamp Mode of the Setup menu is set to normal. When it is set to High, this duration will be shorted.
*2:Duration when Lamp Mode of the Setup menu is set to normal. When it is set to High, this duration will be shorted up to 2000 hours.

Specifications

The specifications and outside appearance of the projector are subject to change without prior notice.

Type		HOME THEATER PROJECTOR
Model		HC9000D/HC9000DW
Display technology		0.61 inch SXRD™ panel: 3 pieces (for R, G, B) (aspect ratio 16:9) Pixel: 1920 x 1080 = 2073600 pixels Total 6220800 pixels
Projection lens		F 3.2 - 3.9 f = 21.4 - 38.5 mm
Light-source lamp		230 W
Image size (projection distance)		50” min. to 200” max. (projection distance 1.7 to 12.6m) (16:9 image).
Maximum resolution	Computer signal	Panel resolution: 1920 x 1080 dots
	Video signal	NTSC/PAL/SECAM/4.43NTSC/PAL-M/PAL-N
	Component signal	480i, 480p, 576i, 576p, 720p, 1080i, 1080p Panel resolution: 1920 x 1080 dots
Computer input		[Signal type] [Terminal type] [Line] Analog RGB Mini D-SUB 15-pin 1
Video input		[Signal type] [Terminal type] [Line] HDMI HDMI 2 Video input RCA 1 S-video input S 1 Component video input RCA x3 (YC_BC_R/YP_BP_R) 1
Control terminal/ others	SERIAL	D-SUB 9-pin (RS-232C)
	TRIGGER1/2	DC 12 V, max. 200 mA (mini jack)
Operating temperatures		+41°F (+5°C) to +95°F (+35°C)
Rated voltage		AC100 - 240 V, 50/60 Hz
Power consumption		4.0 A
Dimensions		482mm(W) x 215mm(H) x 530mm(D) * Not including protrusion.
Weight		14.5 kg
Others	S-video input	Luminance signal: Vp-p=1.0 V 75 Ω (negative sync) Chrominance signals: Vp-p=0.286 V 75 Ω (burst signal)
	Video input	Vp-p=1.0 V 75 Ω
	Component video input	YC_BC_R: Vp-p=1.0 V 75Ω (Y) (negative sync) Vp-p=0.7 V 75 Ω (C_B, C_R)
	Analog input	RGB: Vp-p=0.7 V 75 Ω HD: TTL-level (negative or positive polarity) VD: TTL-level (negative or positive polarity)
	Digital input (HDMI)	HDMI interface (TMDS single link)

Dimension drawings (unit: mm)



*: Factory-defaults

Specification of input signals in each input of the projector

HDMI

Signal mode	Resolution (H x V)	Horizontal frequency (kHz)	Vertical frequency (Hz)	Normal mode (H x V)*1
480i60.00Hz(Double Rate)	-	15.75	60.00	1440x1080
480i59.94Hz(Double Rate)	-	15.73	59.94	1440x1080
576i50.00Hz(Double Rate)	-	15.63	50.00	1440x1080
480p 60.00Hz	-	31.50	60.00	1440x1080
480p 59.94Hz	-	31.47	59.94	1440x1080
576p 50.00Hz	-	31.25	50.00	1440x1080
720p 60.00Hz	-	45.00	60.00	1920x1080
720p 59.94Hz	-	44.96	59.94	1920x1080
720p 50.00Hz	-	37.50	50.00	1920x1080
1080i 60.00Hz	-	33.75	60.00	1920x1080
1080i 59.94Hz	-	33.72	59.94	1920x1080
1080i 50.00Hz	-	28.13	50.00	1920x1080
1080p 60.00Hz	-	67.50	60.00	1920x1080
1080p 59.94Hz	-	67.43	59.94	1920x1080
1080p 50.00Hz	-	56.25	50.00	1920x1080
1080p 24.00Hz	-	27.00	24.00	1920x1080
1080p 23.98Hz	-	26.97	23.98	1920x1080
VGA 60.00Hz	640x480	31.50	60.00	1440x1080
VGA 59.94Hz	640x480	31.47	59.94	1440x1080
SVGA 60Hz	800x600	37.88	60.00	1440x1080
XGA/60Hz	1024x768	48.36	60.00	1440x1080
WXGA 60Hz	1280x768	47.76	60.00	1800x1080
WXGA+ 60Hz	1440x900	55.92	60.00	1728x1080
SXGA+ 60	1400x1050	65.32	59.98	1440x1080
SXGA 60Hz	1280x1024	63.98	60.00	1350x1080
WSXGA+ 60Hz	1680x1050	65.22	60.00	1728x1080
WUXGA 60Hz	1920x1200	74.04	59.95	1728x1080

HDMI-3D

Signal mode	Resolution (H x V)	Horizontal frequency (kHz)	Vertical frequency (Hz)	Normal mode (H x V)*1
Frame Packing 720p50	-	75.00	50.00	1920x1080
Frame Packing 720p59	-	89.91	59.94	1920x1080
Frame Packing 720p60	-	90.00	60.00	1920x1080
Frame Packing 1080p23	-	53.95	23.98	1920x1080
Frame Packing 1080p24	-	54.00	24.00	1920x1080
Side-by-Side 1080p50(Half)	-	56.25	50.00	1920x1080
Side-by-Side 1080p59(Half)	-	67.43	59.94	1920x1080
Side-by-Side 1080p60(Half)	-	67.50	60.00	1920x1080
Side-by-Side 1080i50(Half)	-	28.13	50.00	1920x1080
Side-by-Side 1080i60(Half)	-	33.75	60.00	1920x1080
Side-by-Side 1080i59(Half)	-	33.72	59.94	1920x1080
Top-and-Bottom 1080p24	-	27.00	24.00	1920x1080
Top-and-Bottom 1080p23	-	26.97	23.98	1920x1080
Top-and-Bottom 720p50	-	37.50	50.00	1920x1080
Top-and-Bottom 720p60	-	45.00	60.00	1920x1080
Top-and-Bottom 720p59	-	44.96	59.94	1920x1080

Video / S-Video

Signal mode	Resolution (H x V)	Horizontal frequency (kHz)	Vertical frequency (Hz)	Normal mode (H x V)*1
NTSC(3.58/4.43)	712x483	15.73	59.94	1440x1080
PAL/PAL-N	702x575	15.63	50.00	1440x1080
PAL-M	712x483	15.73	59.94	1440x1080
SECAM	702x575	15.63	50.00	1440x1080

Component

Signal mode	Resolution (H x V)	Horizontal frequency (kHz)	Vertical frequency (Hz)	Normal mode (H x V)*1
480i 60.00Hz	-	15.75	60.00	1440x1080
480i 59.94Hz	-	15.73	59.94	1440x1080
576i 50.00Hz	-	15.63	50.00	1440x1080
480p 60.00Hz	-	31.50	60.00	1440x1080
480p 59.94Hz	-	31.47	59.94	1440x1080
576p 50.00Hz	-	31.25	50.00	1440x1080
720p 60.00Hz	-	45.00	60.00	1920x1080
720p 59.94Hz	-	44.96	59.94	1920x1080
720p 50.00Hz	-	37.50	50.00	1920x1080
1080i 60.00Hz	-	33.75	60.00	1920x1080
1080i 59.94Hz	-	33.72	59.94	1920x1080
1080i 50.00Hz	-	28.13	50.00	1920x1080
1080p 60.00Hz	-	67.50	60.00	1920x1080
1080p 59.94Hz	-	67.43	59.94	1920x1080
1080p 50.00Hz	-	56.25	50.00	1920x1080

PC Signal

Signal mode	Resolution (H x V)	Horizontal frequency (kHz)	Vertical frequency (Hz)	Normal mode (H x V)*1
VGA 60	640x480	31.50	60.00	1440x1080
VGA 72	640x480	37.90	72.00	1440x1080
VGA 75	640x480	37.50	75.00	1440x1080
VGA 85	640x480	43.30	85.00	1440x1080
SVGA 56	800x600	35.20	56.00	1440x1080
SVGA 60	800x600	37.90	60.00	1440x1080
SVGA 72	800x600	48.10	72.00	1440x1080
SVGA 75	800x600	46.90	75.00	1440x1080
SVGA 85	800x600	53.70	85.00	1440x1080
XGA 60	1024x768	48.40	60.00	1440x1080
XGA 70	1024x768	56.50	70.00	1440x1080
XGA 75	1024x768	60.02	75.03	1440x1080
XGA 85	1024x768	68.70	85.00	1440x1080
WXGA 60	1280x768	47.76	60.00	1800x1080
WXGA+ 60	1440x900	55.92	60.00	1728x1080
SXGA 60	1280x1024	63.98	60.02	1440x1080
SXGA+ 60	1400x1050	64.74	59.95	1350x1080
WSXGA+ 60	1680x1050	65.22	60.00	1728x1080
1920x1080@60	1920x1080	67.50	60.00	1920x1080
MAC13"	640x480	35.00	66.67	1440x1080
MAC16"	832x624	49.11	75.09	1440x1080
MAC19"	1024x768	60.24	74.93	1440x1080

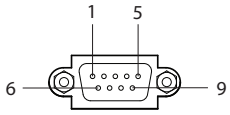
*1: This mode shows the display area when Aspect Ratio in the Screen menu is set to Standard.

Important:

- Some computers aren't compatible with the projector.
- The projector's maximum resolution is 1920 x 1080 pixels. It may not display images of higher resolutions than 1920 x 1080 correctly.
- If the resolution and frequency of your computer aren't shown on the table, find the compatible resolution and frequency by changing the resolution of your computer.
- This projector supports only 5 lines format (R, G, B, H, V) in Computer input and does not support 4 lines format (R, G, B, Composite Sync).

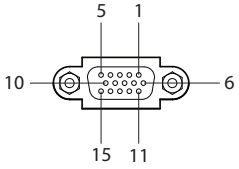
Connectors

SERIAL (D-SUB 9-pin)



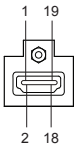
Pin No.	Name	I/O
1	GND	–
2	RXD	IN
3	TXD	OUT
4	GND	–
5	GND	–
6	GND	–
7	–	–
8	–	–
9	GND	–

COMPUTER IN
(Mini D-SUB 15-pin)



Pin No.	Spec.
1	R(RED)/P_R/C_R
2	G(GREEN)/Y
3	B(BLUE)/P_B/C_B
4	–
5	GND
6	GND
7	GND
8	GND
9	5V
10	GND
11	–
12	–
13	HS
14	VS
15	–

HDMI IN
(HDMI 19-pin)



PIN No.	Spec.	PIN No.	Spec.
1	TMDS Data2+	11	TMDS Clock Shield
2	TMDS Data2 Shield	12	TMDS Clock-
3	TMDS Data2-	13	CEC
4	TMDS Data1+	14	–
5	TMDS Data1 Shield	15	SCL
6	TMDS Data1-	16	SDA
7	TMDS Data0+	17	DDC Ground
8	TMDS Data0 Shield	18	+5 V Power
9	TMDS Data0-	19	Hot Plug Detect
10	TMDS Clock+		

Replacement part (option/not included in the box)

Spare lamp	VLT-HC9000LP
3D Glasses	EY-3DGS-1U
3D Emitter	EY-3D-EMT1

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