JVC

INSTRUCTIONS

D-ILA
PROJECTOR

DLA-X9000
DLA-X7000
DLA-X5000

D-ILA®

HDMI®
HIGH-DEFINITION MULTIMEDIA INTERFACE

Mobile User Guide

● *http://manual3.jvckenwood.com/projector/mobile/global/*
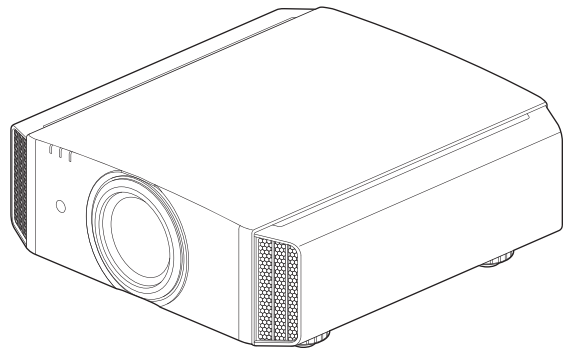
The Mobile User Guide can be viewed on mobile internet devices including smartphones and tablets.

Getting Started

Set up

Operate

Adjust/Set

Maintenance

Troubleshooting

Others

<table>
<tr><td>For Customer use :
Enter below the serial No. which is located on the side of the cabinet. Retain this information for future reference.

Model No. DLA-X9000 / DLA-X7000 / DLA-X5000

Serial No.</td><td>Pour utilisation par le client :
Entrerci-dessous le N°de série qui est situé sous le boîtier. Garder cetteinformation comme référence pour le futur.

N° de modèle DLA-X9000 / DLA-X7000 / DLA-X5000

N° de série</td><td>Instrucción para el cliente :
Introduzca a continuación el nº de serie que aparece en la parte inferior lateral de la caja. Conserve esta información como referencia para uso ulterior.

Modelo Nº DLA-X9000 / DLA-X7000 / DLA-X5000

Nº de serie</td></tr>
</table>

Not suitable for household room illumination.

B5A-1144-06

Safety Precautions

IMPORTANT INFORMATION

This product has a High Intensity Dis-charge (HID) lamp that contains mercury. Manage in accord with disposal laws.
Disposal of these materials may be regulated in your community due to environmental considerations. For disposal or recycling information, please contact your local authorities or for USA, the Electronic Industries Alliance: http://www.eiae.org. or call 1-800-252-5722(For USA)
or 1-800-964-2650(For Canada).

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

WARNING:
THIS APPARATUS MUST BE EARTHED.

CAUTION:
To reduce the risk of electric shock, do not remove cover. Refer servicing to qualified service personnel.

This projector is equipped with a 3-blade grounding type plug to satisfy FCC rule. If you are unable to insert the plug into the outlet, contact your electrician.

NOISE EMISSION DECLARATION
The sound pressure level at the operator position is equal or less than 30dB(A) according to ISO7779.

For the customers in Taiwan only

廢電池請回收

About the installation place
Do not install the projector in a place that cannot support its weight securely.
If the installation place is not sturdy enough, the projector could fall or overturn, possibly causing personal injury.

IMPORTANT SAFEGUARDS

Electrical energy can perform many useful functions. This unit has been engineered and manufactured to assure your personal safety. But IMPROPER USE CAN RESULT IN POTENTIAL ELECTRICAL SHOCK OR FIRE HAZARD. In order not to defeat the safeguards incorporated into this product, observe the following basic rules for its installation, use and service. Please read these Important Safeguards carefully before use.

- All the safety and operating instructions should be read before the product is operated.
- The safety and operating instructions should be retained for future reference.
- All warnings on the product and in the operating instructions should be adhered to.
- All operating instructions should be followed.
- Place the projector near a wall outlet where the plug can be easily unplugged.
- Unplug this product from the wall outlet before cleaning.
- Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
- Do not use attachments not recommended by the product manufacturer as they may be hazardous.
- Do not use this product near water. Do not use immediately after moving from a low temperature to high temperature, as this causes condensation, which may result in fire, electric shock, or other hazards.
- Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. The product should be mounted according to the manufacturer's instructions, and should use a mount recommended by the manufacturer.
- When the product is used on a cart, care should be taken to avoid quick stops, excessive force, and uneven surfaces which may cause the product and cart to overturn, damaging equipment or causing possible injury to the operator.

PORTABLE CART WARNING
(symbol provided by RETAC)

S3126A

- Slots and openings in the cabinet are provided for ventilation. These ensure reliable operation of the product and protect it from overheating. These openings must not be blocked or covered. (The openings should never be blocked by placing the product on bed, sofa, rug, or similar surface. It should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided and the manufacturer's instructions have been adhered to.)
- To allow better heat dissipation, keep a clearance between this unit and its surrounding as shown below. When this unit is enclosed in a space of dimensions as shown below, use an air-conditioner so that the internal and external temperatures are the same. Overheating can cause damage.

- Power source indicated on the label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company.
- This product is equipped with a three-wire plug. This plug will fit only into a grounded power outlet. If you are unable to insert the plug into the outlet, contact your electrician to install the proper outlet. Do not defeat the safety purpose of the grounded plug.
- 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 doors, plugs, receptacles, and the point where they exit from the product.
- For added protection of this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the cable system. This will prevent damage to the product due to lightning and power line surges.
- Do not overload wall outlets, extension cords, or convenience receptacles on other equipment as this can result in a risk of fire or electric shock.
- Never push objects of any kind into this product through openings 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 product.
- Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltages and other hazards. Refer all service to qualified service personnel.
- Unplug this product from the wall outlet and refer service to qualified service personnel under the following conditions:

  a) When the power supply cord or plug is damaged.
  b) If liquid has been spilled, or objects have fallen on the product.
  c) If the product has been exposed to rain or water.
  d) If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the Operation Manual, as an improper adjustment of controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal operation.
  e) If the product has been dropped or damaged in any way.
  f) When the product exhibits a distinct change in performance, this indicates a need for service.

- When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or with same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.
- Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.
- The product should be placed more than one foot away from heat sources such as radiators, heat registers, stoves, and other products (including amplifiers) that produce heat.
- When connecting other products such as VCR's, and DVD players, you should turn off the power of this product for protection against electric shock.

- Do not place combustibles behind the cooling fan. For example, cloth, paper, matches, aerosol cans or gas lighters that present special hazards when over heated.
- Do not look into the projection lens while the illumination lamp is turned on. Exposure of your eyes to the strong light can result in impaired eyesight.
- Do not look into the inside of this unit through vents (ventilation holes), etc. Do not look at the illumination lamp directly by opening the cabinet while the illumination lamp is turned on. The illumination lamp also contains ultraviolet rays and the light is so powerful that your eyesight can be impaired.
- Do not drop, hit, or damage the light-source lamp (lamp unit) in any way. It may cause the light-source lamp to break and lead to injuries. Do not use a damaged light source lamp. If the light-source lamp is broken, ask your dealer to repair it. Fragments from a broken light-source lamp may cause injuries.
- The light-source lamp used in this projector is a high pressure mercury lamp. Be careful when disposing of the light-source lamp. If anything is unclear, please consult your dealer.
- Do not ceiling-mount the projector to a place which tends to vibrate; otherwise, the attaching fixture of the projector could be broken by the vibration, possibly causing it to fall or overturn, which could lead to personal injury.
- Use only the accessory cord designed for this product to prevent shock.
- For health reasons, please take a break of about 5-15 minutes every 30-60 minutes and let your eyes rest. Please refrain from watching any 3D-images when you feel tired, unwell or if you feel any other discomfort. Moreover, in case you see a double image, please adjust the equipment and software for proper display. Please stop using the unit if the double image is still visible after adjustment.
- Once every three years, please perform an internal test. This unit is provided with replacement parts needed to maintain its function (such as cooling fans). Estimated replacement time of parts can vary greatly depending on frequency of use and the respective environment. For replacement, please consult your dealer, or the nearest authorized JVC service center.
- When fixing the unit to the ceiling, Please note that we do not take any responsibility, even during the warranty period, if the product is damaged due to use of metal fixtures used for fixation to the ceiling other than our own or if the installation environment of said metal fixtures is not appropriate. If the unit is suspended from the ceiling during use, please be careful in regard to the ambient temperature of the unit. If you use a central heating, the temperature close to the ceiling will be higher than normally expected.
- Video images can burn into the electronic com ponent parts. Please do not display screens with still images of high brightness or high contrast, such as found in video games and computer programs. Over a long period of time it might stick to the picture element. There is no problem with the playback of moving images, e.g. normal video footage.

- Video images can burn into the electronic com ponent parts. Please do not display screens with still images of high brightness or high contrast, such as found in video games and computer programs. Over a long period of time it might stick to the picture element. There is no problem with the playback of moving images, e.g. normal video footage.
- Not using the unit for a long time can lead to malfunction. Please power it on and let it run occasionally. Please avoid using the unit in a room where cigarettes are smoked. It is impos sible to clean optical component parts if they are contaminated by nicotine or tar. This might lead to performance degradation.
- Please watch from a distance three times the height of the projected image size. Persons with photosensitivity, any kind of heart disease, or weak health should not use 3D glasses.
- Watching 3D-images might be cause of illness. If you feel any change in your physical condition, please stop watching immediately and consult a physician if necessary.
- When watching 3D images, it is recommended to take regular breaks. As the length and frequency of the required breaks differ for every person, please judge according to your own condition.
- If your child watches while wearing 3D glasses, it should be accompanied by its parents or an adult guardian. The adult guardian should be careful to avoid situations where the child's eyes might become tired, as responses to tiredness and discomfort, etc., are hard to detect, and it is possible for the physical condition to deteriorate very quickly. As the visual sense is not yet fully developed in children under the age of 6, please consult a physician in regard to any problem concerning 3D-images if necessary.
- Note that when using the 3D feature, the video output may appear different from the original video image due to image conversion on the device.

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* DO NOT allow any unqualified person to install the unit.

Be sure to ask your dealer to install the unit (e.g.attaching it to the ceiling) since special technical knowledge and skills are required for installation. If installation is performed by an unqualified person, it may cause personal injury or electrical shock.


POWER CONNECTION

For USA and Canada only
Use only the following power cord.

Power cord

The power supply voltage rating of this product is
AC100V – AC240V. Use only the power cord
designated by our dealer to ensure Safety and EMC.
Ensure that the power cable used for the projector is
the correct type for the AC outlet in your country.
Consult your product dealer.

Power cord
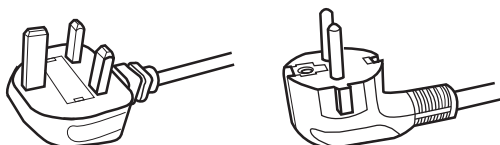
For United Kingdom   For European continent
                       countries

WARNING:
**Do not cut off the main plug from this
equipment.**

If the plug fitted is not suitable for the power points
in your home or the cable is too short to reach a
power point, then obtain an appropriate safety
approved extension lead or adapter or consult your
dealer. If nonetheless the mains plug is cut off,
dispose of the plug immediately, to avoid a possible
shock hazard by inadvertent connection to the main
supply. If a new main plug has to be fitted, then
follow the instruction given below.

WARNING:
THIS APPARATUS MUST BE EARTHED.

Dear Customer,
This apparatus is in conformance with the valid
European directives and standards regarding
electromagnetic compatibility and electrical safety.
European representative of
JVC KENWOOD Corporation is:
JVC Technical Services Europe GmbH
Konrad-Adenauer-Allee 1-11
61118 Bad Vilbel
Germany

IMPORTANT (Europe only):
The wires in the mains lead on this product are
colored Vert et jaune in accordance with the
following cord:

Green-and-yellow : Earth
Blue   : Neutral
Brown   : Live

As these colors may not correspond with the
colored making identifying the terminals in your
plug, proceed as follows:
The wire which is colored green-and-yellow must be
connected to the terminal which is marked M with
the letter E or the safety earth or colored green or
green-and-yellow. The wire which is colored blue
must be connected to the terminal which is marked
with the letter N or colored black.
The wire which is colored brown must be connected
to the terminal which is marked with the letter L or
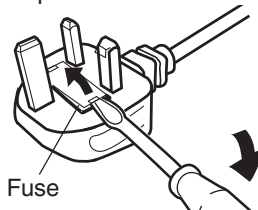colored red.

POWER CONNECTION
(United Kingdom only)

IMPORTANT (Europe only):
When replacing the fuse, be sure to use only a
correctly rated approved type, re-fit the fuse cover.

IF IN DOUBT —— CONSULT A COMPETENT ELECTRICIAN.
Open the fuse compartment with the blade
screwdriver, and replace the fuse.
(* An example is shown in the illustration below.)

Fuse

INFORMATION Manufacturer:
JVC KENWOOD Corporation
3-12, Moriya-cho, Kanagawa-ku, Yokohama-shi,
Kanagawa, 221-0022, JAPAN

Importer (EU only):
JVC KENWOOD U.K. Limited
12 Priestley Way, London, NW2 7BA
UNITED KINGDOM

For more details, please refer to our website.
http://www.jvc.net/

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Information for Users on Disposal of Old Equipment and Batteries

Products **Battery**

[European Union only]

These symbols indicate that equipment with these symbols should not be disposed of as general household waste. If you want to dispose of the product or battery, please consider the collection systems or facilities for appropriate recycling.

Notice: The sign Pb below the symbol for batteries indicates that this battery contains lead.

Informations relatives à l'élimination des appareils et des piles usagés, à l'intention des utilisateurs

Produits **Pile**

[Union européenne seulement]

Si ces symboles figurent sur les produits, cela signifie qu'ils ne doivent pas être jetés comme déchets ménagers. Si vous voulez jeter ce produit ou cette pile, veuillez considérer le système de collecte des déchets ou les centres de recyclage appropriés.

Notification: La symbole Pb en dessous du symbole des piles indique que cette pile contient du plomb.

Información para los usuarios sobre la eliminación de baterías/pilas usadas

Productos **Baterías/pilas**

[Sólo Unión Europea]

Estos símbolos indican que el equipo con estos símbolos no debe desecharse con la basura doméstica. Si desea desechar el producto o batería/pila, acuda a los sistemas o centros de recogida para que los reciclen debidamente.

Atención: La indicación Pb debajo del símbolo de batería/pila indica que ésta contiene plomo.

Benutzerinformationen zur Entsorgung alter Geräte und Batterien

Produkte **Batterie**

[Nur Europäische Union]

Diese Symbole zeigen an, dass derartig gekennzeichnete Geräte nicht als normaler Haushaltsabfall entsorgt werden dürfen. Wenden Sie sich zur Entsorgung des Produkts oder der Batterie an die hierfür vorgesehenen Sammelstellen oder Einrichtungen, damit eine fachgerechte Wiederverwertung möglich ist.

Hinweis: Das Zeichen Pb unterhalb des Batteriesymbols gibt an, dass diese Batterie Blei enthält.

Informazioni per gli utenti sullo smaltimento delle apparecchiature e batterie obsolete

Prodotti **Batteria**

[Solo per l'Unione Europea]

Questi simboli indicano che le apparecchiature a cui sono relativi non devono essere smaltite tra i rifiuti domestici generici. Se si desidera smaltire questo prodotto o questa batteria, prendere in considerazione i sistem i o le strutture di raccolta appropriati per il riciclaggio corretto.

Nota: Il simbolo Pb sotto il simbolo delle batter ie indica che questa batteria contiene piombo.

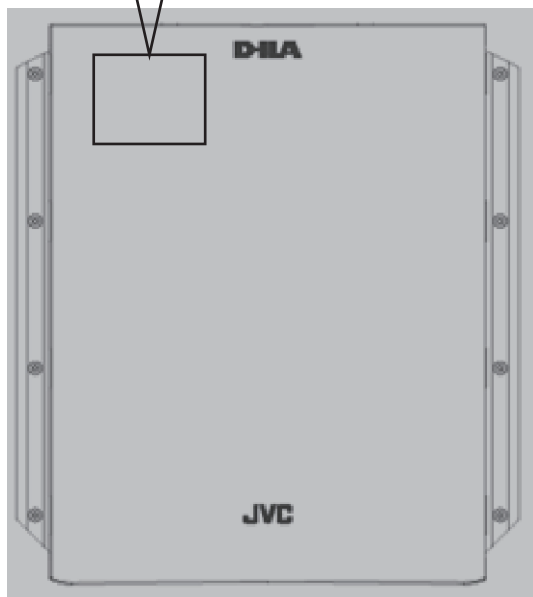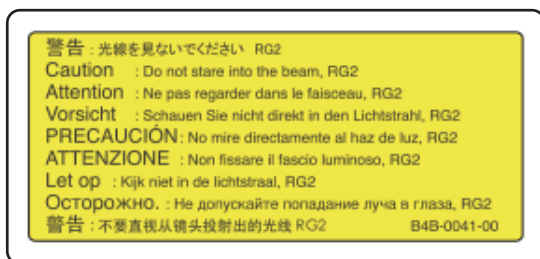## Informatie voor gebruikers over het verwijderen van oude apparatuur en batterijen

Producten **Batterij**

[Alleen Europese Unie]

Deze symbolen geven aan dat appara tuur met dit symbool niet mag worden weggegooid als algemeen huishoudelijk afval. Als u het product of de batterij wilt weggooien, kun t u inzamelsystemen of faciliteiten voor een geschikte recycling gebruiken.

Opmerking: Het teken Pb onder het batterijsymboo l geeft aan dat deze batterij lood bevat.

Location information of the labels

警告 : 光線を見ないでください　RG2
Caution　: Do not stare into the beam, RG2
Attention　: Ne pas regarder dans le faisceau, RG2
Vorsicht　: Schauen Sie nicht direkt in den Lichtstrahl, RG2
PRECAUCIÓN: No mire directamente al haz de luz, RG2
ATTENZIONE　: Non fissare il fascio luminoso, RG2
Let op　: Kijk niet in de lichtstraal, RG2
Осторожно. : Не допускайте попадание луча в глаза, RG2
警告 : 不要直视从镜头投射出的光线 RG2　　　B4B-0041-00

As with any bright light source, do not stare into the beam, RG2 IEC 62471-5:2015

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Contents

Symbols used in this manual

X9000 indicates a function that is supported by DLA-X9000.
X7000 indicates a function that is supported by DLA-X7000.
X5000 indicates a function that is supported by DLA-X5000.

Items not marked with any of the above symbols are supported by all models.

Accessories/Optional Accessories

Check the Accessories

Lens cover `X5000` .... 1 piece
* It is attached to the main unit at the time of shipment.

Remote control .... 1 piece

AAA-size batteries (for operational check) .... 2 pieces

Power cord (for USA) (about. 2 m) .... 1 piece

Power cord (for UK) (about. 2 m) .... 1 piece

Power cord (for EU) (about. 2 m) .... 1 piece
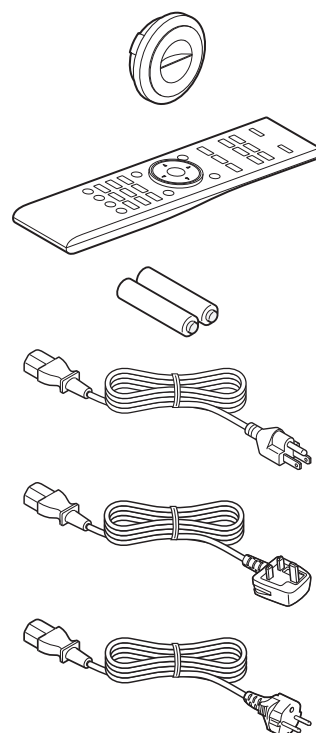
- Quick User Guide, safety precautions, warranty card, and other printed material are also included.
- Be sure to read the "Safety Precautions" before using this projector.

Optional Accessories

- Replacement lamp: product no. PK-L2615U
- 3D GLASSES: model PK-AG3
- 3D SYNCHRO EMITTER: model PK-EM2

**Compatibility Chart for 3D SYNCHRO EMITTER and 3D GLASSES**

		3D GLASSES		
		PK-AG1 * (Communication Method: IR (Infrared))	PK-AG2 * (Communication Method: IR (Infrared))	PK-AG3 (Communication Method: RF (Radio frequency))
3D SYNCHRO EMITTER	PK-EM1 * (Communication Method: IR (Infrared))	O	O	—
	PK-EM2 (Communication Method: RF (Radio frequency))	—	—	O

* Discontinued product

Please check with your authorized dealer for details.

Controls and Features

Main Unit - Front
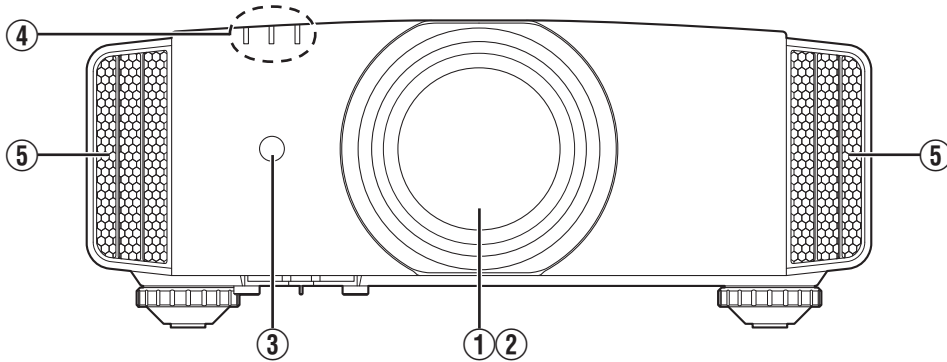
① Lens

This is a projection lens. Do not look through the lens while an image is projected.

② Lens cover X9000 X7000

The lens cover opens/closes when the power supply is turned on/off. (P. 48)

• For X5000 , attach the lens cover when the unit is not in use.

③ Remote Sensor (front)

Please aim the remote control at this area when using it.

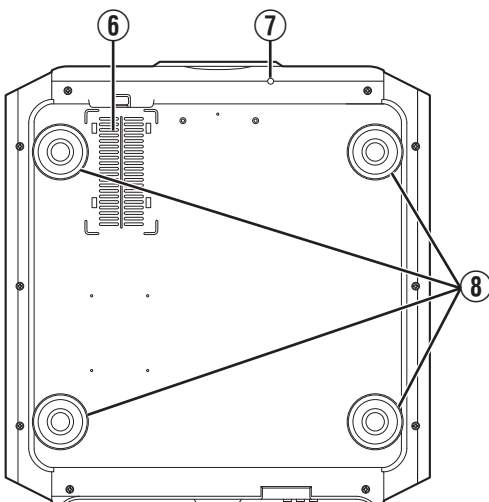* There is also a remote sensor at the rear.

④ Indicator

Refer to "Indicator Display on the Main Unit" P. 74.

⑤ Exhaust vent

Warm air is discharged to cool down the internal temperature.
Do not block the vents.

Main Unit - Bottom

⑥ Inlets (at 3 points on the rear/bottom)

The inlets take in air to cool down the internal temperature.
Do not block or prevent the outflow of hot air. Doing so may cause the unit to malfunction.

* There are two inlets on the right and left sides at the rear of the unit.

### ⑦ Manual button for lens cover X9000 X7000

The lens cover can be opened when pressed down.
It is used for maintenance purposes. You can also make use of it when you need to open the lens cover urgently.

⑧ Feet

The height and angle of the projector can be adjusted by turning the foot. (0 to 5 mm) (P. 17)

When the foot is removed, it can be used as the mounting holes for the ceiling mount bracket.

Main Unit - Rear
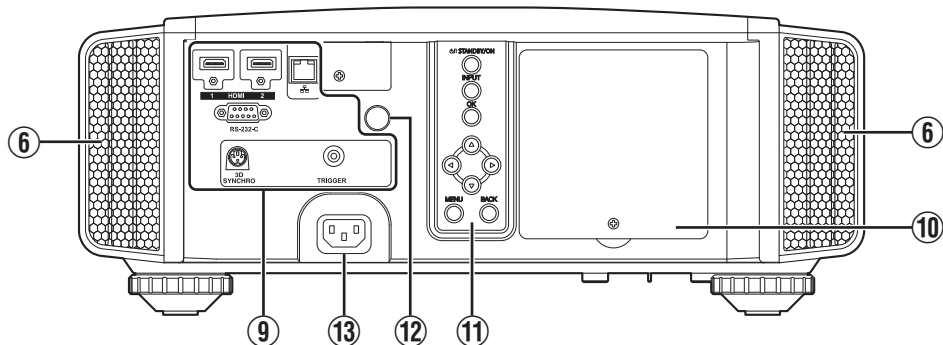
⑨ Input terminals

In addition to the video input terminal, there are also other connection terminals for devices such as controllers and optional equipment.

Please see "Main Unit - Input Terminals"P. 12 for more details about the terminals.
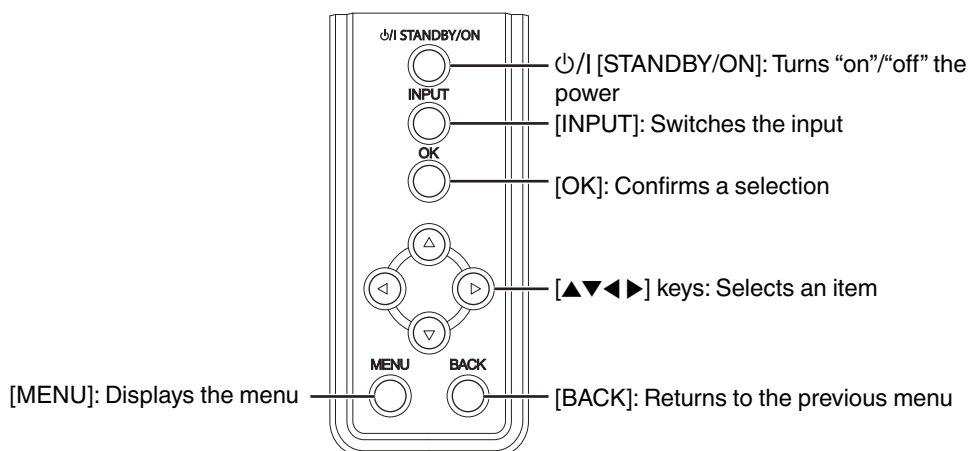
⑩ Lamp cover

When replacing the light source lamp, remove this cover.

⑪ Operation panel

For more details, please refer to the "Operation panel" in the diagram below.
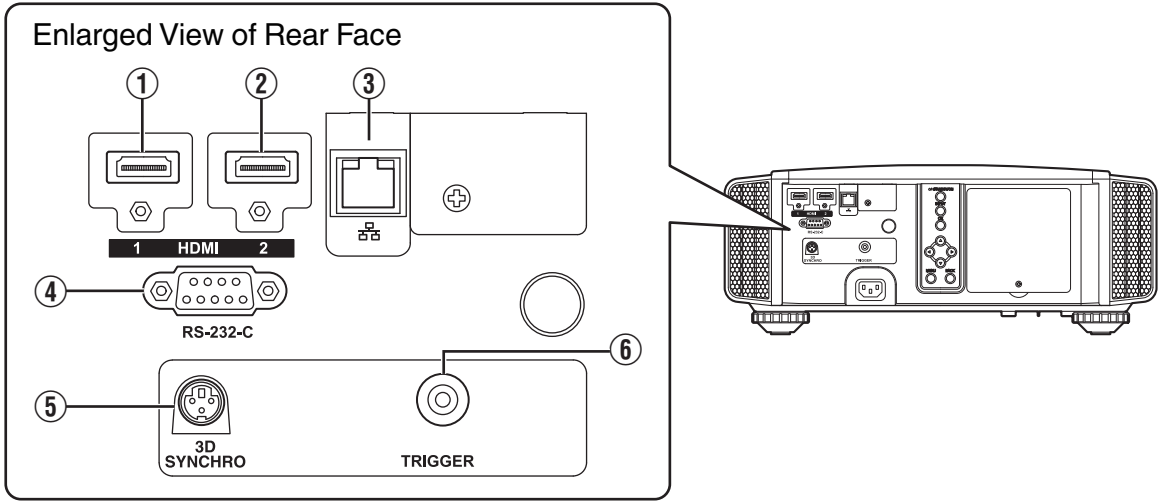
⑫ Remote Sensor (rear)

Please aim the remote control at this area when using it.

* There is also a remote sensor at the front.

⑬ Power input terminal

Connect the supplied power cord to this terminal.

Operation panel

⏻/I [STANDBY/ON]: Turns "on"/"off" the power

[INPUT]: Switches the input

[OK]: Confirms a selection

[▲▼◀▶] keys: Selects an item

[MENU]: Displays the menu

[BACK]: Returns to the previous menu

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Getting Started

Main Unit - Input Terminals

Enlarged View of Rear Face

① [HDMI 1] input terminal

② [HDMI 2] input terminal

For connecting to devices that support HDMI output. (P. 18)

It is fitted to the M3 lock hole. The depth of the screw hole is 3 mm.

③ [LAN] terminal (RJ-45)

The projector can be controlled by connecting it to a PC through the computer network for control commands to be sent to the projector.

④ [RS-232C] terminal (D-sub 9-pin male)

The projector can be controlled by connecting a PC to this terminal.

⑤ [3D SYNCHRO] terminal

By connecting a 3D SYNCHRO EMITTER (sold separately) to this terminal, you can view 3D movies.

⑥ [TRIGGER] terminal (⊖–Ⓒ–⊕)

Output terminal for DC 12 V, 100 mA power supply. It is used for sending output signals to control devices such as an elevating screen that is equipped with a trigger function.

Note that improper connection may damage the projector. (Tip=DC +12 V, Sleeve=GND)
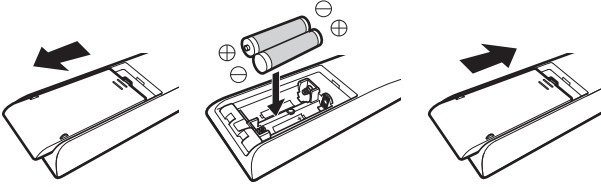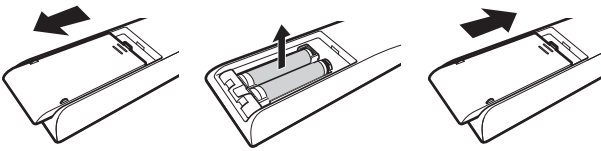
Remote Control
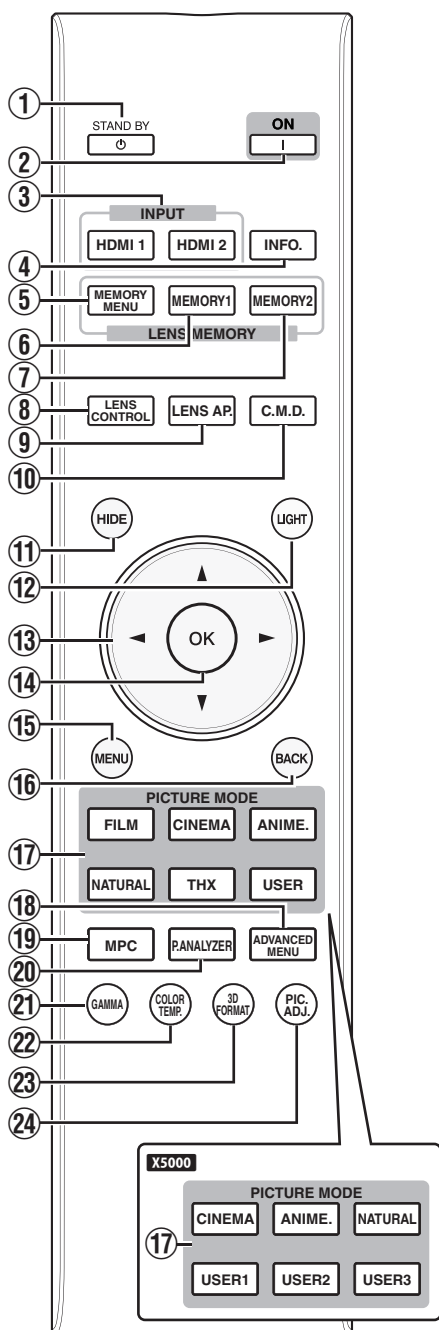
① ⏻ [STAND BY]
Turns off the power. (P. 22)

② Ⅰ [ON]
Turns on the power. (P. 21)

③ [INPUT]
Select an input from [HDMI 1] and [HDMI 2]. (P. 21)

④ [INFO.]
Displays the information menu. (P. 56)

⑤ [MEMORY MENU]
Switches between saving, retrieving, and editing of the lens memory. (P. 24)

⑥ [MEMORY 1]
Retrieves LENS MEMORY 1.

⑦ [MEMORY 2]
Retrieves LENS MEMORY 2.

⑧ [LENS CONTROL]
For adjusting focus, zoom, and shift. (P. 23)

⑨ [LENS AP.]
For setting the lens aperture. (P. 40)

⑩ [C.M.D.]
For setting frame interpolation. (P. 39)

⑪ [HIDE]
Hides the image temporarily. (P. 21)

⑫ [LIGHT]
Illuminates the buttons on the remote control.

⑬ [▲▼◀▶] keys
For selecting an item.

⑭ [OK]
Confirms a selected item.

⑮ [MENU]
Displays the menu, or hides the menu if it is displayed.

⑯ [BACK]
Returns to the previous menu.

⑰ [PICTURE MODE]
Switches the Picture mode to [FILM]*1, [CINEMA], [ANIME.], [NATURAL], [THX]*1, or [USER]*2. (P. 30)

*1 **X9000** **X7000** only

*2 [USER1], [USER2] and [USER3] are available for **X5000**.

⑱ [ADVANCED MENU]
Pressing the button each time switches the menu in the following sequence: "Picture Mode" → "Color Profile" → "Color Temp." → "Gamma"

⑲ [MPC]
For setting the MPC level. (P. 34)

⑳ [P.ANALYZER]
Turns on/off the analysis screen. (P. 35)

㉑ [GAMMA]
For setting the gamma level. (P. 36)

㉒ [COLOR TEMP.]
For setting the color temperature. (P. 44)

㉓ [3D FORMAT]
Switches the 3D format. (P. 29)

㉔ [PIC. ADJ.]
Switches the items for adjusting the image quality, such as contrast, brightness, etc. (P. 45)

Loading Batteries into the Remote Control

Loading the batteries

Removing the batteries

- If the remote control has to be brought closer to the projector to operate, it means that the batteries are wearing out. Replace the batteries with new ones (AAA).
- Insert the batteries according to the $\oplus$ $\ominus$ marks. Be sure to insert the $\ominus$ end first. When removing the battery, do so from the $\oplus$ end.
- If an error occurs while using the remote control, remove the batteries and wait for five minutes. Load the batteries again and operate the remote control.
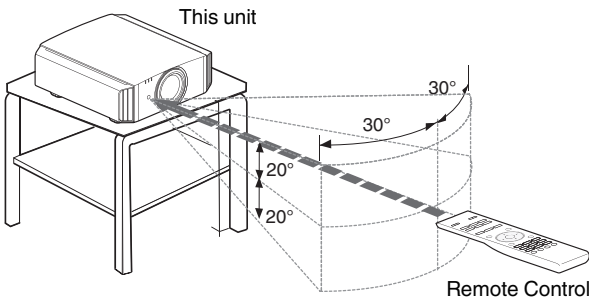
CAUTION

- Do not put the remote control in a place with an exposure to direct sun light or high temperature. It may deformed due to heat, or the internal components may be adversely affected resulting in fire hazard.
- Remove the batteries from the remote control when storing the remote control.
  Storing the remote control for a prolonged period without removing the batteries can cause battery leakage.

Effective Range of Remote Control Unit

When aiming the remote control toward the sensor on this unit (front or rear), ensure that the distance to the sensor is within 7 m.
If the remote control fails to work properly, move closer to this unit.

This unit

30°
30°
20°
20°

Remote Control

Control through reflection off a screen, etc.

Ensure that the total of distance A (between this unit and the screen) and distance B (between the remote control and the screen) is within 7 m.

* As the efficiency of signals reflected from the remote control unit varies with the type of screen used, the operable distance may decrease.
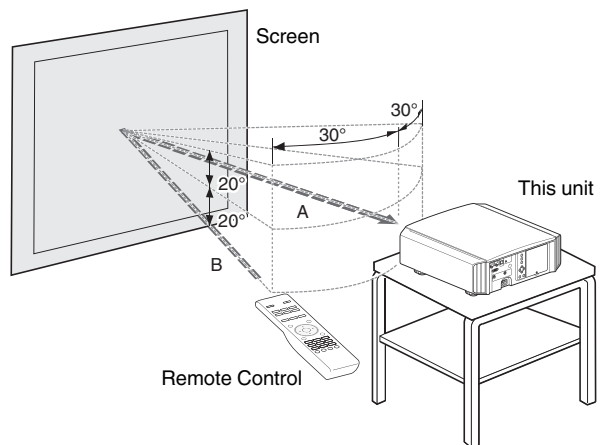
Screen

30°
30°
20°
20°
A
B
This unit

Remote Control

CAUTION

- Do not put the remote control in a place with an exposure to direct sun light or high temperature.
  It may deformed due to heat, or the internal components may be adversely affected resulting in fire hazard.
- Remove the batteries from the remote control when storing the remote control.
  Storing the remote control for a prolonged period without removing the batteries can cause battery leakage.

Installing the Projector

Precautions during Installation

Please read the following carefully before installing this unit.

Do not install at the following

This unit is a precision device. Please refrain from installing or using it at the following locations. Otherwise, it may cause fire or malfunction.

- Dusty, wet and humid places
- Places subject to oily smoke or cigarette smoke
- On top of a carpet or bedding, or other soft surfaces
- Places exposed to direct sunlight
- Places with a high or low temperature
- Do not install this unit in a room that is oily or subject to cigarette smoke. Even a small quantity of smoke or oiliness can have a long-term impact on this unit.
- * This unit produces a great amount of heat, and is designed to take in cool air to cool its optical components. Using the unit at the above locations may cause dirt to attach to the light path, thereby resulting in dark images or dull colors.
- * Dirt that sticks to the optical components cannot be removed.

Maintain clearance from the wall, etc.

As the unit discharges a large amount of heat, install it with adequate clearance from the surroundings as shown below.

150 mm and above

300 mm and above

300 mm and above

150 mm and above

Front

200 mm and above
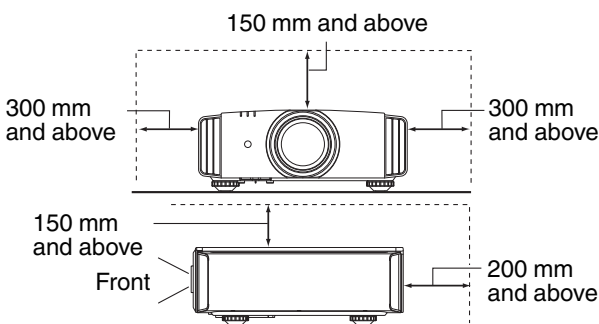
Leave the front area of the unit unblocked.
If there is any obstructing object in front of the exhaust vent, hot air will flow back to the unit and cause it to heat up. Hot air flowing out of the unit may cast shadows on the screen (heat haze phenomenon).

Using the projector

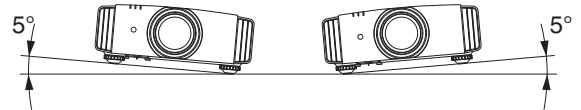This unit uses a projection lamp, which will heat up when in use.
Please refrain from projecting in the following circumstances. Otherwise, it may cause fire or malfunction.

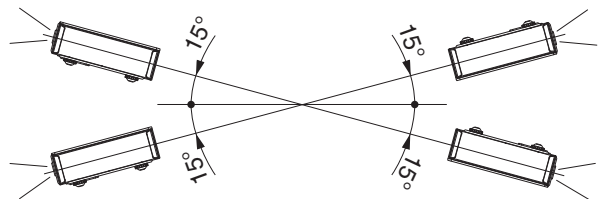- Projection with the unit stood vertically
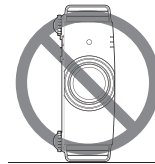
- Projection with the unit inclined at an angle

Horizontal inclination: within ± 5 °

5°   5°

Vertical inclination: within ± 15 °

15°   15°   15°   15°

- Malfunction may occur if the angle is not set within the abovementioned range.

Installing the screen

Install the unit and the screen such that they are perpendicular to each other.

Screen

Front
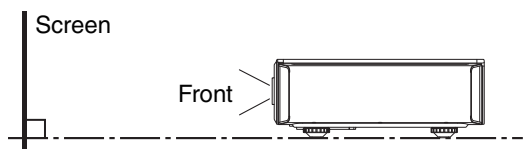
- Please choose a screen material with non-uniform patterns. Uniform patterns such as checks may cause interference patterns to occur.
- In this case, you can change the size of the screen to make the interference patterns less noticeable.

Using the projector at a high altitude

When using this unit at a location that is higher than 900 m above sea level (low air pressure), set the "High Altitude Mode" to "On". (P. 50)

Precautions during Mounting

Securing (mounting) the projector
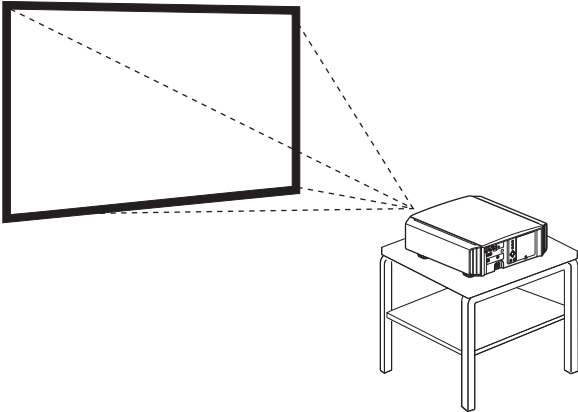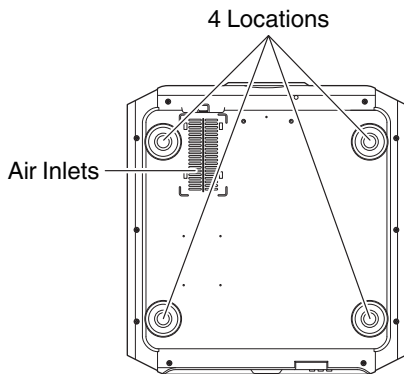

- When this unit is to be mounted to a fixed position for use, install it horizontally.
- Make sure to secure the main unit to prevent accidents such as during an earthquake.

Securing with screws

4 Locations

Air Inlets

Remove the four feet at the bottom, and fasten using the screws (M5 screws, 13 to 23 mm).

* Using screws other than those designated may cause the unit to break down.
* Leave a clearance of at least 10 mm from the bottom surface of the unit to allow it to take in cool air.

Securing the projector (ceiling mount)
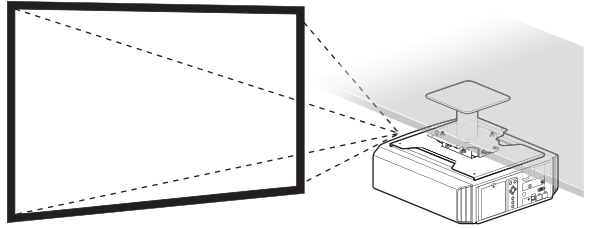
- Be sure to ask your dealer to install the unit for you. Installing the unit on your own may cause the unit to fall resulting in injury.
- Take the necessary actions to prevent the main unit from falling off such as during an earthquake.
- Regardless of the warranty period, JVC is not liable for any product damage caused by mounting the unit with non-JVC ceiling fittings or to an environment that is not suited for ceiling mount.
- When using the unit with it suspended from a ceiling, pay attention to the surrounding temperature. When a heater is in use, the temperature around the ceiling may be higher than expected.
- To attach the unit to the ceiling mount bracket, set the torque between the range of 1.5N m to 2.0N m. Tightening with torque exceeding the above range may cause damage to the unit, which may result the unit to fall.
- Install the outlet at an accessible height to unplug from the wall. Or install the circuit breaker at an accessible height to shut down the projector. If you need information, please consult your authorized dealer or specialist.

Adjusting the Position

Adjusting the elevation angle of the projector

The height and inclination of the unit (0 to 5 mm) can be adjusted by turning the feet.
Lift the unit and adjust the four feet.

Feet

Extend   Contract
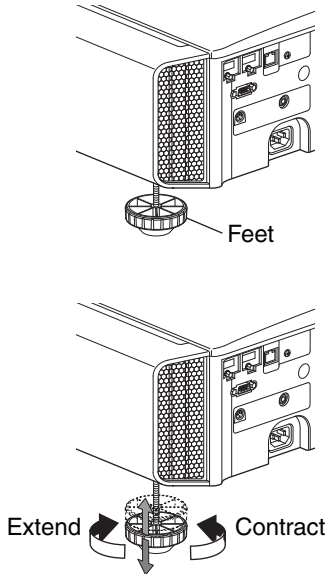
Adjusting the position of the image

By using the lens shift feature of this unit, you can shift the image upward/downward or to the left/right. Set it to your preferred position.

➡ "Adjusting the Lens According to the Projection Position" (P. 23)

■ Horizontal Position

Vertical Position: 0% (Center)

Up to about 34% of the projected image
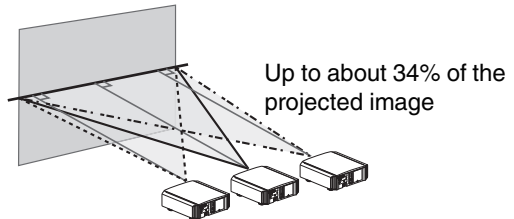
■ Vertical Position

Horizontal Position: 0 % (Center)

Up to about 80% of the projected image

■ Lens shift Range

Lens movement range

Horizontal lens shift (%)
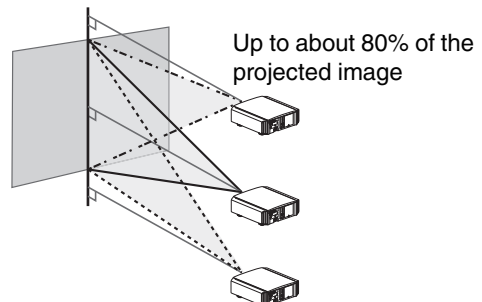
Vertical lens shift (%)
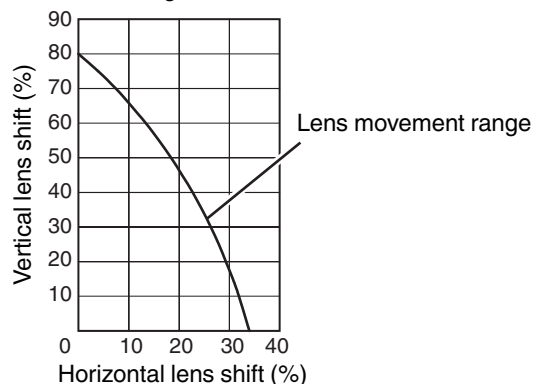
• The maximum vertical shift varies with the amount of horizontal shift. Similarly, the maximum horizontal shift also changes with the amount of vertical shift.

• The values on the graph are intended as a guide. Use them for reference during installation.

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Connecting the Projector

- Do not turn on the power until connection is complete.
- The connection procedures differ according to the device used. For details, please refer to the instruction manual of the device to be connected.
- This projector is used for projecting images. To output the audio of connected devices, please connect a separate audio output device, such as an amplifier or speaker.
- The images may not be displayed depending on the devices and cables to be connected.
  A high speed HDMI cable (sold separately) that is HDMI-certified is recommended.
  When using a standard cable, you are recommended to set the resolution of the equipment transmitting the video to 1080i or lower.
- Some cables cannot be connected to this unit due to the size of their connector cover.

Connecting to the HDMI Input Terminal (Digital Input)
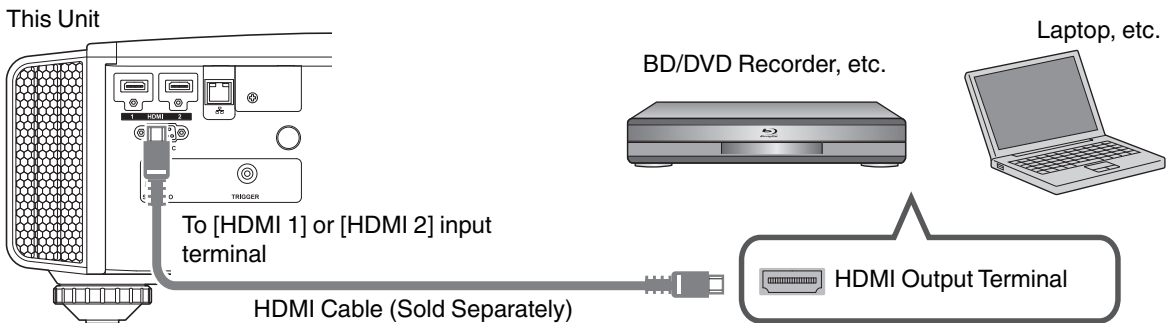
Connecting via HDMI cable

This Unit

BD/DVD Recorder, etc.

Laptop, etc.

To [HDMI 1] or [HDMI 2] input terminal

HDMI Cable (Sold Separately)

HDMI Output Terminal

- If noise occurs, move the laptop away from this unit.

Connecting through an AV amplifier

This Unit

BD/DVD Recorder, etc.

Speakers

HDMI Cable (Sold Separately)

To [HDMI 1] or [HDMI 2] input terminal

HDMI Cable (Sold Separately)

Speaker Cable (Sold Separately)
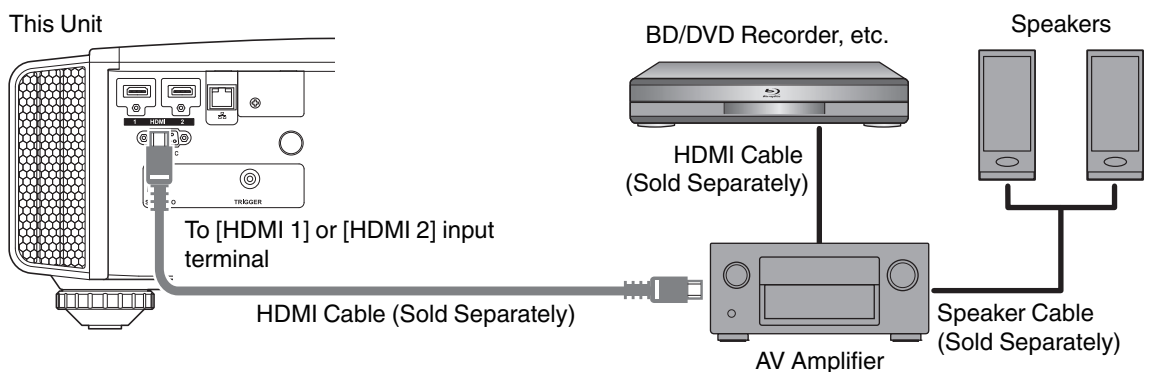
AV Amplifier

- If the source device is connected to the projector through an intermediate device such as an AV amplifier or divider, the video image may not appear depending on the specifications of the intermediate device.
  In this case, connect the source device directly to the projector, and check whether the video image is displayed.

Connecting via HDMI-DVI conversion cable

This Unit

Desktop PC, etc.

To [HDMI 1] or [HDMI 2] input terminal
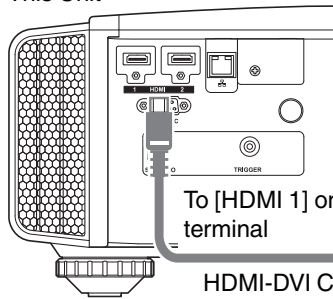
DVI Output Terminal

HDMI-DVI Conversion Cable (Sold Separately)

- If noise occurs, move the desktop PC away from this unit.
- If the video is not displayed, try to reduce the length of the cable or lower the resolution of the video transmitting equipment.

Connecting to the LAN Terminal

This Unit
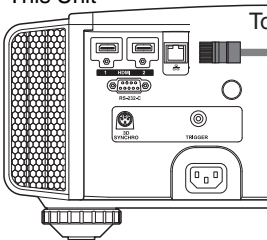
To [LAN] Terminal

Connection Cable (Sold Separately)

Hub

Network

Server

Desktop PC, etc.
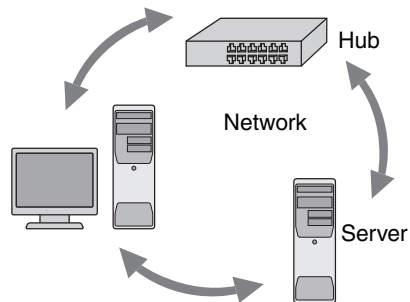
- The network is used to control this unit. It is not used for sending or receiving video signals.
- Please contact your network administrator for information concerning the network connection.
- Set "ECO Mode" to "Off" if LAN communication is performed in the Standby mode. (P. 55)
- For more information on control, please refer to "External Control" (P. 66).

Connecting to the RS-232C Terminal

This Unit
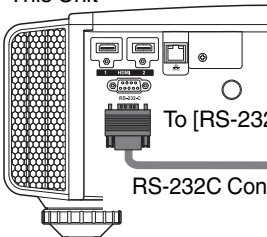
Laptop, etc.

To [RS-232C] Terminal

RS-232C Terminal

RS-232C Connection Cable (Sold Separately)

- Set "ECO Mode" to "Off" if RS-232C communication is performed in the Standby mode. (P. 55)
- For more information on control, please refer to "External Control" (P. 66).

Connecting to the TRIGGER Terminal

Screen

This Unit

To [TRIGGER] Terminal

Trigger Input Terminal (Ø3.5)

Trigger Cable (Sold Separately)
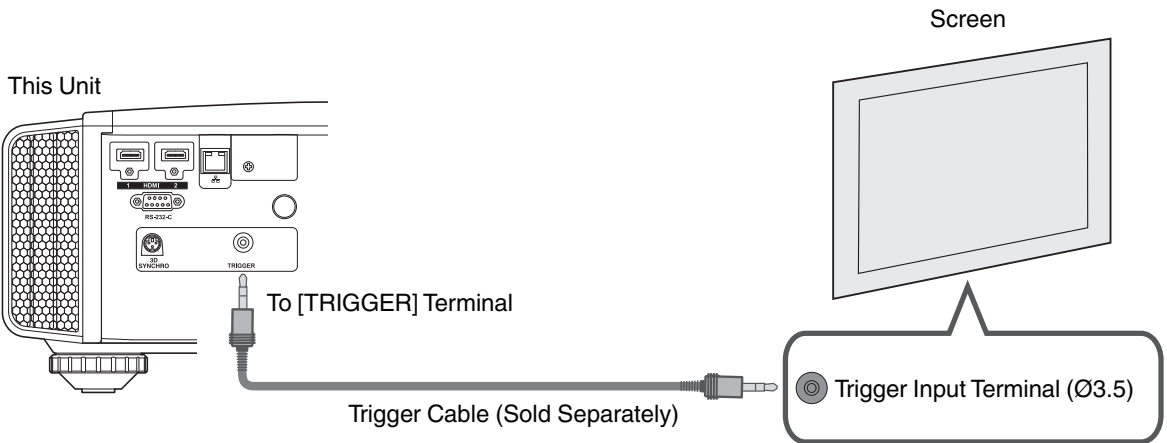
- Do not use it to supply power to other devices.
- Connecting to the audio terminal of another device may cause the device to malfunction or break down.
- Using beyond the rated value will cause the unit to malfunction.
- The trigger terminal outputs a voltage of 12 V. Exercise adequate caution to prevent short circuit.
- The factory setting is "Off". To change the setting, configure the "Trigger" item in the menu (P. 54).

Connecting the Power Cord (Supplied Accessory)
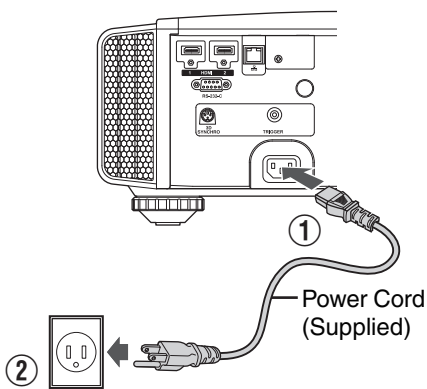
① Connect the power cord supplied to the power input terminal on the main unit

② Insert the supplied power plug into the wall outlet.

Power Cord
(Supplied)

📢 Precautions to prevent fire and electric shock

- The power consumption of this unit is large. Please connect it directly to the wall outlet.
- When you are not using the projector, please unplug the power cord from the outlet.
- Connect it using only the power cord supplied.
- Do not use a voltage other than the indicated power voltage.
- Do not damage, break or modify the power cord. Do not place a heavy object on the power cord, or heat or pull it. Doing so may damage the power cord.
- Do not unplug the power cord with wet hands.

Viewing Videos

X5000

Remote Control

This unit
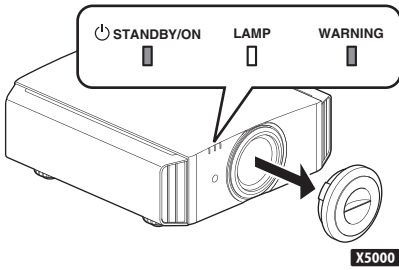
✏ MEMO

• When you are using **X5000**, be sure to remove the lens cover.
• Connect the power cord, and ensure that the "STANDBY/ON" indicator lights up in red.

1 Turn on the power

Remote control: press the ❙ [ON] button

Projector unit: press the ⏻/❙ [STANDBY/ON] button

• The "STANDBY/ON" indicator light switches from red to green (light goes off after the unit starts up).
• **X9000** (**X7000**) The lens cover opens.

"STANDBY/ON" lights up (red)   "STANDBY/ON" lights up (green)
In standby state   During lamp startup
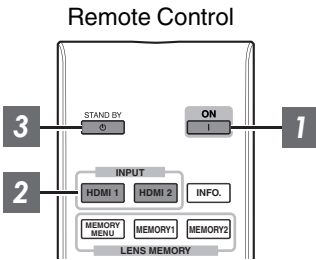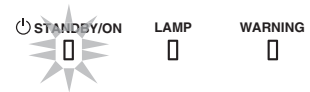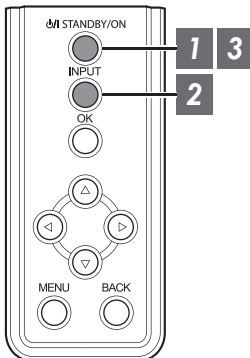
2 Choose the image to project

Remote control: press the [HDMI 1] or [HDMI 2] button
Projector unit: press the [INPUT] button to switch the input

• Play back the selected device to project the image.

To hide the image temporarily

Press the [HIDE] button on the projector unit or remote control

• The "STANDBY/ON" indicator light starts to blink in green.
• Press the [HIDE] button again to resume display of the image.
• The power cannot be turned off when the image is temporarily hidden.

Operate

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3 Turn off the power

Remote control: press the ⏻ [STAND BY] button

Projector unit: press the ⏻/| [STANDBY/ON] button

- While the "Are you sure you want to turn off?" message is displayed, press the button again.
- The lamp turns off, and the "STANDBY/ON" indicator switches from a green light to a red blinking light.
- After the light goes off, the fan will run for about 100 seconds to cool down the lamp (Cool-down mode). Do not disconnect the power cable while cooling is in progress.
- After about 100 seconds, the "STANDBY/ON" indicator switches from a blinking red to a solid red light.

"STANDBY/ON" blinking (red)　　　　"STANDBY/ON" lights up (red)
In the Cool-down mode　　　　　　　　　In standby state

⏻ STANDBY/ON　　LAMP　　WARNING　　　⏻ STANDBY/ON　　LAMP　　WARNING

- For **X5000**, attach the lens cover manually.
- For **X9000** **X7000**, the lens cover closes upon power off.

📢 CAUTION

- The power cannot be turned off within approximately 60 seconds after it has been turned on.
- The power cannot be turned on again while cooling is in progress (100 seconds).
- Pull out the power plug when the unit is not to be used for a prolonged period of time.
- If the indication of indicator differs from the description, refer to "Indicator Display on the Main Unit"P. 74 for details.

Operate

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Adjusting the Projector Screen

Adjusting the Lens According to the Projection Position
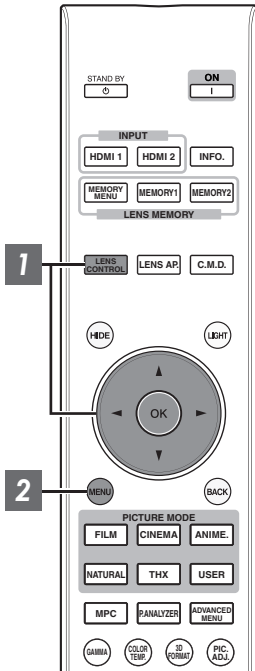
1 Press the [LENS CONTROL] button, and use the [▲▼◄►] keys to adjust Focus, Zoom (screen size), and Shift (screen position)
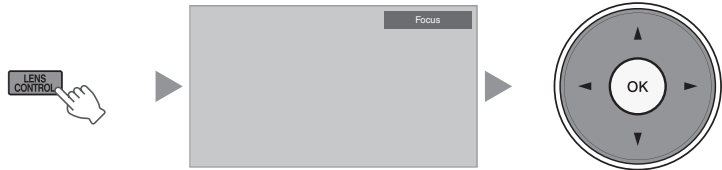
- Pressing the [LENS CONTROL] or [OK] button each time switches the mode in the following sequence: "Focus" → "Zoom" → "Shift" → "Focus"...
- Operation of the lens control feature is disabled when the lens lock is set to "On".
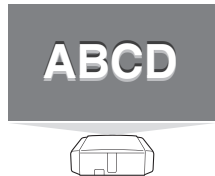
Focus Adjustment
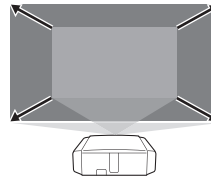
Zoom (Screen Size) Adjustment
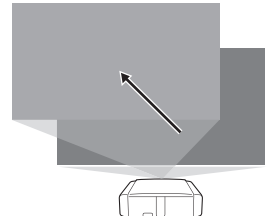
Shift (Screen Position) Adjustment

2 Press the [MENU] button once, or the [BACK] twice, to end adjustment.

Saving and Retrieving Adjustment Settings

The Focus, Zoom, and Shift settings can be saved or retrieved, so you can switch easily to a different aspect ratio (screen size) according to the image.

- In a state where no adjustment settings are saved (factory default), only "Lens Memory Save" is displayed.
- Operation of the lens control feature is disabled when the lens lock is set to "On".

Saving an adjustment data

1 Adjust focus, zoom, or shift (P. 23)

2 Press the [MEMORY MENU] button to display "Lens Memory Save"

- You can also save an adjustment data by selecting "Installation"→"Lens Control"→"Lens Memory Save" from the menu.

3 Select the item to save, and press the [OK] button

- The adjustment data is saved.
- Items with no adjustment data saved are displayed as [----].
- If you have selected an item for which an adjustment data has already been saved, the old data will be overwritten.
- You can change the name when saving an item. (P. 25)
- The maximum number of items can be saved is 10 for X9000 X7000 and 5 for X5000.

4 Press the [MENU] button to exit

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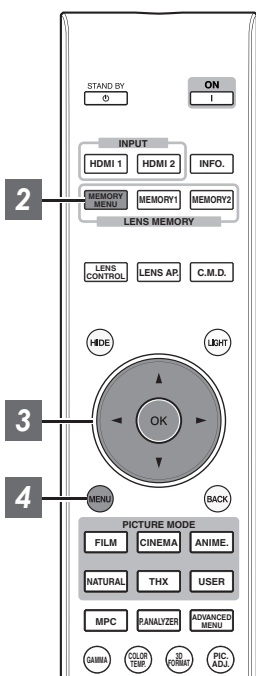
Retrieving an adjustment data

1 Press the [MEMORY MENU] button to display "Lens Memory Select"

- You can also retrieve an adjustment data by selecting "Installation"→"Lens Control"→"Lens Memory Select" from the menu.
- MEMORY1 and 2 can also be retrieved using the direct keys on the remote control.
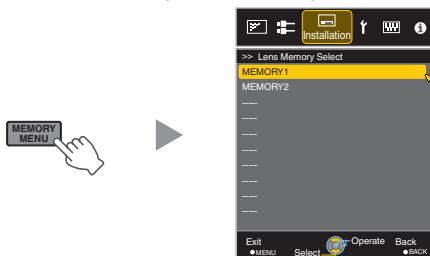
2 Select the adjustment data to retrieve, and press the [OK] button

- The retrieved data is adjusted automatically.
- If no adjustment data has been saved, the item will be grayed out and cannot be selected.

Renaming an adjustment data

1 Press the [MEMORY MENU] button to display "Lens Memory Name Edit"

- You can also edit an adjustment data by selecting "Installation"→"Lens Control"→"Lens Memory Name Edit" from the menu.
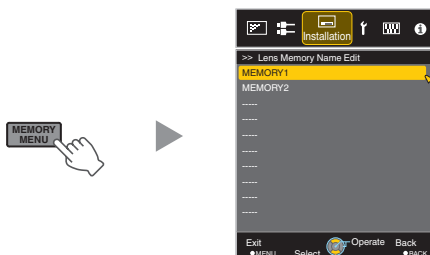
2 Select the adjustment data to edit, and press the [OK] button

- An edit screen appears.

Input Cursor

Selection Cursor

Character List

- You can input up to 10 characters.
- Characters that are usable include alphabets (upper or lower case), numeric characters, and symbols.
- Pressing the [Back] button cancels the content that is currently being edited, and exits the edit mode.

3 After renaming, select "OK" and press the [OK] button

4 Press the [MENU] button to exit

Setting Screen Correction

1 Set Screen Adjust

By selecting the optimal correction mode according to the characteristics of the screen in use, corrections can be performed to reproduce natural images with balanced colors.
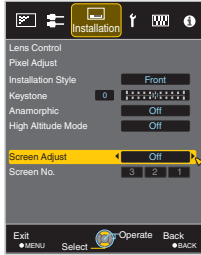
- This item is not available when "Color Profile" is set to "Off".
- For information on the screen and the corresponding correction mode, please visit our website.

http://www3.jvckenwood.com/english/projector/screen/

MEMO

- You can utilize the optional optical sensor and dedicated projector calibration software to make finer adjustments.
  For details on the dedicated projector calibration software, please visit our website.

http://www3.jvckenwood.com/english/download/index.html

Operate

Adjusting the Screen Size (Aspect)

The screen size of the projected image can be adjusted optimally according to the original screen size (aspect) that has been input.

1 Press the [MENU] button to display the menu

2 Select "Input Signal"→"Aspect" from the menu
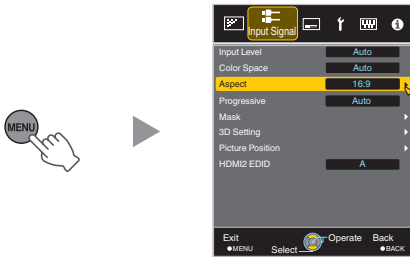
Setting	Description	
4:3	Sets the screen size to 4:3. For HD signals, the two sides are reduced.	Displayed only during video signal input.
16:9	Sets the screen size to 16:9. For SD signals, the two sides are expanded.	
Zoom	Enlarges the entire image. * Not selectable in the case of HD signals.	
Auto	Positions the image at the center with the entire image enlarged.	Displayed only during PC signal input.
Just	Displays the input image in the actual size.	
Full	Fills the entire screen with the image with the size (aspect) of the input image ignored.	

• This item is grayed out and cannot be adjusted when there is no signal, signal is out of range, or during 3D or 4K input.

3 Press the [MENU] button to exit

Example of input image and screen size

HDMI Signal Input

Output Image / Input Image	Setting		
	4:3	16:9	Zoom
4:3			
2.35:1 (Cinema Scope)			

PC Signal Input

Output Image / Input Image	Setting		
	Auto	Just	Full
1280×1024			
1920×1200			

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Viewing 3D Movies

By using the 3D GLASSES (PK-AG1, PK-AG2, or PK-AG3) and 3D SYNCHRO EMITTER (PK-EM1 or PK-EM2), both sold separately, you can enjoy 3D video images.

- For 3D GLASSES and 3D SYNCHRO EMITTER that are compatible with this unit, please refer to "Optional Accessories"P. 9.

Installing the 3D SYNCHRO EMITTER

1 Connect 3D SYNCHRO EMITTER to the [3D SYNCHRO] terminal on the main unit

Installation Example

This Unit

3D GLASSES
PK-AG3

3D SYNCHRO EMITTER
PK-EM2
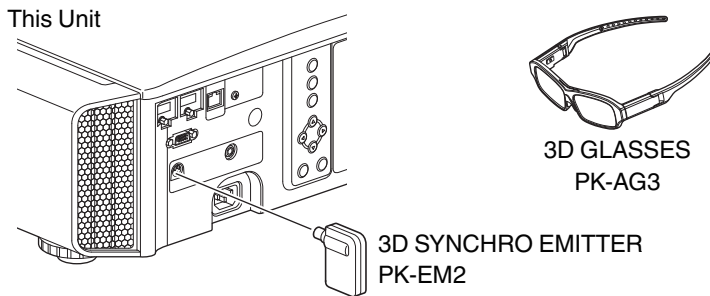
✄ CAUTION

- If PK-EM1 is used, adjust the position of the 3D SYNCHRO EMITTER such that the 3D GLASSES can receive the signal from the 3D SYNCHRO EMITTER.
  For more details, please refer to the instruction manual of PK-EM1.

Operate

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Viewing 3D Movies

1 Connect this unit to a 3D-compatible HDMI device, and turn on the power to play back the 3D video image

- For details on how to play back 3D video images, please refer to the instruction manual of the player or recorder in use.
- When 3D signals are received, the video image switches automatically to the 3D format.
- This unit supports the following 3D formats.
  - Frame packing
  - Side-by-side
  - Top-and-bottom
- In the default setting, "3D Format" is set to "Auto" for automatic projection of 3D images.

If the image does not switch to 3D automatically

① Select "3D Format"
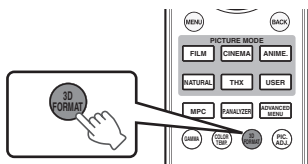
- Pressing the [3D FORMAT] button each time switches the mode in the following sequence: "Auto" → "Side by Side" → "Top and Bottom" → "2D" → "Auto"...
- You can also perform setting from "Input Signal"→"3D Setting"→"3D Format" in the menu.

Format	Description
Auto	The format is detected and configured automatically.
Side by Side	Select this setting if the 3D input signal is of the side-by-side format.
Top and Bottom	Select this setting if the 3D input signal is of the top-and-bottom format.
2D	Select this setting if 2D images are falsely recognized as 3D ones.

* If a signal cannot be displayed as 3D image, selecting the format does not switch the signal to a 3D image.
For more information on possible input signals, please refer to ("Types of Possible Input Signals"P. 73).

2 Turn of the power of the 3D GLASSES and put them on

- The PK-AG1 powers on automatically.

Adjusting 3D Movies

3D video images may appear differently to different viewers. It may also be affected by your physical condition at the time of viewing.
You are therefore recommended to adjust the video images accordingly.

1 Select "Input Signal"→"3D Setting" from the menu

Adjusting parallax (Parallax)
Adjust the displacement of the image for the left and right eyes separately to obtain the best 3D effect.

- To do so, use the ◀ ▶ keys to move the cursor.
- Setting range: -15 to +15

Adjusting crosstalk (Crosstalk Cancel)
Double images (overlapping of the left image with the one on the right or vice versa) can be reduced to deliver a clear quality.

- To do so, use the ◀ ▶ keys to move the cursor.
- Setting range: -8 to +8

2 Press the [MENU] button to exit

Selecting an Image Quality According to the Video Type

Setting the Picture Mode

You can adjust the image quality according to the type of video image you are viewing.

1 Press the [PICTURE MODE] button to select "Picture Mode"

- You can also perform setting from "Picture Adjust"→"Picture Mode" in the menu.

Item	Description
Film*1 **X9000** **X7000**	Reproduces faithfully the texture of movie films.
Cinema*1	Reproduces the image in vivid colors. Suitable for all movies.
Animation*1	Suitable for animated works.
Natural*1	Image quality that focuses on natural color and gradation reproduction. Suitable for drama footage, etc.
THX*1 **X9000** **X7000**	Image quality certified by THX.
User 1 to User 6 *2 *3	Enables user-defined image quality data to be saved and retrieved.

*1 For Picture modes with the *1 mark, the optimal settings for 2D and 3D signals are stored separately and applied automatically according to the selected mode.
  - Edited settings will also be saved separately.
  - No changes will be made to the Picture mode name.

*2 For **X5000**, "User 4" to "User 6" cannot be configured from the [PICTURE MODE] button. Configure the setting using "Picture Adjust"→"Picture Mode" in the menu.

*3 To view videos that support the x.v.Color format, select a user setting ("User 1" to "User 6") in "Picture Mode", and set "Color Profile" to "x.v.Color".

Adjust/Set

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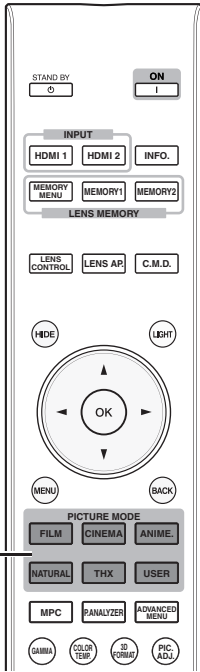
Setting the Color Profile

By setting the "Color Profile" (color space information) according to the "Picture Mode", you can fine-tune the image quality according to the movie you are viewing.

1 Configure "Picture Mode" (P. 30), then select "Picture Adjust"→"Color Profile" in the menu

- The selectable "Color Profile" settings vary according to the "Picture Mode" and also whether the signal is 2D or 3D.

List of "Color Profile" for "Picture Mode" X5000

Picture Mode	2D Signal Input	3D Signal Input	Description
Cinema	Cinema	—	Color space suitable for all movies.
	Standard	Standard	Color space of the HDTV standard. *1
	—	3D Cinema	Color space suitable for all 3D movies.
Animation	Animation	—	Color space that is suitable for animated works.
	Standard	Standard	Color space of the HDTV standard. *1
	—	3D Animation	Color space suitable for 3D animation works.
Natural	Video	—	Color space that is suitable for drama footage, etc.
	Standard	Standard	Color space of the HDTV standard. *1
	—	3D Video	Color space suitable for 3D broadcasts.
User 1 to User 6	Standard		When "Picture Mode" is set to any of the settings from "User 1" to "User 6", you can select one of the "Color Profile" shown on the left.
	Cinema		
	Video		• See above for the description of the respective "Color Profile".
	Natural		
	3D Cinema		
	3D Video		
	3D Animation		
	x.v.Color*2*3		Color space that is close to that of the x.v.Color standard.
	Off		Disables color space adjustment.
	Custom 1 to Custom 6		Saves the auto calibration values.
			• To perform auto calibration, you need to get ready a commercially available optical sensor and the projector calibration software program. For more details, please refer to our website.

*1 HDTV is the abbreviation for High Definition Television.

*2 To view videos that support the x.v.Color format, select a user setting ("User 1" to "User 6") in "Picture Mode", and set "Color Profile" to "x.v.Color".

*3 x.v.Color is a wide color space standard for used in videos; it includes wider color gamut than the HDTV standard.

Adjust/Set

List of "Color Profile" for "Picture Mode" X9000 X7000

Picture Mode	2D Signal Input	3D Signal Input	Description
Film	Film 1	—	Color space that is close to the characteristics of Eastman Kodak Company movie films.
	Film 2	—	Color space that is close to the characteristics of FUJIFILM Corporation movie films.
	Film 3	—	Color space suitable for digitally remastered piece of art based on a Technicolor film.
	—	3D Film*1	Color space suitable for 3D movies recorded in film.
Cinema	Cinema 1	3D Cinema	Original JVC cinema-specific color gamut that achieves a balance between increased brightness and color vividness.
	Cinema 2	—	Color space that is close to that of the DCI standard.
	Standard	Standard	Color space of the HDTV standard. *2
	—	3D Cinema	Color space suitable for all 3D movies.
Animation	Anime 1	3D Animation	Color space that is suitable for CG animation works. Ideal for animated works with bright colors.
	Anime 2	—	Color space that is suitable for cel animation works. Ideal for animated works with light colors.
	Standard	Standard	Color space of the HDTV standard. *2
	—	3D Animation	Color space suitable for 3D animation works.
Natural	Video	3D Video	Color space that is suitable for drama footage, etc. making use of the increased brightness.
	Standard	Standard	Color space of the HDTV standard. *2
	Reference	—	Color space that faithfully reproduces the video as it is.
	—	3D Video	Color space suitable for 3D video materials.
THX	THX*3	3D THX*3	Color space of the THX standard.
User 1 to User 6	Standard		When "Picture Mode" is set to any of the settings from "User 1" to "User 6", you can select one of the "Color Profile" shown on the left. • See above for the description of the respective "Color Profile".
	Cinema 1		
	Cinema 2		
	Anime 1		
	Anime 2		
	Video		
	Reference		
	3D Cinema		
	3D Video		
	3D Animation		
	x.v.Color*4*5		Color space of the x.v.Color standard.
	Off		Disables color space adjustment.
	Custom 1 to Custom 6		Saves the auto calibration values. • To perform auto calibration, you need to get ready a commercially available optical sensor and the projector calibration software program. For more details, please refer to our website.

*1   The value is fixed during 3D signal input, and selection cannot be made.
*2   HDTV is the abbreviation for High Definition Television.
*3   Color Profile is fixed when "THX" is selected as the "Picture Mode".
*4   To view videos that support the x.v.Color format, select a user setting ("User 1" to "User 6") in "Picture Mode", and set "Color Profile" to "x.v.Color".
*5   x.v.Color is a wide color space standard for used in videos; it includes wider color gamut than the HDTV standard.

Adjust/Set

Adjusting to the Preferred Color (Color Management)

Based on the setting of the selected "Color Profile", you can adjust each of the following colors according to your preference: Red, Yellow, Green, Cyan, Blue, and Magenta.

1 Press the [ADVANCED MENU] button to display the "Color Profile" menu

2 Set "Color Management" to "On", and press the [OK] button

- You can also perform setting from "Picture Adjust"→"Color Profile"→"Color Management" in the menu.
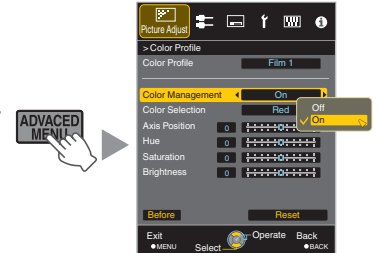
3 Adjust to the preferred color.

① Select "Color Selection", and press the ◀ ▶ keys to select the color to adjust

- For color adjustment, select the color from the following: "Red", "Yellow", "Green", "Cyan", "Blue", "Magenta".

② Adjust the selected color

Item	Setting Range	Description
Axis Position	-30 to 30	Fine-tune the position of the central axis of the selected color.
Hue	-30 to 30	Adjusts the hue (color tone).
Saturation	-30 to 30	Adjusts the color saturation (vividness). -30 (dull) to +30 (vivid)
Brightness	-30 to 30	Adjusts the brightness. -30 (dark) to +30 (bright)

- Selecting "Reset" resets all the adjustment data.
  - Pressing the [HIDE] button on the remote control enables you to check the image before adjustment.

Axis Position (Image)

Adjustable range when Red is selected: ± 30° with Red as the center

Counterclockwise rotation: +

Clockwise rotation: -
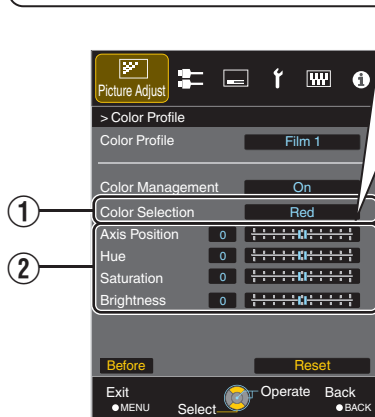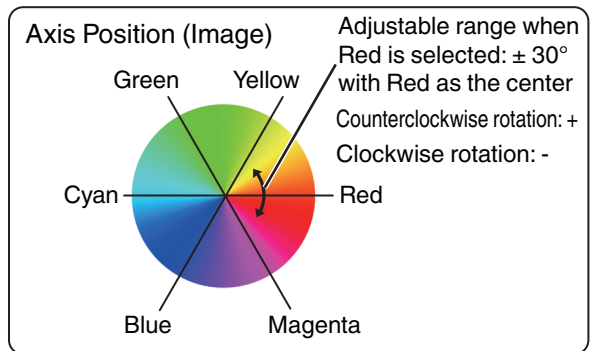
4 Press the [MENU] button to exit

Adjust/Set

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Adjusting Movies for Increased Expressiveness (Multiple Pixel Control)

The new image-processing algorithm developed by JVC helps to create a natural impression that is sharper at areas in focus, and softer at areas that are not in focus, enabling you to enjoy highly expressive 4K images with a greater sense of depth.

1 Press the [MPC] button to display the adjustment menu

• You can also perform setting from "Picture Adjust"→"MPC Level" in the menu.

2 Make adjustments according to your preference based on the setting of the selected "Picture Mode"

* The factory setting varies with the "Picture Mode".

Item	Setting	Description
4K e-shift	On (4K)/Off (2K)	Switches the display resolution.
Original Resolution	Auto/4K/ 1080p	For selecting a resolution for the content you are viewing.
Enhance*	0 to 10	Enhances the sharpness of the image.
Dynamic Contrast	0 to 10	Enhances the contrast of the image.
Smoothing	0 to 10	Enhances the blurriness of the image for a softer effect.
NR	0 to 10	For reducing the noise of the video image.

* In the case of 4K 50/60p and other input signals, the respective setting values are saved.

• In the default "Original Resolution" setting ("Auto"), the resolution is set automatically.

• By increasing the setting range, you can expect enhanced effects.

• Images are displayed in the original resolution (2K) when "4K e-shift" is set to "Off".

• "Original Resolution", "Enhance", "Dynamic Contrast", and "NR" can be adjusted even when "4K e-shift" is set to "Off".

• "4K e-shift" is fixed at "On" during 4K signal input.

• "Original Resolution" is fixed at "Auto" during 4K 50/60p signal input. "Dynamic Contrast", "Smoothing" and "NR" are grayed out.

• "4K e-shift" is fixed at "Off" during 3D signal input.

3 Press the [MENU] button to exit

✎ Toggling between the States before and during Adjustment

Pressing the [HIDE] button on the remote control enables you to toggle between the states before adjustment and during adjustment.

✎ About the analysis screen

Pressing the [P.ANALYZER] button on the remote control displays the analysis screen. The operation varies with the state of the OSD.

* The analysis screen is not displayed during 4K 50/60p signal input.

1 Press the [P.ANALYZER] button

The frequency components of the input image are displayed.
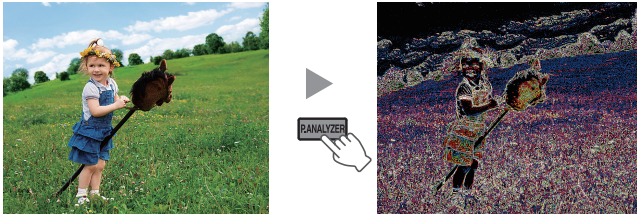
- The frequency components are distinguished using different colors.
- When setting the "Original Resolution" manually, select "4K" if high-frequency components constitute the majority, and a lower resolution if there are more low-frequency components.

	Red	Yellow	Green	Cyan	Blue	Purple
Frequency	Low ←————————————————————→ High					

2 Make adjustments while looking at the analysis screen

① Press the [MPC] button to display the adjustment menu

You can also perform setting from "Picture Adjust"→"MPC Level" in the menu.

② Make adjustments according to your preference based on the setting of the selected "Picture Mode"*

- With "Enhance" selected, pressing the [P.ANALYZER] button displays the analysis screen and the area where the "Enhance" effect is applied appears in "cyan" color.
- With "Dynamic Contrast" selected, pressing the [P.ANALYZER] button displays the analysis screen and the area where the "Dynamic Contrast" effect is applied appears in "yellow" color.
- With "Smoothing" and "NR" selected, pressing the [P.ANALYZER] button displays the analysis screen and the area where the "Smoothing" and "NR" effects are applied appears in "magenta" color.
- * You can make adjustments with the analysis screen displayed.
  Increasing the value enhances the effect and the color displayed is darker.

3 Press the [P.ANALYZER] to exit the analysis screen

Adjust/Set

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Fine-tuning the Image Quality

Adjusting the Output Value of the Projected Image (Gamma)

You can adjust the output value of the projected image with respect to the video signal input.

Example of gamma adjustment

The overall image appear brighter with respect to the original image, making the dark areas more visible.
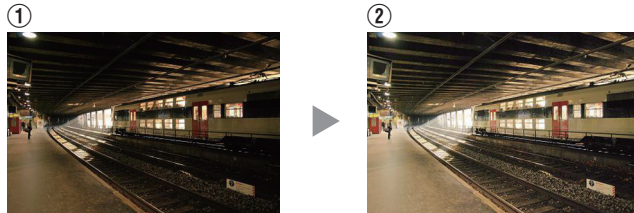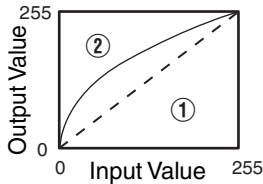
The photos are for illustrative purposes only.

Increases the contrast with respect to the original image, creating a greater sense of depth.
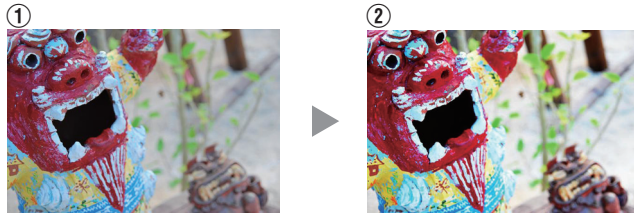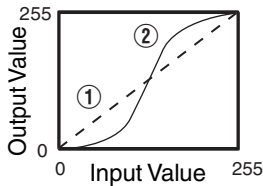
The photos are for illustrative purposes only.
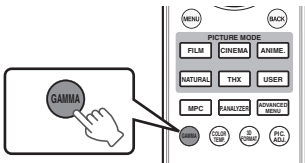
1 Press the [GAMMA] button

- Pressing the [GAMMA] button each time switches the setting in sequence.
- You can also perform setting from "Picture Adjust"→"Gamma" in the menu.
- *1 The setting value varies with the model in use, as well as the "Picture Mode".
- *2 If HDR (high dynamic range) signal is detected, the setting value automatically switches to "D".

Gamma Settings for Different "Color Profile" X5000

Color Profile	Selectable Settings	Description
Standard Cinema Animation Video 3D Cinema 3D Video 3D Animation Off	Normal	Recommended setting for normal viewing.
	A	Places more emphasis on the brightness compared to the Normal setting.
	B	Places more emphasis on the contrast compared to the Normal setting.
	C	Places more emphasis on the gradation compared to the Normal setting.
	D	Gamma suitable for viewing HDR (High Dynamic Range) content.
	Custom 1 to Custom 3	Fine-tunes the gamma setting according to the user's preference.
x.v.Color	Normal*	Recommended setting for normal viewing.

 * When "Color Profile" is set to "x.v.Color", the setting is fixed at "Normal".

Gamma Settings for Different "Color Profile" X9000 X7000

Color Profile	Selectable Settings	Description
Film 1	Film 1	Image is close to the characteristics of Eastman Kodak Company movie films.
	Film 2	Places more emphasis on the gradation compared to the "Film 1" setting.
	Custom 1 to Custom 3	Fine-tunes the gamma setting according to the user's preference.
Film 2	Film 1	Image is close to the characteristics of FUJIFILM Corporation movie films.
	Film 2	Places more emphasis on the contrast compared to the "Film 1" setting.
	Custom 1 to Custom 3	Fine-tunes the gamma setting according to the user's preference.
Film 3	Film 1	Places emphasis on the gradation.
	Film 2	Places emphasis on the contrast.
	Custom 1 to Custom 3	Fine-tunes the gamma setting according to the user's preference.
3D Film	Film 1	Places emphasis on the gradation.
	Film 2	Places emphasis on the contrast.
	Custom 1 to Custom 3	Fine-tunes the gamma setting according to the user's preference.
Standard Cinema 1/Cinema 2 Anime 1/Anime 2 Video Reference 3D Cinema 3D Video 3D Animation Off	Normal	Recommended setting for normal viewing.
	A	Places more emphasis on the brightness compared to the Normal setting.
	B	Places more emphasis on the contrast compared to the Normal setting.
	C	Places more emphasis on the gradation compared to the Normal setting.
	D	Gamma suitable for viewing HDR (High Dynamic Range) content.
	Custom 1 to Custom 3	Fine-tunes the gamma setting according to the user's preference.
x.v.Color	Normal*1	Recommended setting for normal viewing.
THX 3D THX	THX*2	Video of the THX standard.

*1 When "Color Profile" is set to "x.v.Color", the setting is fixed at "Normal".

*2 When "Color Profile" is set to "THX"/"3D THX", the setting is fixed at "THX".

Adjust/Set

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Fine-tuning to the Preferred Gamma Setting

You can perform fine adjustments based on the selected gamma adjustment setting.

1 Press the [ADVANCED MENU] button to display the gamma menu

- You can also perform setting from "Picture Adjust"→"Gamma" in the menu.
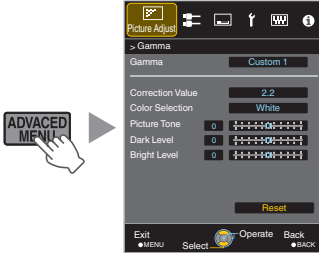
2 Adjust to the preferred setting

Item	Description	Setting
Color Selection	Select "Color Selection", and select the color to adjust	White/Red/Green/Blue
Picture Tone	Adjusts the overall brightness automatically for a well-balanced result without compromising the gradation of the image.	-16 (darkens image for an underexposed effect) to +16 (brightens image for an overexposed effect)
Dark Level	Adjusts the dark areas of the input image. (Each of White/Red/Green/Blue can be adjusted.) • To do so, use the ◀ ▶ keys to move the cursor.	-7 (darkens the shadows) to +7 (brightens the shadows)
Bright Level	Adjusts the bright areas of the input image. (Each of White/Red/Green/Blue can be adjusted.) • To do so, use the ◀ ▶ keys to move the cursor.	-7 (darkens the highlights) to +7 (brightens the highlights)

* Adjustment cannot be made when "Color Profile" is set to "x.v.Color".

✎ Selecting the Default Value for Making Adjustments

- When one of "Custom 1" to "Custom 3" is selected in "Gamma", you can select a "Correction Value".
- Select "Correction Value", and press the ◀ ▶ keys to select a correction value (setting value) as a base value for adjustment.
- For details on the correction value (setting value), please refer to P. 36 and P. 37.

X5000

Normal, A, B, C, D, 1.8, 1.9, 2.0, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, Import

X9000 **X7000**

When "Picture Mode" is set to "Film":
Film 1, Film 2, Import
When "Picture Mode" is set to a value other than "Film":
Normal, A, B, C, D, 1.8, 1.9, 2.0, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, Import

- The smaller the value, the brighter the dark areas of the image will become. At the same time, the bright areas will appear blown out.
- Selecting "Import" enables you to select the gamma data created externally. The factory setting for "Import" is the same as the "Normal" setting.
- You can use the projector calibration software to customize the gamma data adjustment, and import the created gamma data.

For more details, please refer to our website.
http://www3.jvckenwood.com/english/download/index.html

✎ About gamma adjustment

Gamma Curve

Bright 255

Output Value

D" D

B

Dark 0

0

255

C

Dark Input Value Bright
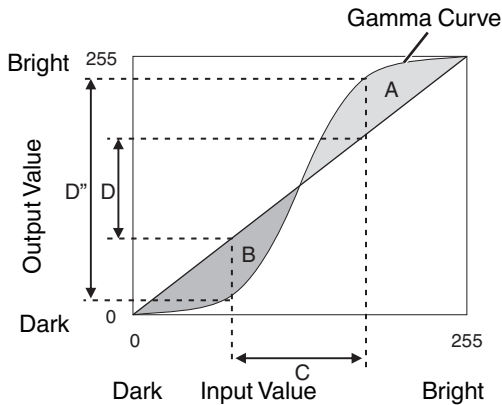
- When the gamma curve is a straight line:
  The brightness and contrast of the video input will be the same as that of the video output.
- Area for which the gamma curve is above the straight line (A):
  Video output appears brighter than the input.
- Area for which the gamma curve is below the straight line (B):
  Video output appears darker than the input.
- Area for which the slope of the gamma curve is steep (midtone) (C):
  The grayscale range of the video output becomes wider, and the contrast increases (D→D').

Reducing the After-image of Fast-moving Images (Blur Reduction)

Clear Motion Drive (C.M.D.)

Optimal interpolation according to the content is made possible with the new high-definition image interpolation technique that supports 3D images.
For some scenes, interpolation may cause distortion in the image. In this case, set to "Off".

■ Original Image

■ Interpolation Enabled

Intermediate Frame Generation   Intermediate Frame Generation
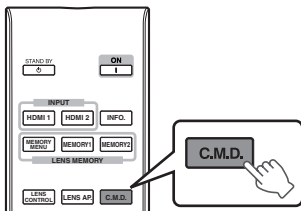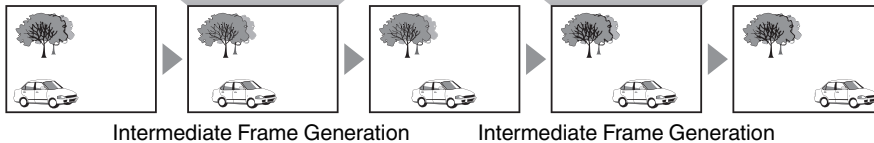
1 Press the [C.M.D.] button

- Pressing the [C.M.D.] button each time switches the mode in the following sequence: "Off"→"Low"→"High"→"Inverse Telecine"→"Off"...

Setting	Description
Off	Interpolation is not performed.
Low	Softens the image quality.
High	Image quality becomes softer than that of the "Low" setting.
Inverse Telecine	60i/60p video images such as those of TVs and DVDs. Suitable for original images that are 24-frame film sources. • Does not function for 24p video images.

* C.M.D. is the abbreviation for Clear Motion Drive.

Adjust/Set

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Motion Enhance

Optimal image quality with reduced image blurring is made possible by enhancing the responsiveness of the liquid crystal panel.
If the image outline is unnatural, set this item to "Off".

1 Select "Picture Adjust"→"Blur Reduction"→"Motion Enhance" from the menu

Setting	Description
Off	Does not perform correction.
Low	Reduces image blurring.
High	Further reduces image blurring than "Low".

- If "Keystone" is set to a value other than "0", the "Motion Enhance" is set to "Off" and grayed out.
- If "Anamorphic" is set to other than "Off", the "Motion Enhance" is set to "Off" and grayed out.

Viewing High Contrast Images (Lens Aperture)

JVC has developed an image analysis algorithm, which analyzes the state of the video image in real time, and controls the aperture dynamically according to the image information.
This technology enables viewers to enjoy video images with enhanced contrast.
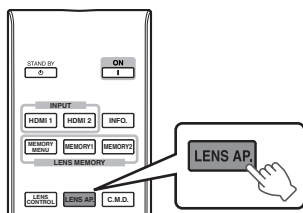
1 Press the [LENS AP.] button

Pressing the [LENS AP.] button each time switches the setting in sequence.

Setting	Description
Auto 1	Image contrast is enhanced.
Auto 2	Places emphasis on the gradation.
Manual	Does not perform dynamic control. Select this setting to perform adjustment manually.

*1 Manual adjustment is disabled in the "Auto 1" and "Auto 2" setting.
To perform adjustment manually, select "Manual".

*2 When the setting is changed to Auto after performing manual adjustment, the value set manually will be used as the aperture value for Auto.

Adjustments and Settings in the Menu

Pressing the [MENU] button displays the menu.

Press the [▲▼◀ ▶] keys to select an item, followed by pressing the [OK] button to confirm the selection.

List of Menu Items

Adjust/Set

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Adjust/Set

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Picture Adjust

Picture Mode

You can adjust the image quality according to the type of video image you are viewing.
➡ "Setting the Picture Mode" (P. 30)

Clear Black

Adjusts the difference in brightness in an image electrically to produce an image with contrast.

Setting	Description
Off	Does not perform correction.
Low	Mode with a mild effect.
High	Mode with a strong effect.

Lamp Power

The brightness of the lamp can be set to "Low" or "High".

- The factory setting varies with the "Picture Mode".
- Continuous use at the "High" setting may cause the lamp to darken faster.

Lens Aperture

JVC has developed an image analysis algorithm, which analyzes the state of the video image in real time, and controls the aperture dynamically according to the image information.
This technology enables viewers to enjoy video images with enhanced contrast.
➡ "Viewing High Contrast Images (Lens Aperture)" (P. 40)

- Stopping down the aperture reduces the brightness and increases the contrast.
- Setting range: -15 (stops down) to 0 (opens up)

User Name Edit

You can edit the "User 1" to "User 6" names in the Picture mode.

- Characters that are usable include alphabets (upper or lower case), numeric characters, and symbols.
- Enter not more than 10 characters.
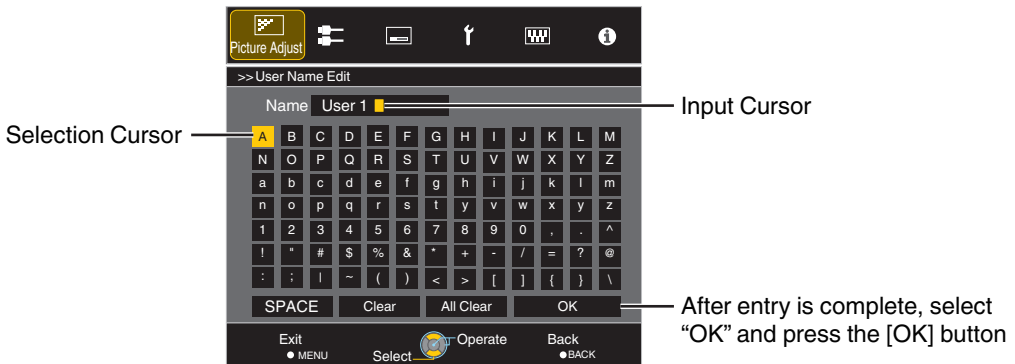
Adjust/Set

Input Cursor

Selection Cursor

After entry is complete, select
"OK" and press the [OK] button

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Color Profile

By setting the "Color Profile" (color space information) according to the "Picture Mode", you can fine-tune the image quality according to the movie you are viewing.

➡ "Setting the Color Profile" (P. 31)

Color Management

Each of the colors is adjustable according to the user's preference.

➡ "Adjusting to the Preferred Color (Color Management)" (P. 33)

Color Temp.

For setting the color temperature of the video image.

• When "Picture Mode" is set to "THX" and when "Color Profile" is set to "x.v.Color", the setting is fixed at 6500K.

Preset

Setting	Description
Xenon 1 to Xenon 3 **X9000** **X7000** * Selectable when "Picture Mode" is set to "Film" or "Cinema".	Color temperature that reproduces the characteristics of a xenon lamp used in cinemas. • Xenon 1: A light source color that is emitted by a film projector • Xenon 2: A light source color emitted by a projector used for digital cinema • Xenon 3: A light source color that looks cooler than that of "Xenon 2"
5500K, 6500K, 7500K, 9300K	Increasing the value enhances the blue tone of the video image, while decreasing the value enhances the red tone.
Custom 1 to Custom 3	The color temperature of video images can be adjusted manually and saved as one of the three customized settings.
High Bright	Color temperature that gives priority to brightness.

Custom

Setting	Description
Gain Red, Gain Green, Gain Blue	Adjusts each color in the bright parts of the video image. • Setting range: -255 (reduces the red/green/blue tone) to 0 (enhances the red/green/blue tone)
Offset Red, Offset Green, Offset Blue	Adjusts each color in the dark areas of the video image. • Setting range: -50 (reduces the red/green/blue tone) to +50 (enhances the red/green/blue tone)

Gamma

You can adjust the output value of the projected image with respect to the video signal input.

➡ "Adjusting the Output Value of the Projected Image (Gamma)" (P. 36)

Picture Tone

Adjusts the overall brightness automatically for a well-balanced result without compromising the gradation of the image.

➡ "Fine-tuning to the Preferred Gamma Setting" (P. 38)

Dark Level/Bright Level

You can adjust the image quality to produce a sharp contrast in the brightness.

➡ "Fine-tuning to the Preferred Gamma Setting" (P. 38)

Adjust/Set

MPC Level

You can enjoy natural, expressive 4K images with a stronger sense of depth.

➡ "Adjusting Movies for Increased Expressiveness (Multiple Pixel Control)" (P. 34)

4K e-shift

Switches the display resolution.

• Setting values: On (4K), Off (2K)

Original Resolution

For selecting a resolution for the content you are viewing.

• Setting values: Auto, 4K and 1080p

* The default "Original Resolution" setting is "Auto", which switches the resolution automatically according to the type of signal input.

Enhance

For adjusting the high-frequency areas. Increasing the value enhances the definition for a sharper image quality.

• Setting range: 0 to 10

* In the case of 4K 50/60p and other input signals, the respective setting values are saved.

Dynamic Contrast

For adjusting the medium-frequency areas. Increasing the value enhances the contrast for a more dynamic image quality.

• Setting range: 0 to 10

Smoothing

For adjusting the low-frequency areas. Increasing the value enhances the blurriness of the image for a softer effect.

• Setting range: 0 to 10

NR

Prevents noise from becoming too pronounced.

• Setting range: 0 (weak) to 10 (strong)

• "4K e-shift" is fixed at "On" during 4K signal input.

• "Original Resolution" is fixed at "Auto" during 4K 50/60p signal input. "Dynamic Contrast", "Smoothing" and "NR" are grayed out.

• "4K e-shift" is fixed at "Off" during 3D signal input.

Blur Reduction

For reducing the after-image, which occurs in a fast-moving scene.

➡ "Reducing the After-image of Fast-moving Images (Blur Reduction)" (P. 39)

Brightness

For adjusting the brightness of the video image.

• Setting range: -50 (darker) to +50 (brighter)

* Adjustment cannot be made when "Color Profile" is set to "x.v.Color".

Contrast

For adjusting the difference in brightness to produce an image with contrast.

• Setting range: -50 (little difference in brightness) to +50 (large difference in brightness)

* Adjustment cannot be made when "Color Profile" is set to "x.v.Color".

Adjust/Set

Color

For adjusting the color density of the video image.

- Setting range: -50 (lighter) to +50 (deeper)
- * Adjustment cannot be made when "Color Profile" is set to "x.v.Color".

Tint

For adjusting the hue of the video image.

- Setting range: -50 (reddish) to +50 (greenish)
- * Adjustment cannot be made when "Color Profile" is set to "x.v.Color".

Input Signal

Input Level

For setting the dynamic range (gradation) of the video input.
If the image is not displayed properly even after selecting "Auto", select an appropriate setting.

- If the dynamic range is not appropriate, the bright areas become overexposed, and the dark areas become underexposed.

Setting	Description
Auto	Sets the input signal level automatically.
Standard	Select this setting if you are inputting video signals (dynamic range: 16 - 235).
Enhanced	Select this setting if you are inputting PC signals (dynamic range: 0 - 255).
Super White	Select this setting when inputting Super White-compatible device signals (dynamic range: 16 - 255).

* When Picture Mode is set to "THX", the setting is fixed at "Super White".

Color Space

For setting the color space of the input signal.
If the image is not displayed properly even after selecting "Auto", select an appropriate setting.

Setting	Description
Auto	Detects "YCbCr (4:4:4)", "YCbCr (4:2:2)", and "RGB" automatically.
YCbCr (4:4:4)	Select this setting when inputting YCbCr (4:4:4) video signals.
YCbCr (4:2:2)	Select this setting when inputting YCbCr (4:2:2) video signals.
RGB	Select this setting when inputting RGB video signals.

Aspect

The screen size of the projected image can be adjusted optimally according to the original screen size (aspect) that has been input.

➡ "Adjusting the Screen Size (Aspect)" (P. 27)

Progressive

For setting the interpolation method for the interlaced signals. If the image outline is unnatural, set this item to "Off".

Setting	Description
Auto	Performs interpolation by automatically detecting whether the interlaced signals are converted from 24p video images, such as those in film movies, or interlaced signals of video materials.
Off	Interpolates video images as interlaced signals of video materials, etc.

Mask

For hiding the peripheral area of the image with a mask (black strip).

■ Off

Setting	Description
Off	Not masked.
Custom 1 to Custom 3	Masks about 0 to 220 pixels of the four sides of the image. * The pixel count is 1920 pixels in the horizontal direction and 1080 pixels in the vertical direction.

■ On

Mask: black strip around the periphery

3D Setting

For setting 3D movies for viewing.

➡ "Viewing 3D Movies" (P. 28)

Picture Position (Horiz./Vert.)

Adjust the position if the edges of the image are partially missing due to the timing of horizontal and vertical synchronization signals.

* Adjustment cannot be made during 4K, 3D and 1080i signal input.

HDMI2 EDID

For changing the EDID mode of the [HDMI 2] terminal. Set to "A" under normal condition.

Images with resolution 1920x1080 or lower may not be displayed when some old devices are used.
In that case, connect to the [HDMI 2] terminal and set "HDMI2 EDID" to "B".

* EDID (Extended Display Identification Data) refers to the information, such as supported resolutions, exchanged between devices.

Installation

Lens Control

Focus / Zoom / Shift

For adjusting the lens according to the projection position
➡ "Adjusting the Lens According to the Projection Position" (P. 23)

Image Pattern

Setting	Description
On	Displays the lens adjustment pattern.
Off	Displays external signals, and does not display the lens adjustment pattern.

Lock

Setting	Description
On	Locks the lens to prevent any erroneous operation on the adjustments.
	• Operation of the lens control feature is disabled when "On" is selected.
Off	Does not lock the lens.

Lens Memory Select / Lens Memory Save / Lens Memory Name Edit

The Focus, Zoom, and Shift settings can be saved or retrieved, so you can switch easily to a different aspect ratio (screen size) according to the image.
➡ "Saving and Retrieving Adjustment Settings" (P. 24)

Lens Center

Returns the lens position to the center.

Lens Cover X9000   X7000

Setting	Description
Auto	Opens/closes the lens cover according to the power on/off operation.
Open	Leaves the lens cover open regardless of the power on/off mode.

Adjust/Set

Adjust

For setting the adjustment feature to On (Memory 1 or Memory 2) or Off.

* You can save the settings separately when an anamorphic lens is used and when you are using the projector with a screen.

Adjust Area

Setting	Description
Whole	Adjusts the entire image.
Zone	Enables fine adjustment of each zone by dividing the screen into 11 vertical x 11 horizontal zones.

Adjust Color

For selecting the color to adjust ("Red" or "Blue").

Adjust Pattern Color

For setting the adjustment pattern color to "White" or "Yellow / Cyan".

Adjust (Pixel)

When "Adjust Area" is set to "Whole", adjustment can be made by moving in units of one pixel on the screen of the color selected in "Adjust Color".
➡ "Whole Adjust (Pixel) Operation Procedure" (P. 51)

* Adjustment cannot be made when "Adjust Area" is set to "Zone".

Setting	Description
H (Horizontal)	Setting range: -2 (moves red/blue to the left) to +2 (moves red/blue to the right)
V (Vertical)	Setting range: -2 (moves red/blue downward) to +2 (moves red/blue upward)

Adjust (Fine)

When "Adjust Area" is set to "Whole", adjustment can be made by moving in units of 1/16 pixel on the screen of the color selected in "Adjust Color".
➡ "Whole Adjust (Fine) Operation Procedure" (P. 52)

When "Adjust Area" is set to "Zone", the screen is divided into 11 vertical x 11 horizontal zones, and fine adjustment of each zone is possible.
➡ "Zone Adjust Operation Procedure" (P. 53)

Setting	Description
H (Horizontal)	Setting range: -31 (moves red/blue to the left) to +31 (moves red/blue to the right)
V (Vertical)	Setting range: -31 (moves red/blue downward) to +31 (moves red/blue upward)

Reset

Restores all pixel adjustment data to the factory default.

Adjust/Set

Installation Style

For setting to "Front", "Ceiling Mount (F)", "Rear", or "Ceiling Mount (R)" according to the installation status of the projector.

- "Front" or "Ceiling Mount (F)" is set when projector is installed in the front with respect to the screen.
- "Rear" or "Ceiling Mount (R)" is set when projector is installed in the rear with respect to the screen.

Keystone

For correcting any keystone distortion that occurs when the projector is installed at an angle with respect to the screen.

- Vertical setting range: -16 to +16
- *1   Increasing the value changes the aspect slightly.
- *2   Adjustment cannot be made during 4K 50/60p signal input.

Anamorphic

Configure this setting when an anamorphic lens is used.

Setting	Description
A	Projects the 2.35:1 image with it stretched in the vertical direction only.
B	Projects the 16:9 image with it compressed in the horizontal direction only.
Off	Projects the 2.35:1 image without any changes.

High Altitude Mode

Set to "On" when using the projector at a location of low atmospheric pressure (higher than 900 m above sea level).

Screen Adjust

By selecting the optimal correction mode according to the characteristics of the screen in use, corrections can be performed to reproduce natural images with balanced colors.
  ➡ "Setting Screen Correction" (P. 26)

Whole Adjust (Pixel) Operation Procedure

For making general adjustments to slight color fringing in the horizontal/vertical directions of the video image.

① Set "Adjust Area" to "Whole"

② Select "Adjust Color" and "Adjust Pattern Color"

③ Select "Adjust (Pixel)", and press the [OK] button

- The selected adjustment pattern and Adjustment (Pixel) window are displayed.
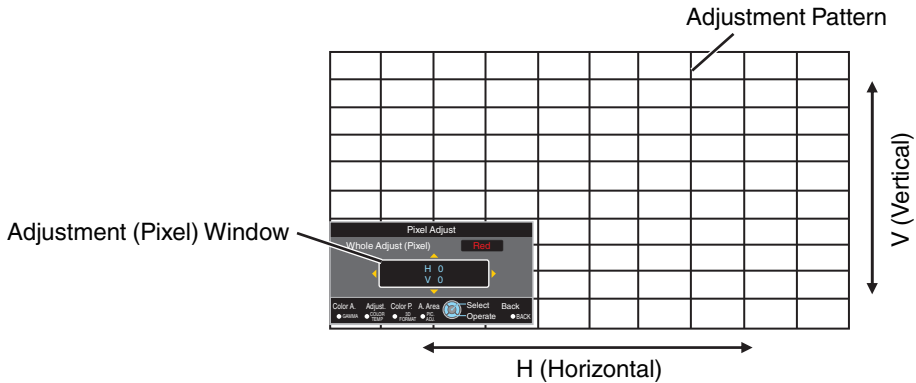
Adjustment Pattern

V (Vertical)

Adjustment (Pixel) Window

H (Horizontal)

④ Press the [OK] button to enter the Adjustment mode

⑤ Use the [▲▼◀▶] keys to move and adjust the pixels in the vertical and horizontal directions across the entire screen.

- The adjustment setting appears at the center of the Adjustment (Pixel) window.

Pixel Adjustment Setting

Color for Adjustment

Remote Control Operation Guide
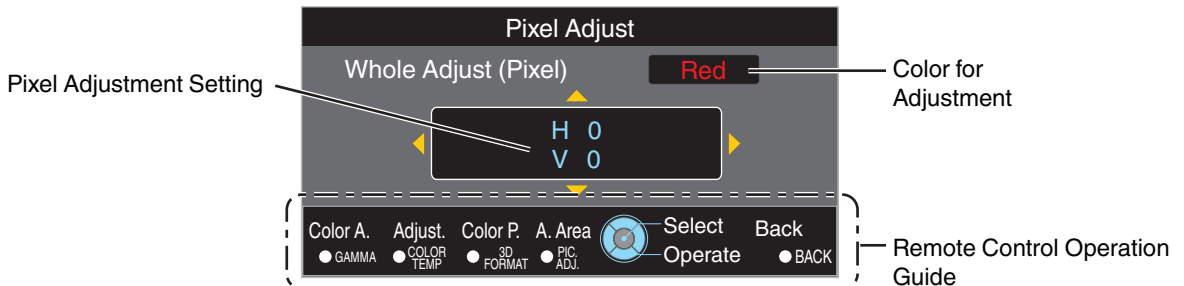
⑥ After adjustment is complete, press the [BACK] button to exit the Adjustment mode

Remote Control Operation Guide

Button Name	Description of Operation
[GAMMA]	Changes "Adjust Color".
[COLOR TEMP.]	Switches between "Adjust (Pixel)" and "Adjust (Fine)".
	• Switches to "Adjust (Pixel)" when "Adjust Area" is set to "Zone".
[3D FORMAT]	Changes "Adjust Pattern Color".
[PIC ADJ.]	Switches "Adjust Area".
	• A zone cursor appears on the adjustment pattern when the "Zone" setting is selected.

Adjust/Set

Whole Adjust (Fine) Operation Procedure

For making general adjustments on the misalignment of the entire screen using "Adjust (Pixel)", followed by making fine adjustments.

① Set "Adjust Area" to "Whole"

② Select "Adjust Color" and "Adjust Pattern Color"

③ Select Adjust (Fine), and press the [OK] button

- The selected adjustment pattern and Fine window are displayed.
- The adjustable range may be smaller depending on the pixels being adjusted on the entire screen.

Adjustment Pattern

V (Vertical)

Fine Window
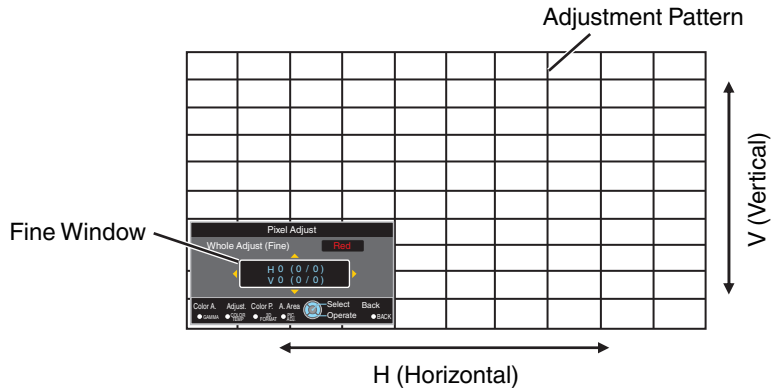
H (Horizontal)

④ Press the [OK] button to enter the Adjustment mode

⑤ Use the [▲▼◀▶] keys to move and adjust the pixels in the vertical and horizontal directions across the entire screen.

- The adjustment setting appears at the center of the Fine window.

Pixel Adjustment Setting

Pixel Adjust

Whole Adjust (Fine)　　　Red — Color for Adjustment

H 0 (0 / 0)
V 0 (0 / 0)

Color A. ● GAMMA　Adjust. ● COLOR TEMP　Color P. ● 3D FORMAT　A. Area ● PIC. ADJ.　Select / Operate　Back ● BACK

Remote Control Operation Guide

Adjustment Setting

H −20 (−20 / −20)
V 　5 (　5 / 　5)

Indicates the maximum and minimum misalignment value of the entire screen.(Max. / Min.)
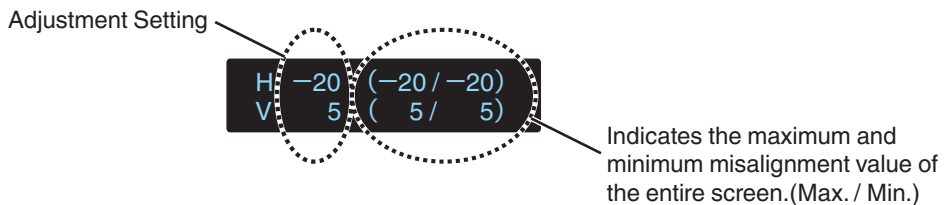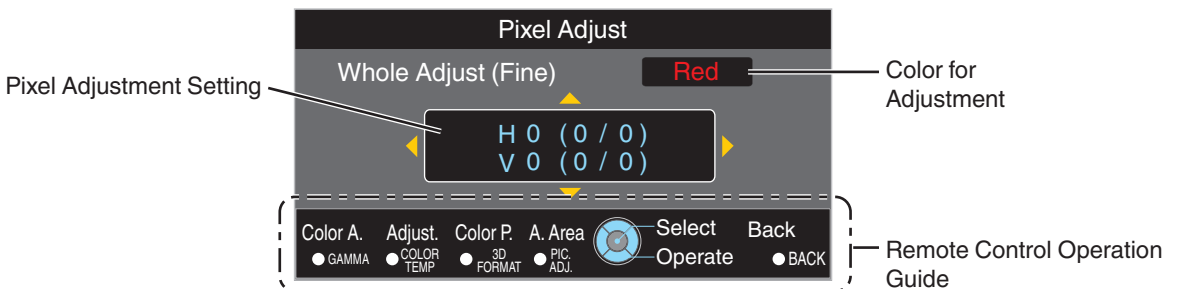
⑥ After adjustment is complete, press the [BACK] button to exit the Adjustment mode

✎ MEMO

- If both the maximum overall screen misalignment of H (horizontal direction) and V (vertical direction) are "31", you cannot select a value that is larger than the displayed setting even when the adjustment setting is lower than the maximum value.
- If the minimum overall screen misalignment is "-31", you cannot select a value that is smaller than the displayed setting even when the adjustment setting is higher than the minimum value.

Adjust/Set

Zone Adjust Operation Procedure

For fine-tuning misalignments on a part of the screen after adjusting the overall screen misalignment using "Adjust (Pixel)" and "Adjust (Fine)".

 • The screen can be divided vertically and horizontally into 10 sections for partial adjustments to be made.

① Set "Adjust Area" to "Zone"

② Select "Adjust Color" and "Adjust Pattern Color"

③ Select Adjust (Fine), and press the [OK] button

 • The selected adjustment pattern and Zone Adjustment window are displayed.
 • The adjustable range may be smaller depending on the pixels being adjusted on the entire screen.

Adjustment Pattern

Zone Cursor

Zone Adjustment Window

V (Vertical)
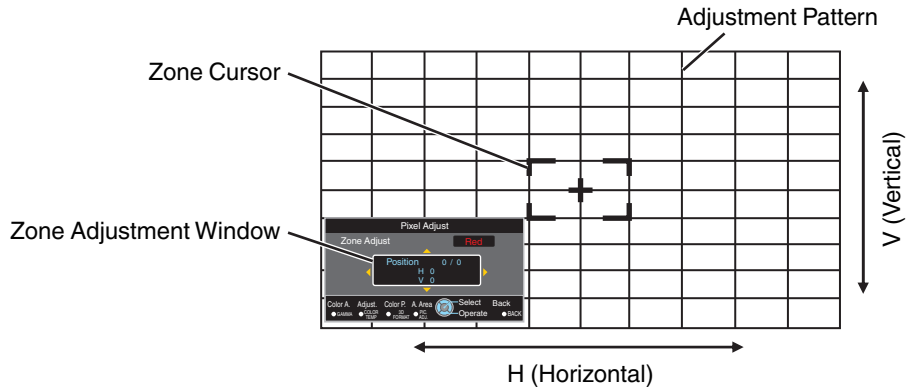
H (Horizontal)

④ Press the [▲▼◀▶] keys to move the cursor to the point to be adjusted

⑤ Press the [OK] button to enter the Adjustment mode

⑥ Use the [▲▼◀▶] keys to move and adjust the pixels in the vertical and horizontal directions across the entire screen.

 • The adjustment setting appears at the center of the Zone Adjustment window.

Pixel Adjustment Setting

Pixel Adjust

Zone Adjust   Red ← Color for Adjustment

Position   0 / 0
H 0
V 0

Color A. ● GAMMA   Adjust. ● COLOR TEMP   Color P. ● 3D FORMAT   A. Area ● PIC. ADJ.   Select Operate   Back ● BACK → Remote Control Operation Guide

Cursor Position

Position   8 / 5
H −31
V 7   ← Adjustment Setting
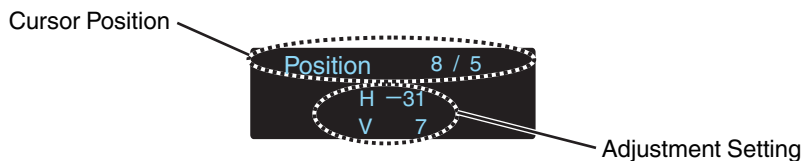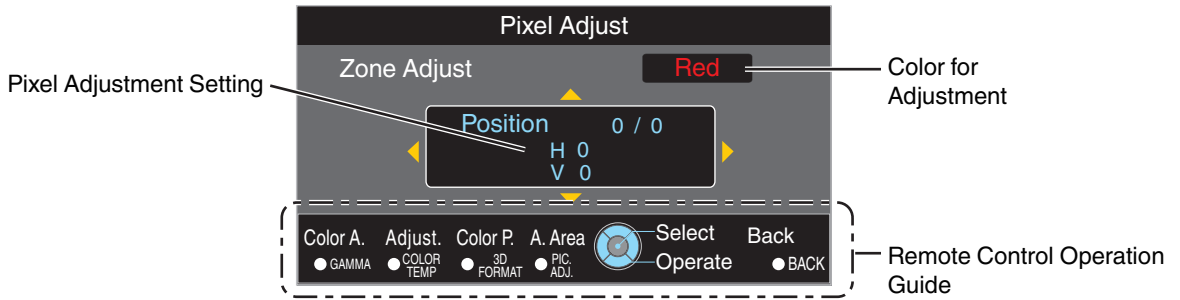
⑦ After adjustment is complete, press the [BACK] button to exit the Adjustment mode

Adjust/Set

Display Setup

Back Color

For setting the color of the background to "Blue" or "Black" when there is no signal input.

Menu Position

For setting the display position of the menu.

Signal Display

Setting	Description
On	Shows the input terminal for 5 seconds when input is switched.
Off	Not displayed.

Logo

Setting	Description
On	Displays the "D-ILA" logo for 5 seconds during startup.
Off	Not displayed.

Language

For setting the display language to "日本語", "English", "Deutsch", "Español", "Italiano", "Français", "Português", "Nederlands", "Svenska", "Norsk", "Русский", "中文", or "繁體中文".

Function

Trigger

For setting whether to supply a 12 V output to devices such as an external screen equipped with a trigger function.

Setting	Description
Off	No output.
On (Power)	Outputs control signals (12 V) from the trigger terminal when the power is turned on. • When the power is turned off, the control signal output is stopped when the cooling function starts.
On (Anamo)	Outputs control signals when the "Anamorphic" setting is switched from "Off" to "A" or "B".

Off Timer

For setting the duration before the power turns off automatically when the projector is not operated.

• Setting values: "1 Hour", "2 Hours", "3 Hours" and "4 Hours"

ECO Mode

Setting	Description
On	Enables "ECO Mode" to minimize power consumption in the Standby mode.
	• RS-232C / LAN communication cannot be used in the Standby mode.
	• If there is no signal transmission and operation for 20 minutes while an image is projected, the power management switches the equipment automatically into standby mode.
Off	Select this option to control via RS-232C / LAN communication in the Standby mode or if Control4 is to be used.

Network

Specify the settings below during external control such as from a PC or smartphone.

Setting		Description
DHCP Client	On	Obtains the IP address automatically from the DHCP server inside the connected network.
	Off	For configuring the network settings manually.
IP Address		For configuring the IP address.
Subnet Mask		For configuring the subnet mask.
Default Gateway		For configuring the default gateway.
MAC Address		Displays the MAC address of the unit.
Set		Applies the network settings.
Control4		Set to "On" to allow Control4 SDDP to detect this unit. When this unit is not connected to an environment under the control of the controller and Control4 SDDP from the Control4 Corporation, set this to "Off".

✎ Glossary of Network Terminology

DHCP	:	Abbreviation for Dynamic Host Configuration Protocol. This is a protocol for the network to assign an IP address automatically to the connected device.
IP Address	:	Numeric characters for identifying the device that is connected to the network.
Subnet Mask	:	Numeric characters that define the bit count used for the network address that is a segment of the IP address.
Default Gateway	:	Server for communicating beyond the network that is divided by the subnet mask.
MAC Address	:	Abbreviation for Media Access Control address. This is a number that is unique to each network adapter. Each of the network adapters is assigned with a unique MAC address.

Remote Code

For changing the remote control code.

- You need to configure the remote control according to the settings of this unit.
  On the remote control unit, press the [MENU] and [BACK] buttons at the same time for three seconds or longer to switch the code.

  - The backlight of the remote control blinks 3 times: change the remote control code to "A"

  - The backlight of the remote control blinks 2 times: change the remote control code to "B"

Setting	Description
A	Change the remote control code from "B" to "A".
B	Change the remote control code from "A" to "B".

Lamp Reset

For resetting the lamp time to "0".
➡ "Resetting the Lamp Time" (P. 59)

Information

Setting	Description
Input	Displays video input terminal.
Source (Displayed only during video signal input)	Displays the input source.
Resolution (Displayed only during PC signal input)	Displays the image resolution.
H Frequency (Displayed only during PC signal input)	Displays the horizontal frequency.
V Frequency (Displayed only during PC signal input)	Displays the vertical frequency.
Deep Color	Displays the color bit depth of the input video signal. • Not displayed when YCbCr (4:2:2) is input. • Displayed when Deep Color information is received from the source device.
Color Space	Displays the color space of the input signal.
Lamp Time	Displays the lamp time.
Soft Ver.	Displays the firmware version.
PS Ver.	Displays the version of image quality data.

Adjust/Set

Replacing the Lamp

The lamp is a consumable item. If the image appears dark or the lamp goes out, replace the lamp unit.

• When the lamp replacement time approaches, the user is notified with a message displayed on the screen and by the indicator. (P. 74)

## Lamp Replacement Procedure

📢 CAUTION

• Do not insert your hands into the lamp compartment. This could cause significant deterioration in the performance of the equipment, or lead to injury and electric shock.

• Do not replace the lamp immediately after the unit has been used. Allow a cooling period of at least one hour before replacement. The temperature of the lamp is still high, and may cause burn injuries.

• Do not subject the lamp unit to shock. Doing so may cause lamp blowout.

• Do not use a flammable air duster to clean the internal parts of the unit. Doing so may cause fire.

• Use only genuine replacement parts for the lamp unit. Also, never attempt to reuse an old lamp unit. This may cause the unit to malfunction.

• Do not touch the surface of a new lamp. Doing so may shorten the lamp life and cause lamp blowout.

• When replacing the lamp, be careful not to injure yourself as the lamp may be broken.

• When replacing the lamp of a projector suspended from the ceiling, work at height is required. This is a dangerous operation. Please consult our service center.

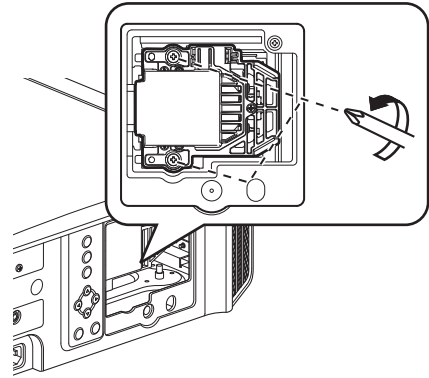**1** Pull out the power plug from the power outlet

2 Remove the lamp cover

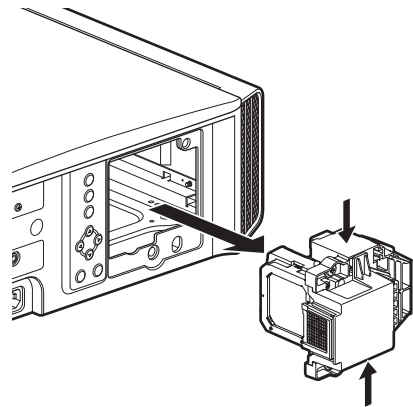• Remove the screw of the lamp cover with a ⊕ screwdriver.
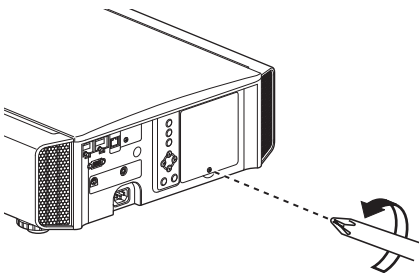
3 Loosen the screws of the lamp unit
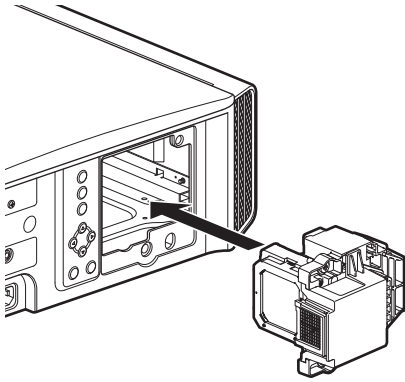
• Loosen the screws with a ⊕ screwdriver.

4 Pull out the lamp unit

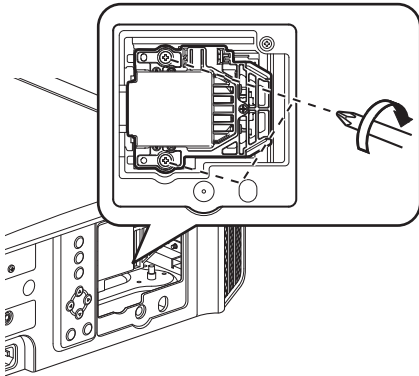• Hold the lamp unit at the dents at the top and bottom, and pull it out.

Maintenance
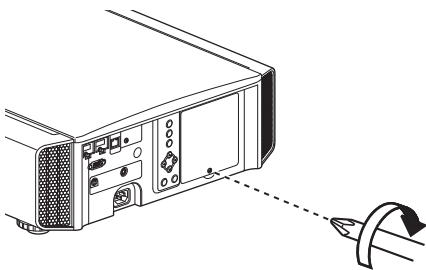
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5 Install the new lamp unit

6 Tighten the screws of the new lamp unit

- Tighten the screws with a ⊕ screwdriver.

7 Attach the lamp cover

- Insert the two tabs at the top and bottom of the lamp cover into the unit.
- Tighten the screws with a ⊕ screwdriver.

✎ MEMO

Usable lamp life

- When the lamp is used with "Lamp Power" set to "Low", the lamp life on this unit is approximately 4500 hours. This is the average usable time and not a guaranteed value.
- The lamp life may not reach 4500 hours depending on the operating conditions.
- When the lamp has reached the end of its usable life, deterioration progresses rapidly.
- When the video image appears dark, when the color tone looks unnatural, or when the image flickers, replace the lamp unit with a new one promptly.

Purchasing a lamp unit

Please consult your authorized dealer or nearby service center.

- Lamp unit
  Product no.: PK-L2615U
- * Not suitable for household room illumination.
- * Lamps with a different product number or those for other projector models cannot be used.

Information about the lamp

An ultra-high pressure mercury lamp with a high internal pressure is used in the projector.

Due to the characteristics of this lamp, it may blow out with a loud noise or go out when it is subject to shock or after using for a prolonged period of time (the time before the lamp blows out or goes out varies considerably with each lamp as well as the operating conditions).

After replacing the lamp

- Do not place the removed lamp unit at a place that is within reach by children or anywhere near inflammable items.
- Dispose used lamp units in the same way as fluorescent lamps. Follow the regulations of your local community for disposal.

Maintenance

Resetting the Lamp Time

Reset the lamp time when you have replaced the lamp. It provides an estimated timing for lamp replacement

Resetting the lamp time from the menu screen

1 Press the [MENU] button to display the menu

2 Select "Function"→"Lamp Reset" from the menu
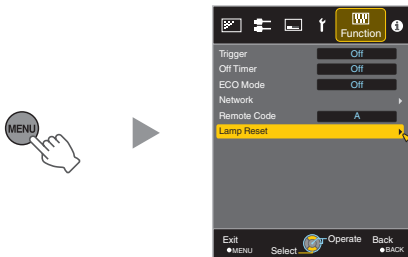

3 On the "Reset Lamp Time?" screen, select "Yes" and press the [OK] button

• The lamp time is reset to zero.
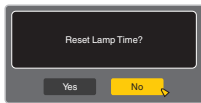
Resetting the lamp time using the remote control

1 Insert the power plug into the power outlet

2 Make sure that you operate the remote control in the Standby mode (the power plug is inserted into the outlet, but the power is not turned on)

• Press in the order as shown.

• Make sure that you press a button within two seconds after the last button is pressed. Press the last button for at least two seconds.
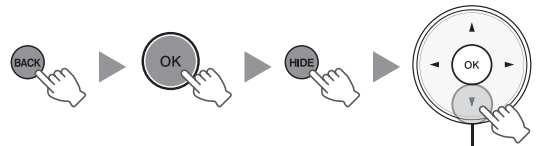
Press for 2 seconds or longer

• The "LAMP" indicator and "STANDBY/ON" indicator blink alternately for three seconds. After that, the unit switches to the Standby mode.

✎ MEMO

• Reset the lamp time only when you have replaced the lamp.
If the lamp time is reset while a lamp is in use, you may lose track of the timing for replacing the lamp. Doing so may result in using the lamp beyond the estimated limit, thereby causing lamp blowout.

Maintaining the Cabinet and Remote Control

• Gently wipe off dirt on the cabinet with a soft cloth.

• If it is extremely dirty, wet a cloth in water, wring dry and use it to wipe off the dirt, followed by wiping again with a dry cloth.

• Pay attention to the following as the cabinet may deteriorate in condition or the paint may come off.

  • Do not wipe with thinner or benzine

  • Do not allow prolonged contact with rubber or plastic products

 • Do not spray volatile chemicals such as insecticide

Maintenance

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Cleaning and Replacing the Filter

Clean the filter regularly Otherwise, the air intake efficiency may deteriorate, and malfunction may occur.

✄ CAUTION

- Make sure that you pull out the power plug from the outlet before cleaning or replacing the filter.
- Before turning this unit upside down and placing it on the floor or a table, make sure that you lay a soft rag in advance to prevent the projector from being scratched.

1 Remove the inner filter

Pull out while pushing down the tab
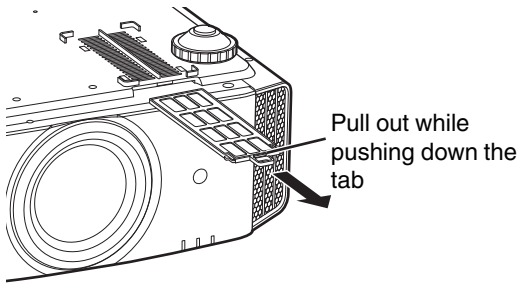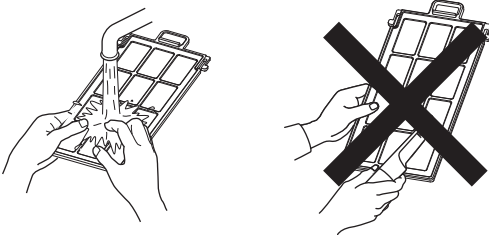
2 Clean the filter

- Wash the filter with water and dry it in a shaded area.
- If the filter is extremely dirty, clean it with a neutral detergent. Put on rubber gloves when using a neutral detergent.
- After washing the filter with water, make sure that it is completely dry before reinstalling. Otherwise, electric shock or malfunction may occur.
- Do not clean the filter with a vacuum cleaner or air duster. The filter is soft and may be easily damaged.

3 Reinstall the inner filter

Check that the left and right tabs are locked onto the unit
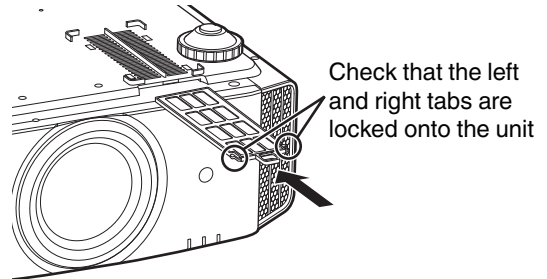
✎ If the filter is damaged or too dirty to be cleaned

- Replace with a new filter. A dirty filter will dirty the internal parts of the unit and cause shadows to appear on the video image.
- To purchase a new filter or when there is dirt in the internal parts of the unit, consult your authorized dealer or nearby service center.
- Inner filter (exchangeable filter)
  Product no.: PC010661199

Troubleshooting

Before sending the unit to your authorized dealer for repair, please check the following points.

The following symptoms are not malfunctions.

You do not need to worry about the following symptoms if there is no abnormality on the screen.

- A part of the top or front surface of the unit is hot.
- A creaking sound is heard from the unit.
- An operating sound is heard from the inside of the unit.
- Color smear occurs on some screens.

This unit is a digital device. This unit may become unable to operate normally due to external static or noise. Perform the following operations when such malfunctions occur.

① If the unit is in the Standby mode, pull out the power plug, followed by inserting it again

② Press the ⏻/I [STANDBY/ON] button on the main unit to turn on the power again

When "High Altitude Mode" is set to "On", and "Lamp Power" is set to "High" during 3D mode, the fan will make louder noise than usual since it is designed to run at high speed in 3D mode.

Power is not supplied

Check	Action	Refer to
Is the power cord disconnected?	Insert the power cord (plug) firmly.	P. 20
Is the lamp cover properly shut?	If the unit is in the Standby mode, remove the power plug and close the lamp cover properly. After that, insert the plug again.	P. 58
Is the lamp in the Cool-down mode?	After exiting the Cool-down mode, turn on the power again.	P. 22

Power shuts down automatically

Check	Action	Refer to
Has "ECO Mode" been configured?	Set "ECO Mode" to "Off".	P. 55
Has "Off Timer" been configured?	Set "Off Timer" to "Off".	P. 54
Are the air inlets and exhaust vent blocked?	Leave proper clearance when installing the unit.	P. 10, 11 P. 15
Is the filter dirty?	Clean the filter.	P. 60

Video image does not appear

Check	Action	Refer to
Is the correct external input selected?	Select the correct external input terminal.	P. 21
Is the power of the AV device turned on?	Turn on the power of the AV device and play the video.	P. 18
Is the AV device properly connected?	Connect the AV device properly.	P. 18
Are the correct signals being output from the AV device?	Set the AV device properly.	P. 18
Is the cable in use an HDMI-certified cable?	Use an HDMI-certified high-speed cable. Also, use as short a cable as possible.	P. 18
Is an intermediate device (AV amplifier, divider, etc.) in use?	Change the sequence of turning on the source device, intermediate device and the projector. And after turning on each device, ensure that the signal output is stable before turning on the next device.	P. 18
Is an old source device in use?	Change the resolution setting of the source device. For details on how to change the setting, please refer to the instruction manual of the source device.	P. 47

3D images do not appear

Check	Action	Refer to
Do you see two images displayed side by side?	Set "3D Format" to "Side by Side" Video images in the "Side by Side" format may not be recognized automatically in the case of 3D video images.	P. 29
Is an intermediate device (AV amplifier, divider, etc.) in use?	Connect the source device to the projector directly, and check whether there is any improvement in the condition. If the condition improves, it is likely that this is not caused by malfunction of the projector.	P. 18
Is the cable in use an HDMI-certified cable?	Use an HDMI-certified high-speed cable. Also, use as short a cable as possible.	P. 18
Is the power of the 3D GLASSES turned on?	If you are using the PK-AG2 or PK-AG33D GLASSES, turn on the power manually.	Check the instruction manual of the 3D GLASSES and 3D SYNCHRO EMITTER.
Are the 3D GLASSES charged?	Check whether the PK-AG1 battery of the 3D GLASSES has run out, and whether PK-AG2 and PK-AG3 are charged.	
Are the 3D GLASSES and 3D SYNCHRO EMITTER too far away from each other?	Position them at an appropriate distance.	
Is the 3D GLASSES and 3D SYNCHRO EMITTER combination correct?	Check the model name of 3D GLASSES and 3D SYNCHRO EMITTER, and use the correct combination.	P. 9

3D video image looks unnatural

Check	Action	Refer to
Are there overlapping video images?	If there are overlapping video images partially, this is due to the crosstalk phenomenon. In this case, adjust "Crosstalk Cancel" accordingly.	P. 29
	If there are overlapping video images partially, this is due to the crosstalk phenomenon. This phenomenon often occurs when there are drastic changes in the brightness. In this case, set Lamp Power to "High"	P. 43

Video image looks unnatural

Colors are unnatural

Check	Action	Refer to
Is the color space of the input signal correctly set?	The color may turn out unnatural when the input signal is different from that in the projector setting. Set the "Color Space" for "Input Signal" correctly.	P. 46
Is the image correctly adjusted?	Adjust "Color" and "Tint" accordingly.	P. 46
Is the AV device properly connected?	Connect the AV device properly.	P. 18

* The video image may appear slightly reddish immediately after starting up. This is not a malfunction.

Video image is fuzzy

Check	Action	Refer to
Is the focus correctly adjusted?	Adjust the focus.	P. 23
Is the unit placed too near or too far away from the screen?	Set the unit at a correct distance from the screen.	P. 71

Video image flickers

Check	Action	Refer to
Do you see horizontally-extended, overlapping video images?	In this case, set "3D Format" to "Auto"	P. 29
Are you viewing the video images under a fluorescent light?	This is caused by interference between the 3D glasses with the flickers of the fluorescent light. View with the fluorescent light turned off.	—
Is "Lens Aperture" set to "Auto 1" or "Auto 2"?	Set "Lens Aperture" to "Manual"	P. 40

* Flickers may sometimes occur upon starting up the projector unit, or immediately after the projector is changed from floor-standing to ceiling mounted. This is attributable to the lamp or drive mechanism, and is likely not caused by malfunction of the projector.

Projected image is dark

Check	Action	Refer to
Is the lamp near exhaustion?	Check the lamp time in the "Information" menu. Prepare a new lamp unit or replace as soon as possible when the lamp is near exhaustion.	P. 56 P. 57
Is the aperture closed?	Set "Lens Aperture" to "Auto 1" or "Auto 2", or set to "Manual" and open up the aperture manually.	P. 40
Is "Lamp Power" set to "Low"?	Set "Lamp Power" to "High"	P. 43

Video image appears horizontally (vertically) extended

Check	Action	Refer to
Is "3D Format" set to "Side by Side"?	Set "3D Format" to "Auto"	P. 29
Is "Anamorphic" set to a setting other than "Off"?	Set "Anamorphic" to "Off"	P. 50

Striped patterns appear on the screen

Check	Action	Refer to
Does the fabric of the screen have a regular pattern?	Interference fringes may sometimes occur between the fabric pattern and the pixels. Please consult the authorized dealer.	—

Video images are missing

Check	Action	Refer to
Has screen mask been configured?	Set "Mask" to "Off".	P. 47
Is the display position misaligned?	Alter the "Picture Position" value so that the entire image appears on the screen.	P. 47

Remote control does not work

Check	Action	Refer to
Are the batteries correctly loaded?	Match the polarities ($\oplus$ $\ominus$) correctly when loading the batteries.	P. 14
Are the batteries exhausted?	Replace with new batteries.	P. 14
Is there an obstructing object between the remote control and remote sensor?	Remove any obstructing object.	P. 14
Is the remote control held too far away from the unit?	Hold the remote control closer to the sensor during use.	P. 14
Are the IR (infrared) 3D GLASSES and 3D SYNCHRO EMITTER in use?	As there is a possibility of signal interference, when you are using the IR (infrared) 3D GLASSES together with the 3D SYNCHRO EMITTER, try adjusting the orientation of the 3D SYNCHRO EMITTER.	P. 28

The lens cover does not close X9000 X7000

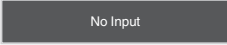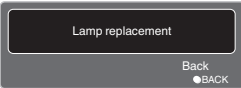| Check	Action	Refer to
Is "Lens Cover" set to "Open"?	Set "Lens Cover" under "Lens Control" in the setting menu to "Auto".	P. 48

Noise is heard

Check	Action	Refer to
Is the exhaust vent blocked? Is the unit used near a heater or air-conditioner?	Check the installation condition of the projector. When the surrounding temperature of the projector is high, the fan revolution speed increases to protect the projector unit, hence a louder operating sound.	P. 15
Are you viewing 3D video images?	"Lamp Power" is set automatically to "High" to ease viewing of 3D video images, hence a louder fan operating sound. If you are bothered by the sound, set it to "Low".	P. 43
Is the "Picture Mode" or "Color Profile" changed?	Operating sound is generated by the cinema filter. This is not a malfunction.	—
Did you change the "4K e-shift" setting for "MPC Level"?	Switching sound is generated. This is not a malfunction.	—

There are small black or colored dots on the screen

The D-ILA device is manufactured using high-precision technologies, but there may be some (less than 0.01%) missing pixels or pixels that remain permanently lit. This is not a malfunction.

Troubleshooting

When the following messages appear...

| Message	Description	Action
No Input	• No device is connected to the input terminal. • The input terminal is connected but there is no signal.	Input the video signals.
HDMI-1	A video signal that cannot be used with this unit has been input (The names of input terminals such as "HDMI-1" and "HDMI-2" will be displayed in yellow).	Input video signals that can be used. (P. 73)
Lamp replacement Back ●BACK	Indicates that the lamp needs to be replaced soon. To clear the message, press the [BACK] button on the operation panel of the projector unit or the remote control.	Get ready a new lamp unit and replace as soon as possible. Reset the lamp time after replacing the lamp. (P. 57, 59)

External Control

It is possible to control this unit by connecting it to a PC using an RS-232C cross cable (D-sub 9-pin).
The projector can be controlled by connecting it to a PC through the computer network with a LAN cable for control commands to be sent to the projector.

➡ " Network " (P. 55)

- Please use it after you have gained proper understanding from professional books or consulting the system administrator.

RS-232C Specifications
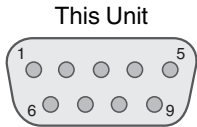
This Unit

Pin No.	Signal	Function	Signal Direction
2	RxD	Receive data	PC → This unit
3	TxD	Transmission data	This unit → PC
5	GND	Signal ground	—
1, 4, 6 - 9	N/C	—	—

- PC refers to the controller, such as a personal computer.

D0 D1 D2 D3 D4 D5 D6 D7
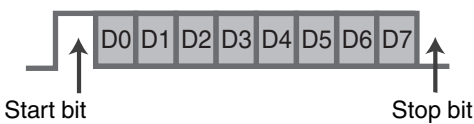
Start bit   Stop bit

Mode	Non-synchronous
Character length	8 bit
Parity	None
Start bit	1
Stop bit	1
Data rate	19200 bps
Data format	Binary

TCP/IP Connection

Before controlling via LAN, it is necessary to establish connection of the TCP layer by a "3-way handshake", followed by sending out "PJREQ" and receiving "PJACK" within five seconds after the projector sends out "PJ_OK" for connection authentication.
If you are unable to complete sending within five seconds, or when "PJ_NG" or "PJNAK" is received, check the operating status of the projector, followed by performing the steps again starting from establishment of a TCP connection.

Within 5 Seconds

Projector

PJ_OK   PJACK

Establishment of TCP Connection
TCP Port No. 20554
3-way Handshake

Projector Control

Controlling PC

PJREQ

Connection Authentication Procedure
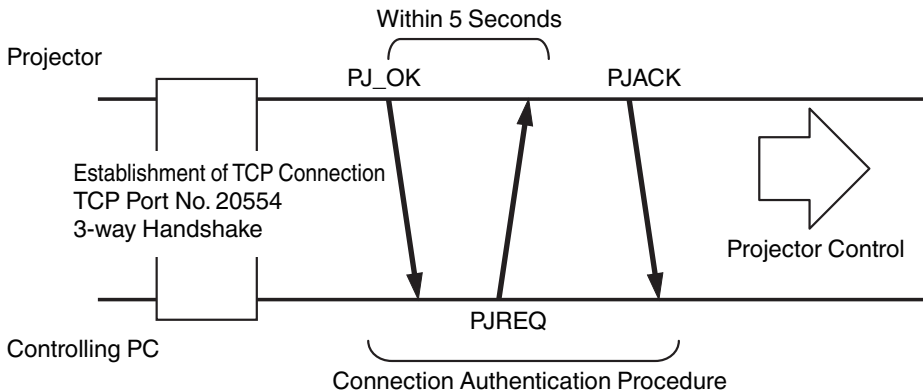
Command Format

The command between this unit and the computer consists of "Header", "Unit ID", "Command", "Data" and "End".

• Header (1 byte), Unit ID (2 bytes), Command (2 bytes), Data (n bytes), End (1 byte)

Header

This binary code indicates the start of communication.

Binary Code	Type	Description
21	Operating command	PC → This unit
3F	Reference command	PC → This unit
40	Response command	This unit → PC
06	ACK	This unit → PC (returns to PC after the command is accepted without error)

Unit ID

This is a code that specifies the unit. The binary code is fixed at "8901".

Command and data

Operating command and data (binary code)

Command	Type	Description
0000	Connection check	Check whether communication is enabled between this unit and the PC during standby.
5057	Power supply	During standby 31: Turns on the power When power is on 30: Turns off the power (Standby mode)
4950	Input	When power is on 36: HDMI 1 37: HDMI 2
5243	Remote control	Sends the same code as the supplied remote control. • "Remote Control Code"P. 68

Reference command and data (binary code)

Command	Type	Description
5057	Power supply	During standby or when power is on 30: Standby mode 31: When power is on 32: In the Cool-down mode 34: When error occurs on this unit
4950	Input	When power is on 36: HDMI 1 37: HDMI 2

End

This code indicates the end of communication. The binary code is fixed at "0A".

Remote Control Code

Binary code is sent during communication.

- The following applies to the case when the remote control code is "A". In the case of "B", add "36" to the beginning of the code.

Remote Control Button Name	Binary Code
STAND BY	37 33 30 36
ON	37 33 30 35
HDMI 1	37 33 37 30
HDMI 2	37 33 37 31
INFO.	37 33 37 34
C.M.D.	37 33 38 41
LENS CONTROL	37 33 33 30
MEMORY MENU	37 33 44 34
MEMORY 1	37 33 44 38
MEMORY 2	37 33 44 39
LENS AP.	37 33 32 30
MPC	37 33 46 30
P.ANALYZER	37 33 35 43
HIDE	37 33 31 44
▲	37 33 30 31
▼	37 33 30 32
▶	37 33 33 34
◀	37 33 33 36
OK	37 33 32 46

Remote Control Button Name	Binary Code
MENU	37 33 32 45
BACK	37 33 30 33
FILM X9000 X7000	37 33 36 39
CINEMA	37 33 36 38
ANIME.	37 33 36 36
THX X9000 X7000	37 33 36 46
USER	37 33 44 37
USER1	37 33 36 43
USER2	37 33 36 44
USER3	37 33 36 45
3D FORMAT	37 33 44 36
ADVANCED MENU	37 33 37 33
GAMMA	37 33 37 35
COLOR TEMP.	37 33 37 36
COLOR PROFILE	37 33 38 38
PIC. ADJ.	37 33 37 32

Communications Example

This section shows the communication examples of RS-232C.

Operating command

Type	Command	Description
Connection check	PC → This unit: 21 89 01 00 00 0A This unit → PC: 06 89 01 00 00 0A	Connection check
Power (On)	PC → This unit: 21 89 01 50 57 31 0A This unit → PC: 06 89 01 50 57 0A	When power is turned on from the Standby mode
Power (Off)	PC → This unit: 21 89 01 50 57 30 0A This unit → PC: 06 89 01 50 57 0A	When power is turned off (Standby mode) from power-on mode
Remote control (MENU)	PC → This unit: 21 89 01 52 43 37 33 32 45 0A This unit → PC: 06 89 01 52 43 0A	When the same operation as pressing the [MENU] button on the remote control is performed

Reference command

Type	Command	Description
Power (On)	PC → This unit: 3F 89 01 50 57 0A This unit → PC: 06 89 01 50 57 0A This unit → PC: 40 89 01 50 57 31 0A	When information on the power-on state is acquired
Input (HDMI 1)	PC → This unit: 3F 89 01 49 50 0A This unit → PC: 06 89 01 49 50 0A This unit → PC: 40 89 01 49 50 36 0A	When information on HDMI 1 input is acquired

Specifications

Product Name		D-ILA Projector
Model Name		DLA-X9000B, DLA-X7000B, DLA-X5000B/W *1, 2
Display Panel/Size		D-ILA device *3, 4 0.7" (1920 x 1080 pixels) x 3 (total no. of pixels: approx. 6.22 million)
Projection Lens		2.0 x power zoom lens (1.4:1 to 2.8:1), motorized zoom and focus
Light-source Lamp		265 W ultra-high pressure mercury lamp [product no.: PK-L2615U] Average lifespan: 4500 hours ("Low" mode)
Screen Size		Approx. 60" to 200" (Aspect ratio of 16:9)
Brightness		1900 lm X9000 1800 lm X7000 1700 lm X5000
Projection Distance		Refer to P. 71.
Input Compatibility Signal		Refer to P. 73.
Display Resolution		3840 x 2160 pixels *5
Input Terminal	HDMI Input	Dual, HDMI 19-pin x 2 (HDCP 2.2-compatible) *6
Output Terminal	Trigger Terminal	1 system, Ø 3.5 mm DC Power Jack ($\ominus$–$\mathbb{C}$–$\oplus$) DC OUT 12 V, 0.1 A
	3D synchro	Dedicated terminal for 3D SYNCHRO EMITTER (1 system, mini-DIN 3-pin)
Control Terminal	RS-232C Terminal	1 system, D-sub 9-pin (male) (external control)
	LAN Terminal	1 system, RJ-45 plug
Power Requirements		AC 100 V to 240 V, 50 Hz/60 Hz
Power Consumption		380 W (during networked standby: 1.5 W *6, during standby: 0.4 W *7)
Operation Environment		Temperature: 5°C to 35°C; humidity: 20% to 80%; storage temperature: -10°C to 60°C
Installation Height		Below 5,000 ft (1524 m)
Dimensions (Width x Height x Depth)		Approx. 455 mm x 179 mm x 472 mm (excluding feet and protrusions)
Mass		15.6 kg (X9000 X7000) 15.4 kg (X5000)
Accessories		Refer to P. 9.

*1 "W" indicates that the main unit is white in color. "B" indicates that the main unit is black in color.

*2 E model only in the case of DLA-X5000W.

*3 D-ILA is the abbreviation for Direct drive Image Light Amplifier.

*4 D-ILA devices are manufactured using extremely high-precision technology with a pixel effectiveness of 99.99%. Only 0.01% or less of the pixels are either missing or would remain permanently lit.

*5 During 3D playback, the pixel is set to 1920 x 1080.

*6 HDCP is the abbreviation for High-bandwidth Digital Content Protection system. The image of the HDMI input terminal may not be displayed in some cases due to changes in the HDCP specifications.

*7 The power consumption of this product during networked standby when all wired network ports are connected is 1.5 W.

*8 "During standby" refers to Eco Mode standby (P. 55).

• Design and specifications are subject to change without prior notice.

• Please note that some of the pictures and illustrations may have been abridged, enlarged or contextualized in order to aid comprehension. Images may differ from the actual product.

Others

For **X9000** **X7000** , a "THX 3D Display Certification" by THX has been obtained.
In addition to 2D movies, you can also enjoy faithful reproduction of images in a "quality as intended by the filmmaker" during playback of 3D movies.

The THX 3D certification is "an indication of high definition and high resolution", which is granted to products that have cleared more than 400 image quality tests.

X9000 **X7000** are isf-certified, so calibration can be performed by an isf-certified trainer.
After calibration is performed, an isf mode is added to the Picture mode.

For more details, please refer to the isf website.
http://www.imagingscience.com/

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Screen Size and Projection Distance

When a 16:9 screen is used

Screen Size			Projection Distance	
Diagonal (Model)	Width (mm)	Height (mm)	Wide-end (m)	Tele-end (m)
60	1328	747	1.78	3.66
70	1549	872	2.09	4.28
80	1771	996	2.4	4.89
90	1992	1121	2.7	5.51
100	2214	1245	3.01	6.13
110	2435	1370	3.31	6.75
120	2656	1494	3.62	7.36
130	2878	1619	3.92	7.98
140	3099	1743	4.23	8.60
150	3320	1868	4.53	9.22
160	3542	1992	4.84	9.84
170	3763	2117	5.14	10.45
180	3984	2241	5.45	11.07
190	4206	2366	5.75	11.68
200	4427	2490	6.06	12.30

Others

When a 4:3 screen is used

Screen Size			Projection Distance	
Diagonal (Model)	Width (mm)	Height (mm)	Wide-end (m)	Tele-end (m)
60	1219	914	2.22	4.49
70	1422	1067	2.60	5.24
80	1626	1219	2.98	6.00
90	1829	1372	3.36	6.75
100	2032	1524	3.74	7.51
110	2235	1676	4.11	8.26
120	2438	1829	4.49	9.02
130	2642	1981	4.87	9.77
140	2845	2134	5.25	10.53
150	3048	2286	5.63	11.28
160	3251	2438	6.00	12.04

* Projection to a 4:3 screen larger than 163" is equivalent to a size that is larger than 200" in the 16:9 format, and is beyond our guarantee coverage.

When a 2.35:1 screen is used

Screen Size			Projection Distance	
Diagonal (Model)	Width (mm)	Height (mm)	Wide-end (m)	Tele-end (m)
60	1402	597	1.95	3.91
70	1636	696	2.28	4.56
80	1870	796	2.60	5.21
90	2103	895	2.93	5.86
100	2337	995	3.26	6.51
110	2571	1094	3.58	7.16
120	2805	1193	3.91	7.81
130	3038	1293	4.23	8.47
140	3272	1392	4.56	9.12
150	3506	1492	4.88	9.77
160	3740	1591	5.21	10.42
170	3973	1691	5.53	11.07
180	4207	1790	5.86	11.72
190	4441	1890	6.19	12.37
200	4674	1989	6.51	13.02

Types of Possible Input Signals

Video

Digital Video Signal		480p, 576p, 720p/50 Hz, 720p/60 Hz, 1080i/50 Hz, 1080i/60 Hz, 1080p/24 Hz, 1080p/50 Hz, 1080p/60 Hz, 3840×2160/24Hz, 3840×2160/25Hz, 3840×2160/30Hz, 3840×2160/50Hz*1, 3840×2160/60Hz*1, 4096×2160/24Hz*2, 4096×2160/25Hz*2, 4096×2160/30Hz*2, 4096×2160/50Hz*1, 2, 4096×2160/60Hz*1, 2
3D Signal	Frame Packing	720p/50 Hz, 720p/60 Hz, 1080p/24 Hz
	Side-by-side	1080i/60 Hz, 1080p/60 Hz, 1080i/50 Hz, 1080p/50 Hz, 1080p/24 Hz, 720p/50 Hz, 720p/60 Hz
	Top-and-bottom	720p/50 Hz, 720p/60 Hz, 1080p/24 Hz

*1   When the color space is RGB/YCbCr(4:4:4), only 8-bit input is supported.

*2   The display image when the input signal is 4096×2160

☐ Display Area
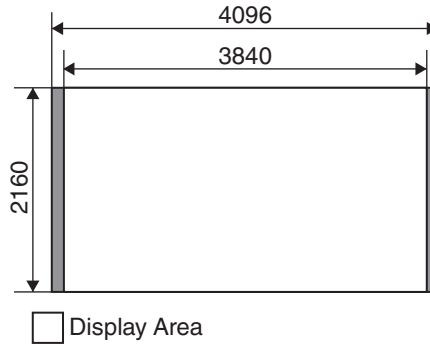
PC signal (HDMI)

No.	Designation	Resolution	fh [kHz]	fv [Hz]	dot CLK [MHz]	Total No. of Dots [dot]	Total No. of Lines [line]	No. of Effective Dots [dot]	No. of Effective Lines [line]
1	VGA 60	640×480	31.500	60.000	25.200	800	525	640	480
2	VGA 59.94	640×480	31.469	59.940	25.175	800	525	640	480
3	SVGA 60	800×600	37.879	60.317	40.000	1,056	628	800	600
4	XGA 60	1024×768	48.363	60.004	65.000	1,344	806	1,024	768
5	WXGA 60	1280×768	47.760	60.000	79.998	1,675	796	1,280	768
6	WXGA+ 60	1440×900	55.919	59.999	106.470	1,904	932	1,440	900
7	SXGA 60	1280×1024	63.981	60.020	108.000	1.688	1,066	1,280	1,024
8	WSXGA+ 60	1680×1050	65.222	60.002	147.140	2,256	1,087	1,680	1,050

*   Even when signals can be input, video images may not be projected properly depending on the PC or cable in use. When this occurs, switching to another compatible resolution or changing the cable may help to resolve the problem in some cases.
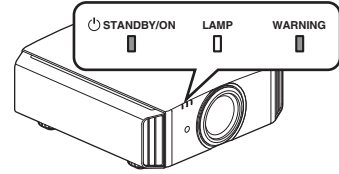
Others

Indicator Display on the Main Unit

Meaning of the lighting figures

☀ The indicator lights up.

☀ The indicator appears blinking.

STANDBY/ON **LAMP** **WARNING**

Operation mode display

Displays using the different colors and solid/blinking light of the "STANDBY/ON" indicator.

"STANDBY/ON" lights up (red)
In standby state

STANDBY/ON **LAMP** **WARNING**

"STANDBY/ON" lights up (green)
During lamp startup

STANDBY/ON **LAMP** **WARNING**

All lights off
During projection

STANDBY/ON **LAMP** **WARNING**

"STANDBY/ON" blinking (red)
In the Cool-down mode

STANDBY/ON **LAMP** **WARNING**

"STANDBY/ON" blinking (green)
When the video image is temporarily hidden (HIDE is on)

STANDBY/ON **LAMP** **WARNING**

Estimated timing for lamp replacement

Displays using the solid/blinking light of the "LAMP" indicator. The "STANDBY/ON" indicator, which shows the operating mode of the unit, is displayed simultaneously as described above.

"LAMP" lights up (orange)

STANDBY/ON **LAMP** **WARNING**   When lamp replacement is near

Warning display

You can tell the details of a warning from the (repeated) displays of the "WARNING" and "LAMP" indicators. The "STANDBY/ON" indicator, which shows the operating mode of the unit, is displayed simultaneously as described above.

The Warning mode is activated once the message is displayed. Projection is interrupted, and the cooling fan is turned on for about 100 seconds.

The power cannot be turned on again while cooling is in progress. Check the following after cooling is complete.

Indicator Status (Solid/Blinking)	Blinking Frequency	Description	Check and Countermeasure
STANDBY/ON LAMP WARNING Mode Display (*) (Red)	x1	Abnormality in the power supply	• Check that nothing is blocking the air inlets. • Check that the external temperature is normal. Countermeasure: Leave the unit unoperated until it cools down. After that, turn on the power again.
	x2	Cooling fan stopped abnormally	
	x3	Internal temperature is abnormally high	
	x4	External temperature is too high	
	x5	Abnormal circuit operation	
STANDBY/ON LAMP WARNING Mode Display (Orange) (Red) Blinking Simultaneously	x1	Abnormal circuit operation	
	x2		
	x3		
	x4	Abnormal operation of the lens cover	• Check that nothing is blocking the lens cover. Countermeasure: Turn on the power again.
STANDBY/ON LAMP WARNING Mode Display (Orange) (Red)	x1	Lamp does not light up and unit is unable to project	• Check that the lamp unit and lamp cover are correctly installed. Countermeasure: Turn on the power again.
	x2	Lamp goes out during projection	
	x3	When the lamp cover is removed	

If the Warning mode is activated again, wait for the cooling fan to stop, followed by pulling out the power plug from the outlet.
Request for repair at your authorized dealer or a nearby service center.

(*) If the scheduled time for lamp replacement is exceeded, the indicator may light up.
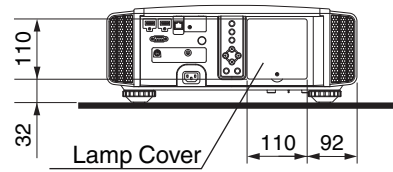
Others

Dimensions

Top Surface

472

455

5

Lens

Bottom Surface

290

91

59   337

Lens

Front

227.5

178.5

103.5

24

Lens Center   Ø60

Rear Surface

110

32

110 92

Lamp Cover
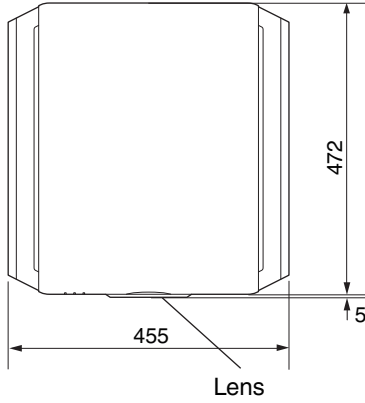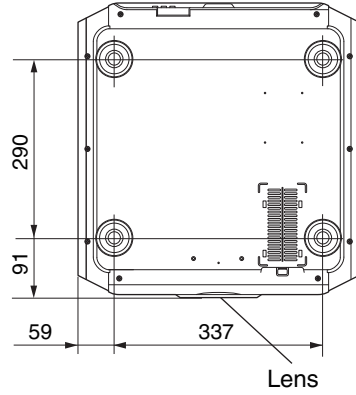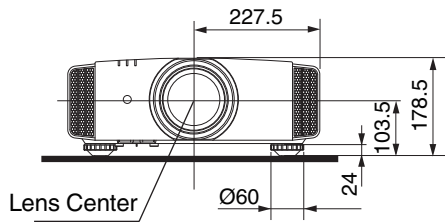
• The dimensions are identical for all the models.

Others

76

Index

Others

77

Symbol

Others

JVC

1015NOY-SW-IT