SHARP

XV-Z12000

PROJECTOR
PROJEKTOR
PROJECTEUR
PROJEKTOR
PROYECTOR
PROIETTORE
PROJECTOR

OPERATION MANUAL
BEDIENUNGSANLEITUNG
MODE D'EMPLOI
BRUKSANVISNING
MANUAL DE MANEJO
MANUALE DI ISTRUZIONI
GEBRUIKSAANWIJZING

PICTURE BY

DLP™
A TEXAS INSTRUMENTS TECHNOLOGY

香港電器安全規格
（國際電工委員會規格適合）

SPECIAL NOTE FOR USERS IN THE U.K.

The mains lead of this product is fitted with a non-rewireable (moulded) plug incorporating a 10A fuse. Should the fuse need to be replaced, a BSI or ASTA approved BS 1362 fuse marked ⊽ or ⬦ and of the same rating as above, which is also indicated on the pin face of the plug, must be used.
Always refit the fuse cover after replacing the fuse. Never use the plug without the fuse cover fitted.
In the unlikely event of the socket outlet in your home not being compatible with the plug supplied, cut off the mains plug and fit an appropriate type.

DANGER

The fuse from the cut-off plug should be removed and the cut-off plug destroyed immediately and disposed of in a safe manner.
Under no circumstances should the cut-off plug be inserted elsewhere into a 10A socket outlet, as a serious electric shock may occur.
To fit an appropriate plug to the mains lead, follow the instructions below:

WARNING:

THIS APPARATUS MUST BE EARTHED.

IMPORTANT:

The wires in this mains lead are coloured in accordance with the following code:
Green-and-yellow   : Earth
Blue   : Neutral
Brown   : Live
As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:
• The wire which is coloured green-and-yellow must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol ⏚ or coloured green or green-and-yellow.
• The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.
• The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

IF YOU HAVE ANY DOUBT, CONSULT A QUALIFIED ELECTRICIAN.

Before using the projector, please read this operation manual carefully.

Introduction ENGLISH

IMPORTANT
For your assistance in reporting the loss or theft of your Projector, please record the Serial Number located on the bottom of the projector and retain this information. Before recycling the packaging, please be sure that you have checked the contents of the carton thoroughly against the list of "Supplied accessories" on page **14**.

Model No.: XV-Z12000

Serial No.:

WARNING: High brightness light source. Do not stare into the beam of light, or view directly. Be especially careful that children do not stare directly into the beam of light.

WARNING: To reduce the risk of fire or electric shock, do not expose this product to rain or moisture.

CAUTION: To reduce the risk of electric shock, do not remove cabinet. No user-serviceable parts are inside. Refer servicing to qualified service personnel.

WARNING:
The cooling fan in this projector continues to run for about 90 seconds after the projector enters the standby mode. During normal operation, when putting the projector into the standby mode always use the STANDBY button on the projector or on the remote control. Ensure the cooling fan has stopped before disconnecting the power cord.
DURING NORMAL OPERATION, NEVER TURN THE PROJECTOR OFF BY DISCONNECTING THE POWER CORD.
FAILURE TO OBSERVE THIS WILL RESULT IN PREMATURE LAMP FAILURE.

WARNING:
This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.
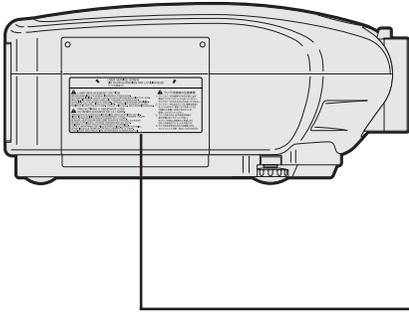
Caution Concerning the Lamp Replacement

See "Replacing the Lamp" on pages **80-82**.

| USER SERVICE SCREW |
| VIS POUR ENTRETIEN PAR L'UTILISATEUR |
| ランプ交換用ネジ |

⚠ **LAMP REPLACEMENT CAUTION**
BEFORE REMOVING THE SCREW, DISCONNECT POWER CORD.
HOT SURFACE INSIDE. ALLOW 1 HOUR TO COOL BEFORE REPLACING THE LAMP.
REPLACE WITH SAME SHARP LAMP UNIT TYPE BQC-XVZ100005 ONLY.
UV RADIATION : CAN CAUSE EYE DAMAGE. TURN OFF LAMP BEFORE SERVICING.
HIGH PRESSURE LAMP : RISK OF EXPLOSION. POTENTIAL HAZARD OF GLASS
PARTICLES IF LAMP HAS RUPTURED. HANDLE WITH CARE. SEE OPERATION MANUAL.

⚠ **PRECAUTIONS A OBSERVER LORS
DU REMPLACEMENT DE LA LAMPE.**
DEBRANCHER LE CORDON D'ALIMENTATION AVANT DE RETIRER LES VIS.
L'INTERIEUR DU BOITIER ETANT EXTREMEMENT CHAUD, ATTENDRE 1 HEURE
AVANT DE PROCEDER AU REMPLACEMENT DE LA LAMPE.
NE REMPLACER QUE PAR UNE LAMPE SHARP DE TYPE BQC-XVZ100005
RAYONS ULTRAVIOLETS : PEUVENT ENDOMMAGER LES YEUX.
ETEINDRE LA LAMPE AVANT DE PROCEDER A L'ENTRETIEN.
LAMPE A HAUTE PRESSION : RISQUE D'EXPLOSION. DANGER POTENTIEL
DE PARTICULES DE VERRE EN CAS DECLATEMENT DE LA LAMPE.
A MANIPULER AVEC PRECAUTION, SE REPORTER AU MODE D'EMPLOI.

⚠ **ランプ交換時の注意事項**
1. ランプカバーの交換用ネジを外す前に、必ず
電源プラグをコンセントから抜いてください。
ランプカバー以外のネジは、外さないでください。
2. ランプカバー内にあるランプは、通電中高温に
なっていますので、電源プラグを抜いてから
1時間以上放置し、完全に冷めたことを
確認してから行ってください。
3. ランプ交換方法は、必ず取扱説明書の
操作手順に従って行ってください。
尚、ランプ交換は、お客様のご希望により
お近くの販売店で行うことも可能です。
4. ランプは必ず所定のものと交換願います。
ランプユニット品番：BQC-XVZ100005

WARNING:

Some IC chips in this product include confidential and/or trade secret property belonging to Texas Instruments.
Therefore you may not copy, modify, adapt, translate, distribute, reverse engineer, reverse assemble or discompile
the contents thereof.

Contents

Introduction

Connections and Setup

Basic Operation

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Easy to Use Functions

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IMPORTANT SAFEGUARDS

ATTENTION: **Please read all of these instructions before you operate your Projector for the first time. Save these instructions for future reference.**

For your own protection and prolonged operation of your Projector, be sure to read the following "IMPORTANT SAFEGUARDS" carefully, before use.
This projector has been engineered and manufactured to ensure your personal safety. But IMPROPER USE CAN RESULT IN POTENTIAL ELECTRICAL SHOCK OR FIRE HAZARDS. In order not to defeat the safeguards incorporated into this Projector, observe the following basic rules for its installation, use and servicing.

1. Unplug the Projector from the wall outlet before cleaning.
2. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
3. Do not use attachments not recommended by the Projector manufacturer, as they may cause hazards.
4. Do not use the Projector near water; for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, near a swimming pool, etc. Never spill liquid into the projector.
5. Do not place the Projector on an unstable cart, stand, or table. The Projector may fall, which may cause serious injury to a child or an adult, and/or serious damage to the unit.
6. Wall or Ceiling Mounting—The product should be mounted to a wall or ceiling only as recommended by the manufacturer.
7. Projector equipment and cart combinations should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the equipment and cart combination to overturn.
8. Slots and openings in the cabinet back and bottom are provided for ventilation. To ensure reliable operation of the Projector and to protect it from overheating, these openings must not be blocked or covered. The openings should never be covered with cloth or other material.
9. This Projector should never be placed near or over a radiator or heating vent. The Projector should not be placed in a built-in installation such as a bookcase unless proper ventilation is provided.
10. The Projector should be operated only from the type of power source indicated on the back of the projector or in the specifications. If you are not sure of the type of power supplied to your home, consult your Projector dealer or local power company.
11. Do not place the Projector where the cord will be abused by persons walking on it.

12. Follow all warnings and instructions marked on the Projector.
13. To prevent damage to the projector due to lightning and power-line surges, unplug the projector from the power outlet, when not in use.
14. Do not overload wall outlets and extension cords with too many products, because this can result in fire or electric shock.
15. Never push objects of any kind into the Projector through the cabinet slots as they may touch high-voltage points or cause a short circuit. This could result in a fire or electric shock.
16. Do not attempt to service the Projector yourself. Opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
17. Unplug the Projector equipment from the wall outlet and refer servicing to qualified service personnel under the following conditions:
    a. When the power cord or plug is damaged or frayed.
    b. If liquid has been spilled into the Projector.
    c. If the Projector has been exposed to rain or water.
    d. If the Projector does not operate normally when you follow the operating instructions. Adjust only those controls that are covered by the operating instructions, as improper adjustment of other controls may cause damage and will often require extensive work by a qualified technician to restore the Projector to normal operation.
    e. If the Projector has been dropped or the cabinet has been damaged.
    f. When the Projector exhibits a distinct change in performance—this indicates a need for service.
18. When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer that have the same characteristics as the original parts. Unauthorised substitutions may result in fire, electric shock, or other hazards.

IMPORTANT SAFEGUARDS

19. This Projector is provided with one of the following types of plugs. If the plug should fail to fit into the power outlet, please contact your electrician.
    Do not defeat the safety purpose of the plug.
      a. Two-wire type mains plug.
      b. Three-wire grounding type mains plug with a grounding terminal.
         This plug will only fit into a grounding type power outlet.

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- PC/AT is a registered trademark of International Business Machines Corporation in the United States.
- Adobe Acrobat is a trademark of Adobe Systems Incorporated.
- Macintosh is a registered trademark of Apple Computer, Inc. in the United States and/or other countries.
- All other company or product names are trademarks or registered trademarks of their respective companies.

Be sure to read the following safeguards when setting up your projector.

Caution concerning the lamp unit

■ Potential hazard of glass particles if lamp ruptures. In case of lamp rupture, contact your nearest Sharp Authorised Projector Dealer or Service Centre for replacement.

See "Replacing the Lamp" on pages **80**-**82**.

高温注意
CAUTION
PRECAUCIÓN
PRÉCAUTION

BQC-XVZ100005

Cautions concerning the setup of the projector

■ For minimal servicing and to maintain high image quality, SHARP recommends that this projector be installed in an area free from humidity, dust and cigarette smoke. When the projector is subjected to these environments, the lens must be cleaned more often. As long as the projector is regularly cleaned, use in these environments will not reduce the overall operation life of the unit. Internal cleaning should only be performed by an Sharp Authorised Projector Dealer or Service Centre.

Do not set up the projector in places exposed to direct sunlight or bright light.

■ Position the screen so that it is not in direct sunlight or room light. Light falling directly on the screen washes out the colours, making viewing difficult. Close the curtains and dim the lights when setting up the screen in a sunny or bright room.

The projector may safely be tilted to a maximum angle of 5 degrees.

■ Placement should be within ±5 degrees.
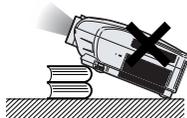
Do not subject the projector to hard impact and/ or vibration.

■ Take care with the lens so as not to hit or damage the surface of the lens.

Rest your eyes occasionally.

■ Watching the screen for long hours continuously will make your eyes tired. Be sure to occasionally rest your eyes.

Avoid locations with high or low temperature.

■ The operating temperature for the projector is from +5°C to +35°C.
■ The storage temperature for the projector is from −20°C to +60°C.

Do not block the intake and exhaust vents.

■ Allow at least 30 cm of space between the exhaust vent and the nearest wall or obstruction.

■ Be sure that the intake vent and the exhaust vent are not obstructed.
■ If the cooling fan becomes obstructed, a protection circuit will automatically put the projector into the standby mode. This does not indicate a malfunction. Remove the projector power cord from the wall outlet and wait at least 10 minutes. Place the projector where the intake and exhaust vents are not blocked, plug the power cord back in and turn on the projector. This will return the projector to the normal operating condition.

Cautions regarding the transportation of the projector

■ When transporting the projector, be sure not to subject it to hard impact and/or vibration, as this can result in damage. Take extra caution with the lens. Before moving the projector, be sure to unplug the power cord from the wall outlet, and disconnect any other cables connected to it.

Other connected equipment

■ When connecting a computer or other audio-visual equipment to the projector, make the connections AFTER unplugging the power cord of the projector from the AC outlet and turning off the equipment to be connected.
■ Please read the operation manuals of the projector and the equipment to be connected for instructions on how to make the connections.

Temperature monitor function

■ If the projector starts to overheat due to setup problems or blockage of the air vents, "██" and "TEMP." will blink in the lower left corner of the picture. If the temperature continues to rise, the lamp will turn off, the temperature warning indicator on the projector will blink, and after a 90-second cooling-off period the projector will enter the standby mode. Refer to "Maintenance Indicators" on page **78** for details.

📖 Info

• The cooling fan regulates the internal temperature, and its performance is automatically controlled. The sound of the fan may change during projector operation due to changes in the fan speed. This does not indicate malfunction.
• Do not unplug the power cord during projection or cooling fan operation. This can create damage due to the rise in internal temperature, as the cooling fan also stops.

How to Access the PDF Operation Manuals of SharpVision Manager

PDF operation manuals in several languages for the "SharpVision Manager" theatre projector software provided are included in the CD-ROM. To utilise these manuals, you need Adobe Acrobat Reader installed on your PC (Windows or Macintosh). If you have not installed Acrobat Reader yet, you can install it from the CD-ROM.

To install Acrobat Reader from the CD-ROM

For Windows:
① Insert the CD-ROM in the CD-ROM drive.
② Start up Explore.
③ Double click the "CD-ROM" drive.
④ Double click the "ACROBAT" folder.
⑤ Double click the language (name of the folder) that you want to view.
⑥ Double click the installation programme and follow the instructions on the screen.

For Macintosh:
① Insert the CD-ROM in the CD-ROM drive.
② Double click the "CD-ROM" icon.
③ Double click the "ACROBAT" folder.
④ Double click the language (name of the folder) that you want to view.
⑤ Double click the installation programme and follow the instructions on the screen.

For other operating systems:
Please download Acrobat Reader from the Internet (http://www.adobe.com).

For other languages:
If you prefer using Acrobat Reader for languages other than those included in the CD-ROM, please download the appropriate version from the Internet.

Accessing the PDF Manuals

For Windows:
① Insert the CD-ROM in the CD-ROM drive.
② Start up Explore.
③ Double click the "CD-ROM" drive.
④ Double click the "MANUALS" folder.
⑤ Double click the language (name of the folder) that you want to view.
⑥ Double click the "SVM2" pdf file to access the SharpVision Manager manual.

For Macintosh:
① Insert the CD-ROM in the CD-ROM drive.
② Double click the "CD-ROM" icon.
③ Double click the "MANUALS" folder.
④ Double click the language (name of the folder) that you want to view.
⑤ Double click the "SVM2" pdf file to access the SharpVision Manager manual.

✎ Note

- The installer of SharpVision Manager may start automatically when the CD-ROM is inserted in the CD-ROM drive of the Windows PC. In this case, stop installation by clicking on "Cancel".
- If the desired pdf file cannot be opened by double clicking the mouse, start Acrobat Reader first, then specify the desired file using the "File", "Open" menu.
- See the "readme.txt" file on the CD-ROM for important information not included in this operation manual.

Quick Guide

In this page, connection of the projector and the video equipment is explained as an example for the procedure from setup to projection. Refer to each page for details.

Required equipments

Projector
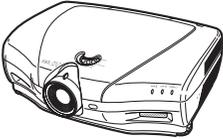
Remote control
• Insert the batteries. (Page **13**)
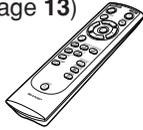
Power cord
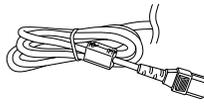
Video equipment
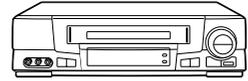
Composite video cable (commercially available)

1. **Place the projector facing a wall or a screen.**

2. **Connect to video equipment. (Page 17)**

Composite video cable (commercially available)

To INPUT 4 terminal

To video output terminal

3. **Connect the output terminal of the video equipment to the input terminal of the audio equipment using an audio cable.**

4. **Plug the power cord into the AC socket of the projector and into the wall outlet. (Page 16, 34)**

5. **Remove the lens cap from the lens. (Page 10)**

Lens cap

Power cord

6. **Turn the projector on using ⓘ on the remote control. (Page 34)**

INPUT 4 button

ON button

The power indicator illuminates blue.
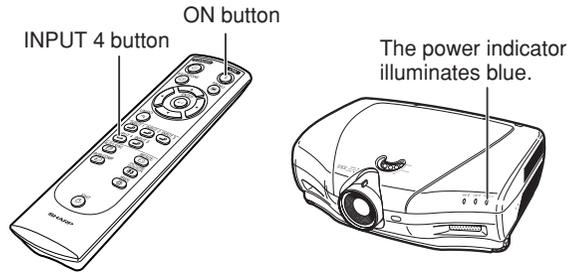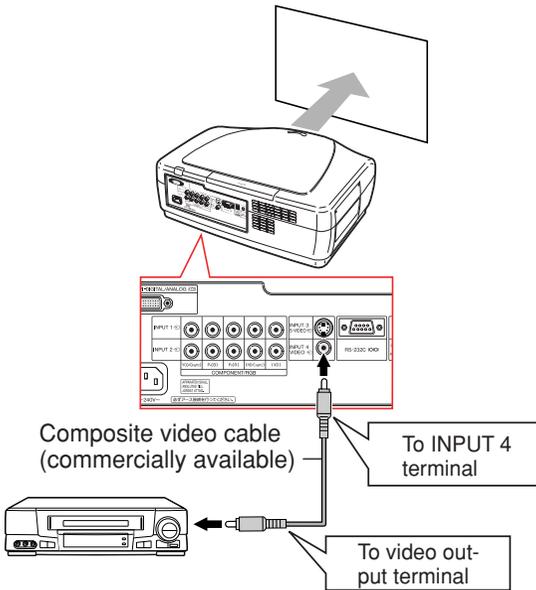
7. **Press ⊖ on the remote control to select the INPUT 4 mode. (Page 35)**

▼On-screen Display

◻ **INPUT 4**
NTSC3.58

8. **Turn on the video equipment.**

ON

9. **Play the video.**

10. **Adjust the image size, image position and the focus. (Page 28, 29)**
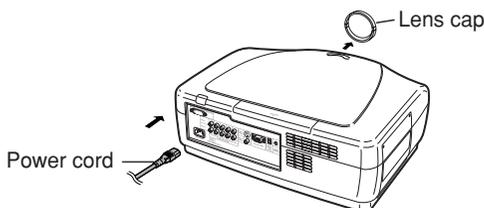
Adjust the focus by rotating the focus ring.

Adjust the zooming by moving the zoom knob.

Adjust the height of the image by rotating the lens shift dial.
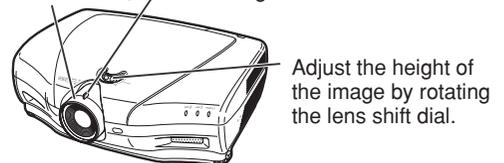
Note

• This projector can also be connected to a computer as well as to video equipment. (Page **22**)

Part Names

Numbers in ▬ refer to the main pages in this operation manual where the topic is explained.

Projector (Front and Top View)

Adjustment buttons `43`
(▼, ▲, ◀, ▶)
For selecting menu items.

ENTER button `43`
For setting items selected
or adjusted on the menu.

UNDO button `43`
For undoing an operation or
returning to the default
settings.

`42` **MENU button**
For displaying adjustment
and setting screens.

`62` **RESIZE button**
For switching the screen
size (SIDE BAR, SMART
STRETCH, etc.).

`35` **INPUT button**
For switching input mode
1, 2, 3, 4 or 5.

`34` **ON button**
For turning the power on.

`37` **STANDBY button**
For putting the projector
into the standby mode.

`78` **Temperature warning
indicator**
When the internal
temperature rises, this
indicator will illuminate
red.

`78` **Lamp indicator**
Illuminates blue, indicating
normal function. Replace
the lamp when the
indicator illuminates red.

Lens shift dial `29`

Zoom knob `28`

Focus ring `28`

Adjustment foot `27`

Lens cap

`34` **Power indicator**
Illuminates red, when the
projector is in standby.
When the power is turned
on, this indicator will
illuminate blue.

Intake vent

`27` **Adjustment foot**

`13` **Remote control
sensor**

Attaching and removing the lens cap
• Press on the two buttons of the lens cap
  and attach it on the lens. Then release
  the buttons to lock it in place.
• Press on the two buttons of the lens cap
  and remove it from the lens.

**In this operation manual, the illustration and the
screen display are simplified for explanation,
and may differ slightly from actual display.**

Projector (Rear View)

17 **INPUT 3 terminal**
Terminal for connecting video equipment with an S-video terminal.

INPUT 1 terminals **18**
Terminals for component and RGB signals.

25 **RS-232C terminal**
For controlling projector using a computer.

INPUT 5 terminal **19**
Terminal for DVI digital, computer RGB and component signals.

DC 12V OUTPUT terminal

26 **WIRED REMOTE control input terminal**

INPUT 2 terminals **18**
Terminals for component and RGB signals.

INPUT 5 DVI-DIGITAL/ANALOG

INPUT 1
INPUT 2
INPUT 3 S-VIDEO
INPUT 4 VIDEO
RS-232C

DC12V OUTPUT MAX CURRENT 250mA
WIRED REMOTE

Y(G/G sync) Pb(B) Pr(R) (HD/C sync) (VD)
COMPONENT/RGB

APPARATEN SKALL ANSLUTAS TILL JORDAT UTTAG.

AC socket **16**

100-240V~   必ずアース接続を行ってください。

17 **INPUT 4 terminal**
For connecting video equipment.

77 **Intake vent**

Intake vent **77**

Kensington Security Standard connector

Exhaust vent **77**

Remote control sensor **13**

Rubber cap
The terminal cover can be attached after removing the rubber cap.

Using the Kensington Lock 🔒
This projector has a Kensington Security Standard connector for use with a Kensington MicroSaver Security System. Refer to the information that came with the system for instructions on how to use it to secure the projector.

Using the Terminal Cover
When the projector is used on a desktop, high mounted or ceiling mounted, attach the terminal cover (supplied) to hide the connecting cables.
Attaching the Terminal Cover
① Align the hook on the terminal cover with the insert hole in the hook at the back of the projector.
② Press the hook in the direction indicated with the arrow to fasten the terminal cover to the projector.
③ Insert the terminal cover into the mounting groove on the projector while pushing the tabs inside the terminal cover to the outside with your fingers.

PUSH!

Removing the rubber cap attached on the projector and attach the clips.

Part Names
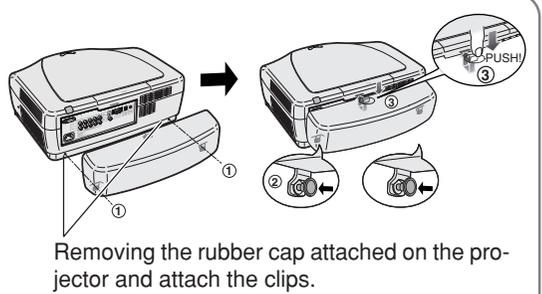
Remote Control (Front View)

STANDBY button `37`
For putting the projector into the standby mode.

KEYSTONE button `38`
For adjusting Keystone Correction or Vertical Size setting.

ENTER button `43`
For setting items selected or adjusted on the menu.

UNDO button `43`
For undoing an operation or returning to the default settings.

AUTO SYNC button `59`
For automatically adjusting images when connected to a computer.

RGB/COMP. button `69`
For switching to the respective input signal type.

`34` **ON button**
For turning the power on.

`42` **MENU button**
For displaying adjustment and setting screens.

`43` **Adjustment buttons**
(▼, ▲, ◀, ▶)
For selecting menu items.

`35` **INPUT buttons**
For switching to the respective input modes.

`62` **RESIZE button**
For switching the screen size (SIDE BAR, SMART STRETCH, etc.).

`46` **PICTURE POSITION button**
For selecting the picture position.

`65` **IRIS button**
For switching "HIGH BRIGHTNESS MODE", "MEDIUM MODE" and "HIGH CONTRAST MODE".

Backlight button
For lighting all buttons on the remote control.

Remote Control (Top View)

`26` **WIRED R/C JACK**
For controlling the projector by connecting the remote control to the projector.

Remote control signal transmitters `13`

Using the Remote Control

Available Range of the Remote Control

■ **The remote control can be used to control the projector within the ranges shown in the illustration.**

Remote control

🖊 Note

• The signal from the remote control can be reflected off a screen for easy operation. However, the effective distance of the signal may differ due to the screen material.

7 m

When using the remote control:
• Be sure not to drop, expose to moisture or high temperature.
• The remote control may malfunction under a fluorescent lamp. Under that circumstance, move the projector away from the fluorescent lamp.

Remote control
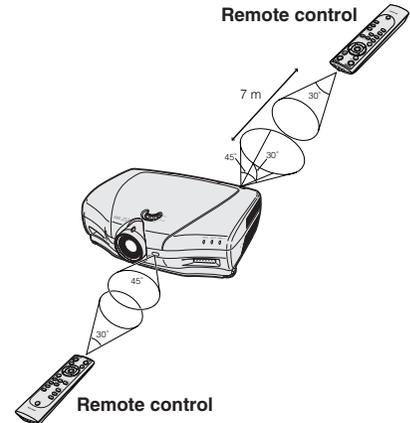
Inserting the Batteries

The batteries (two "AA" size) are included in the package.

1 **Pull down the tab on the cover and remove the cover towards the direction of the arrow.**

2 **Insert the included batteries.**
   • Insert the batteries making sure the polarities correctly match the ⊕ and ⊖ marks inside the battery compartment.

3 **Insert the lower tab of the cover into the opening, and lower the cover until it clicks in place.**
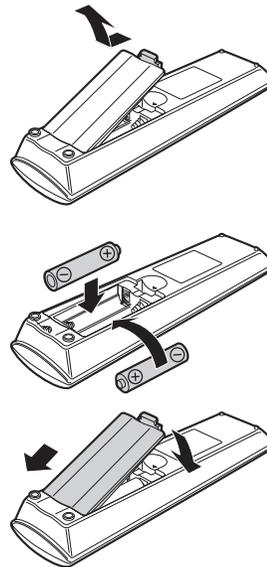
Incorrect use of the batteries may cause them to leak or explode. Please follow the precautions below.

⚠ Caution

• Insert the batteries making sure the polarities correctly match the ⊕ and ⊖ marks inside the battery compartment.
• Batteries of different types have different properties, therefore do not mix batteries of different types.
• Do not mix new and old batteries.
  This may shorten the life of new batteries or may cause old batteries to leak.
• Remove the batteries from the remote control once they have run out, as leaving them can cause them to leak. Battery fluid from leaked batteries is harmful to your skin, therefore be sure to first wipe them and then remove them using a cloth.

• The batteries included with this projector may exhaust over a short period, depending on how they are kept. Be sure to replace them as soon as possible with new batteries when they have run out.
• Remove the batteries from the remote control if you will not be using the remote control for a long time.

Accessories

Supplied accessories

Remote control

Two "AA" size batteries

Power cord

(1)
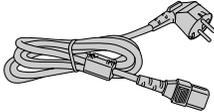
For Europe (except U.K.) and Korea

(2)
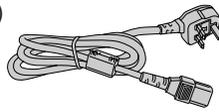
For U.K., Hong Kong and Singapore

(3)
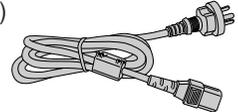
For Australia and New Zealand

✎ Note

- Depending on the region, projectors are shipped only one power cord (see above). Use the power cord that corresponds to the wall outlet in your country.
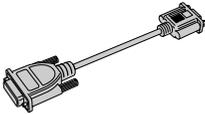
DVI to 15-pin D-sub adaptor

Video cable
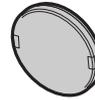
Lens cap (attached)
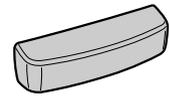
Terminal cover
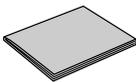
CD-ROM (SharpVision Manager)
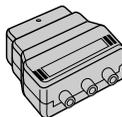
21-pin RCA conversion adaptor (Supplied for Europe only)

Operation manuals

SharpVision Manager operation manual

Optional accessories

3 RCA to 15-pin D-sub cable (3.0 m)	AN-C3CP
DVI cable (3.0 m)	AN-C3DV

✎ Note

- Some of the cables may not be available depending on the region. Please check with your nearest Sharp Authorised Projector Dealer or Service Centre.

Connections and Setup
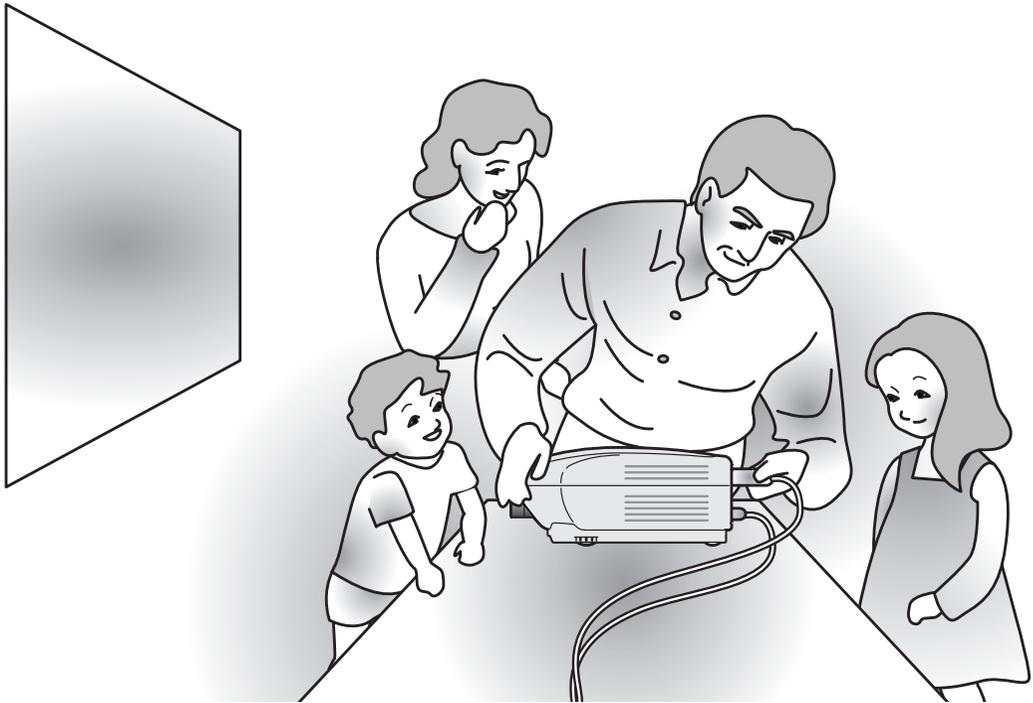
Connecting the Projector to Other Devices

Before Connecting

✎ Note

- **Before connecting, be sure to unplug the power cord of the projector from the AC outlet and turn off the devices to be connected. After making all connections, turn on the projector and then the other devices.**
  When connecting a computer, be sure that it is the last device to be turned on after all the connections are made.
- Be sure to read the operation manuals of the devices to be connected before making connections.

This projector can be connected to:

Video equipment:

- ■ **A VCR, DVD player or other video equipment (See page 17.)**
- ■ **A DVD player or DTV* decoder (See page 18.)**

*DTV is the umbrella term used to describe the new digital television system in the United States.

A computer using:

- ■ **DVI to 15-Pin D-sub adapter (See page 22.)**
- ■ **A DVI cable (See page 23.)**
- ■ **An RS-232C cable (See page 25.)**

Connecting the Power Cord

Plug in the supplied power cord into the AC socket on the rear of the projector.

Supplied accessory	Power cord

Power cord
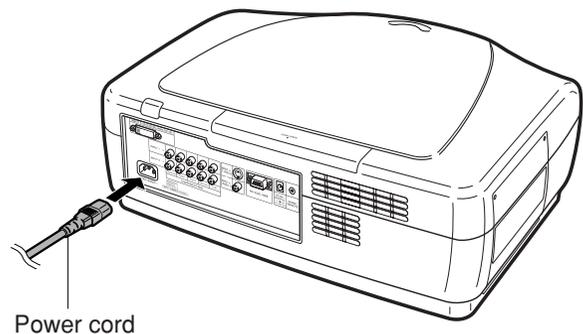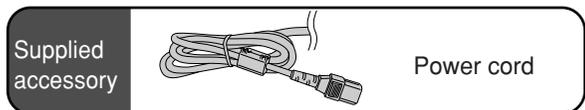
Connecting to Video Equipment

Connecting to Video Equipment Using an S-video or a Composite Video Cable (INPUT 3 or 4)

Using an S-video or a composite video cable, a VCR, DVD player or other video equipment can be connected to INPUT 3 or INPUT 4 input terminal.

1 **Connect an S-video cable or a composite video cable to the projector.**
- S-video cable: to INPUT 3 terminal
- Composite video cable: to INPUT 4 terminal

2 **Connect the above cable to the video equipment.**
- S-video cable: to S-video output terminal
- Composite video cable: to video output terminal

✎ Note

- The INPUT 3 (S-VIDEO) terminal uses a video signal system in which the picture is separated into colour and luminance signals to realize a higher-quality image. To view a higher-quality image, use a commercially available S-video cable to connect the INPUT 3 terminal on the projector and the S-video output terminal on the video equipment.

Supplied accessory	Video Cable

S-video cable (commercially available)
*Use when connecting to video equipment with S-video output terminal.

To INPUT 3 terminal

To INPUT 4 terminal

Composite video cable
*Use when connecting to video equipment without S-video output terminal.

To video output terminal — To S-video output terminal

VCR or other video equipment
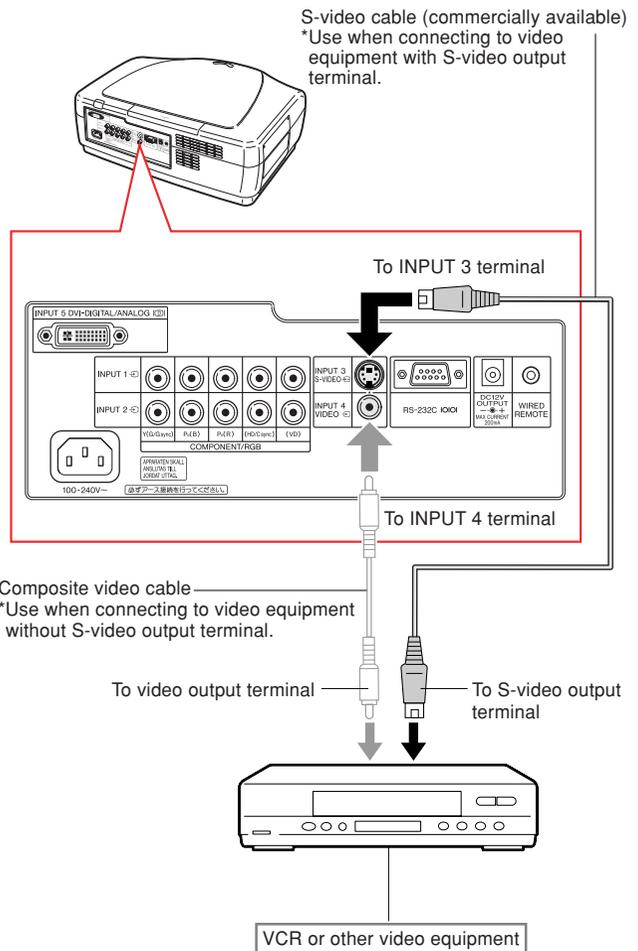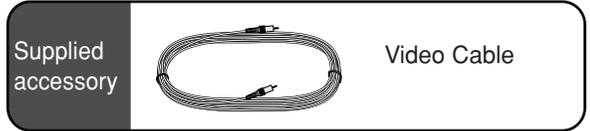
Connecting to Component Video Equipment Using a Component Cable (INPUT 1 or 2)

Use a component cable when connecting the component video equipment such as DVD players and DTV* decoders to INPUT 1 or 2 terminals.

***DTV is the umbrella term used to describe the new digital television system in the United States.**

1 Connect a component cable to the projector.

2 Connect the above cable to the component video equipment.

📝 Note

- When connecting the projector to the video equipment in this way, select "Component" for "Signal Type" in the "Options" menu, or select the Component mode by pressing $\overset{RGB/COMP.}{\underset{\ominus}{\bigcirc}}$ on the remote control. See page **69**.
- Set the "Resolution" of "Special Modes" to "480P" during input of a 480P signal. See page **58**.

To INPUT 1 or 2 terminals

Component cable
(commercially available)

To analog component
output terminal

DVD player or
DTV* decoder
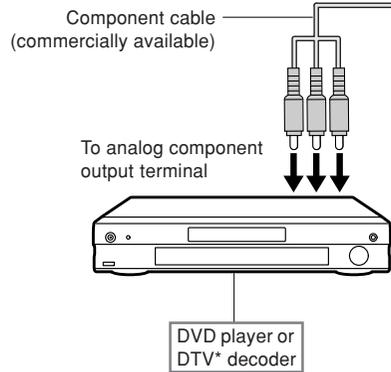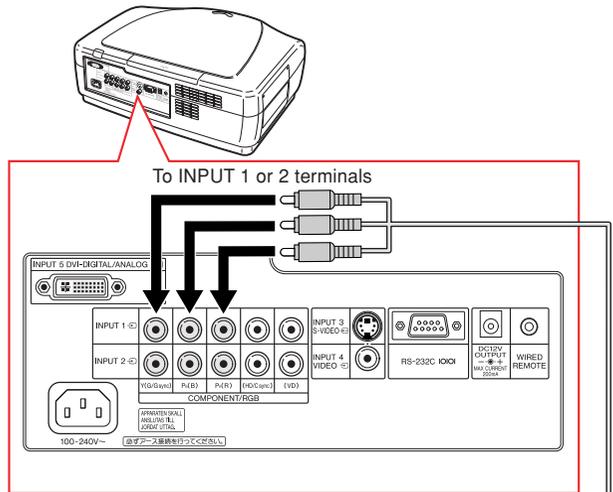
Connecting to RGB Video Equipment Using a 5 RCA RGB Cable (INPUT 1 or 2)

Use a 5 RCA RGB cable when connecting the RGB video equipment such as DVD players and DTV* decoders to INPUT 1 or 2 terminals.

*DTV is the umbrella term used to describe the new digital television system in the United States.

1 Connect a 5 RCA RGB cable to the projector.

2 Connect the above cable to the RGB video equipment.

Note

• When connecting the projector to the video equipment in this way, select "RGB" for "Signal Type" in the "Options" menu, or select the RGB mode by pressing on the remote control. See page **69**.

• The (HD/C sync) and (VD) terminals may be used depending on the specifications of the DTV decoder connected to this projector. Please refer to the operation manual of the DTV decoder for details.

To INPUT 1 or 2 terminals

5 RCA RGB cable
(Commercially available)

To analog RGB output terminal

DVD player or DTV* decoder

Connecting to RGB Video Equipment Using the DVI to 15-pin D-sub Adaptor and the RGB Cable (INPUT 5)

1 Connect a DVI to 15-pin D-sub adaptor to the projector.

2 Connect the above adaptor to an RGB cable.

3 Connect the above cable to the RGB video equipment.

• Secure the connectors by tightening the thumbscrews.

Note

• When connecting the projector to the video equipment in this way, select "A. RGB" for "Signal Type" in the "Options" menu, or select the A. RGB mode by pressing on the remote control. See page **69**.

Supplied accessory

DVI to 15-pin D-sub adaptor

To INPUT 5 terminal

DVI to 15-pin D-sub adaptor

RGB Cable
(commercially available)

To RGB output terminal

DVD player or DTV* decoder

Connecting to Component Video Equipment Using a 3 RCA to 15-pin D-sub Cable and the DVI to 15-pin D-sub Adaptor (INPUT 5)

Use a 3 RCA to 15-pin D-sub cable and the DVI to 15-pin D-sub adaptor when connecting component video equipment such as DVD players and DTV* decoders to the INPUT 5 terminal.

*DTV is the umbrella term used to describe the new digital television system in the United States.

1 Connect a DVI to 15-pin D-sub adaptor to the projector.

2 Connect a 3 RCA to 15-pin D-sub cable to the above adaptor.

• Secure the connectors by tightening the thumbscrews.

3 Connect the above cable to the video equipment.

Note

• Select the input signal type of the video equipment. See page **69**.
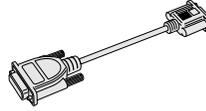
Supplied accessory	DVI to 15-pin D-sub adaptor
Optional accessory	3 RCA to 15-pin D-sub cable Type: AN-C3CP (3.0 m)

To INPUT 5 terminal
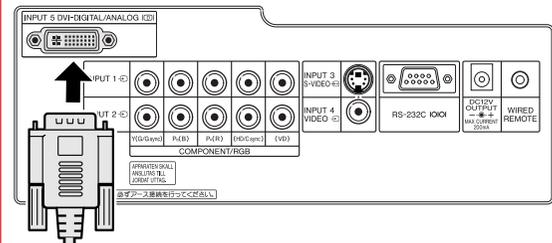
DVI to 15-pin D-sub adaptor

3 RCA to 15-pin D-sub cable (sold separately)

To analog component output terminal
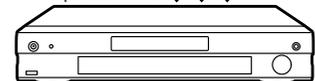
DVD player or DTV* decoder

Connecting to Video Equipment with the HDMI Output Terminal Using a DVI to HDMI Cable (INPUT 5)

Use a DVI to HDMI cable when connecting HDMI video equipment such as DVD players to INPUT 5 terminal.

1 **Connect a DVI to HDMI cable to the projector.**
   • Secure the connectors by tightening the thumbscrews.

2 **Connect the above cable to the video equipment.**

📎 Note

• Select the input signal type of the video equipment. See page **69**.
• Before connecting, be sure to unplug the power cord of the projector from the AC outlet and turn off the devices to be connected. After making all connections, turn on the projector and then the other devices.

To INPUT 5 terminal

DVI to HDMI cable (commercially available)
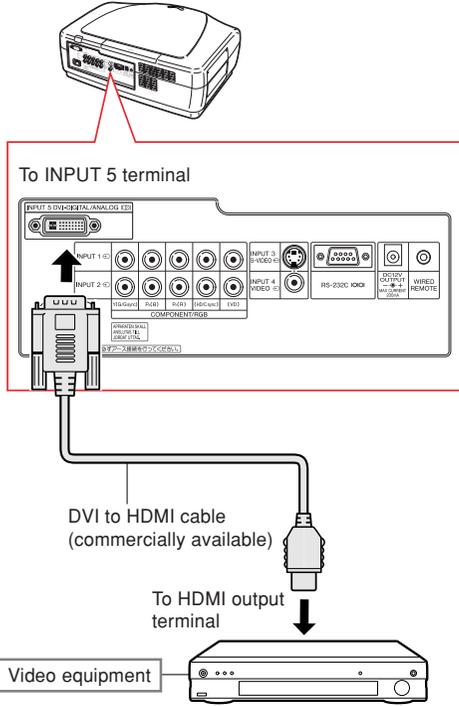
To HDMI output terminal

Video equipment

Connecting to Video Equipment with the DVI Output Terminal Using a DVI Cable (INPUT 5)

Use a DVI cable when connecting video equipment with the DVI output terminal such as DVD players to INPUT 5 terminal.

1 **Connect a DVI cable to the projector.**

2 **Connect the above cable to the video equipment.**
   • Secure the connectors by tightening the thumbscrews.

📎 Note

• Select the input signal type of the video equipment. See page **69**.
• Before connecting, be sure to unplug the power cord of the projector from the AC outlet and turn off the devices to be connected. After making all connections, turn on the projector and then the other devices.

Optional accessory

DVI cable
Type: AN-C3DV
(3.0 m)

To INPUT 5 terminal

DVI cable (sold separately)

To DVI Digital output terminal

Video equipment

Connecting the Projector to a Computer
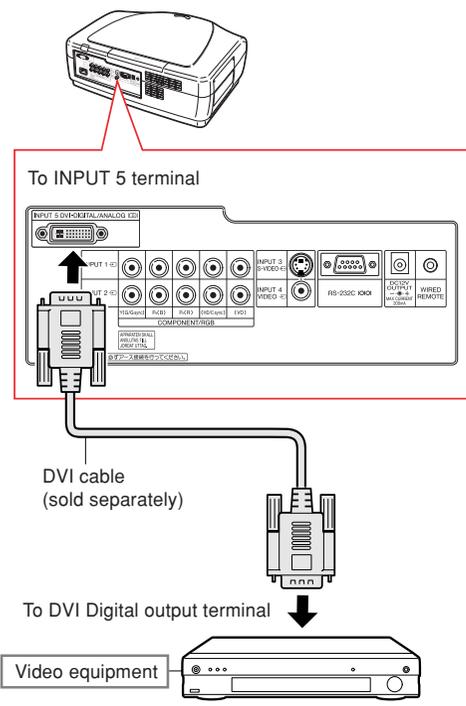
Supplied accessory — DVI to 15-pin D-sub adaptor

Connecting to a Computer Using the DVI to 15-pin D-sub Adaptor and the RGB Cable (INPUT 5)

1 Connect a DVI to 15-pin D-sub adaptor to the projector.

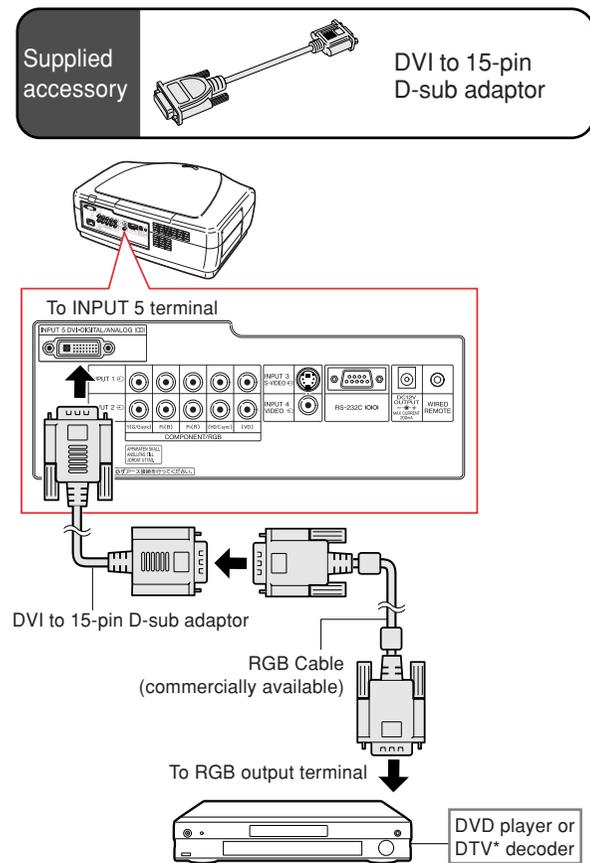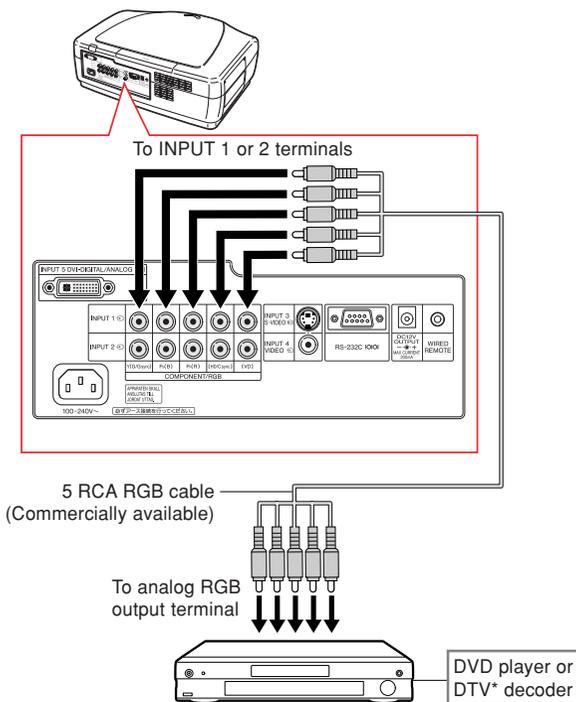**2** Connect the above adaptor to an RGB cable.

3 Connect the above cable to the computer.

• Secure the connectors by tightening the thumbscrews.

To INPUT 5 terminal

DVI to 15-pin D-sub adaptor

RGB Cable (commercially available)

To RGB output terminal

Notebook computer

🖉 Note

• See "Computer Compatibility Chart" on page **88** for a list of computer signals compatible with the projector. Use with computer signals other than those listed may cause some of the functions not to work.

• When connecting the projector to a computer in this way, select "A. RGB" for "Signal Type" in the "Options" menu, or select the "A. RGB" by pressing on the remote control. See page **69**.

• A Macintosh adaptor may be required for use with some Macintosh computers. Contact your nearest Sharp Authorised Projector Dealer or Service Centre.

• Depending on the computer you are using, an image may not be projected unless the signal output setting of the computer is switched to the external output. Refer to the computer operation manual for switching the computer signal output settings.
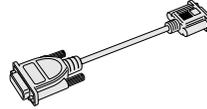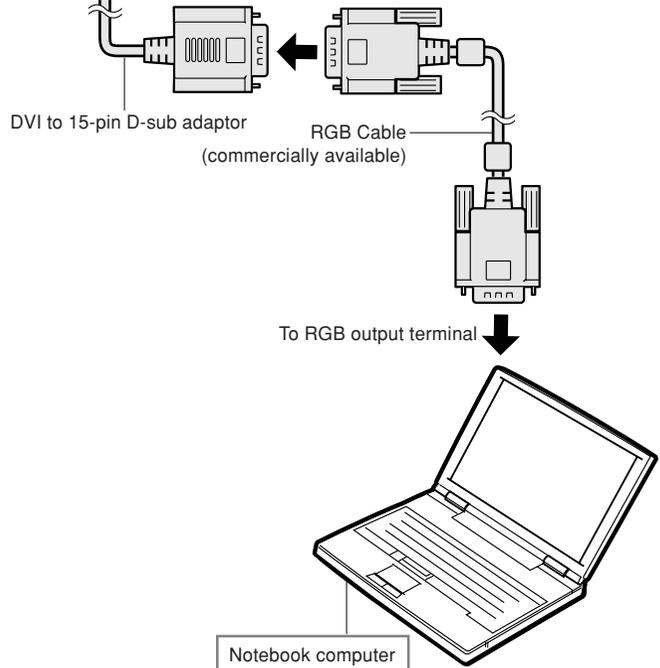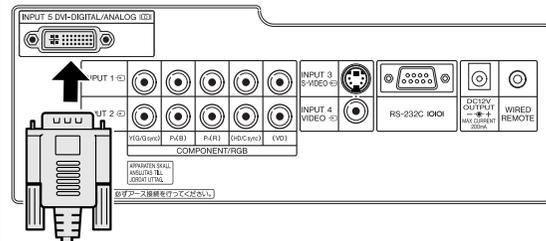
Connecting to a Computer Using a DVI Cable (INPUT 5)

1 **Connect a DVI cable to the projector.**

2 **Connect the above cable to the computer.**

- Secure the connectors by tightening the thumbscrews.

・・・・・・・・・・・・・・・・・・・・・・・・・・・・

✎ Note

- Switch the signal type to either "A. RGB" or "D. PC RGB" depending on whether the computer output signal is analog or digital. See page **69.**
- Before connecting, be sure to unplug the power cord of the projector from the AC outlet and turn off the computer to be connected. After making all connections, turn on the projector and then the computer.
- Be sure that the computer is the last device to be turned on after all the connections are made.

| Optional accessory | DVI cable Type: AN-C3DV (3.0 m) |

To INPUT 5 terminal
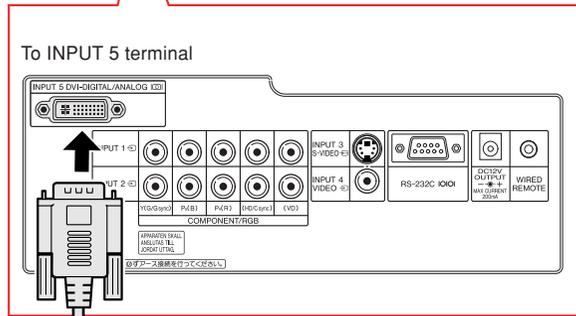
DVI cable (sold separately)
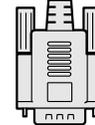
To DVI Digital output terminal
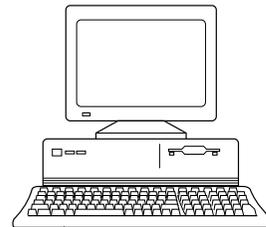
Desktop computer

Connecting the thumbscrew cables

■ Connect the thumbscrew cable making sure that it fits correctly into the terminal. Then, firmly secure the connectors by tightening the screws on both sides of the plug.
■ Do not remove the ferrite core attached to the RGB cable.

Ferrite core
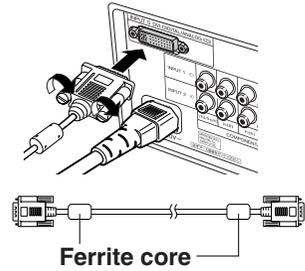
"Plug and Play" function

■ This projector is compatible with VESA-standard DDC 1/DDC 2B. The projector and a VESA DDC compatible computer will communicate their setting requirements, allowing for quick and easy setup.
■ **Before using the "Plug and Play" function, be sure to turn on the projector first and the connected computer last.**

Note

• The DDC "Plug and Play" function of this projector operates only when used in conjunction with a VESA DDC compatible computer.

Controlling the Projector by a Computer

Controlling the Projector Using an RS-232C Cable

When the RS-232C terminal on the projector is connected to a computer with an RS-232C cable (null modem, cross type, commercially available), the computer can be used to control the projector and check the status of the projector. See page 84 for details.

1 **Connect an RS-232C cable to the projector.**

2 **Connect the above cable to the computer.**

- Secure the connectors by tightening the thumbscrews.

✎ Note

- Do not connect or disconnect an RS-232C cable to or from the computer while it is on. This may damage your computer.
- The RS-232C function may not operate if your computer terminal is not correctly set up. Refer to the operation manual of the computer for details.

To RS-232C terminal

RS-232C cable
(commercially available)

To RS-232C terminal

Desktop computer

Using as a Wired Remote Control

Connecting the Remote Control to the Projector

When the remote control cannot be used due to the range or positioning of the projector (rear projection, etc.), connect a ø3.5 mm minijack cable (commercially available or available as Sharp service part QCNWGA038WJPZ) from the WIRED R/C JACK on the top of the remote control to the WIRED REMOTE control input terminal.

To WIRED REMOTE control input terminal

INPUT 5 DVI-DIGITAL/ANALOG

INPUT 1

INPUT 2

Y(G/Gsync)   P(B)   P(R)   (HD/C sync)   (VD)
COMPONENT/RGB

INPUT 3
S-VIDEO

INPUT 4
VIDEO

RS-232C

DC12V
OUTPUT
MAX CURRENT
200mA

APPARATEN SKALL
ANSLUTAS TILL
JORDAT UTTAG.

100-240V~   必ずアース接続を行ってください。

ø3.5 mm minijack cable
(commercially available or
available as Sharp service
part QCNWGA038WJPZ)

To WIRED R/C JACK

WIRED R/C JACK

Remote control

SHARP

Setup

Using the Adjustment Feet

The height of the projector can be adjusted using the adjustment feet when the projector is placed on an uneven surface or when the screen is slanted.
The position of the projected image can be made higher by adjusting the projector when it is in a location lower than the screen.

1 **Press the foot releases and lift the projector to the desired angle.**

2 **Remove your hands from the foot releases. Once the adjustment feet have locked in position, release the projector.**

• If the screen is at an angle, the adjustment feet can be used to adjust the angle of the image.

Foot releases

Adjustment feet

Note

• The projector is adjustable up to approximately 5 degrees from the standard position.
• When the height of the projector is adjusted, the image may become distorted (keystoned), depending on the relative positions of the projector and the screen. See page **38** for details on the keystone correction.

Info

• Do not hold the lens when lifting or lowering the projector.
• When lowering the projector, be careful not to get your finger caught in the area between the adjustment foot and the projector.
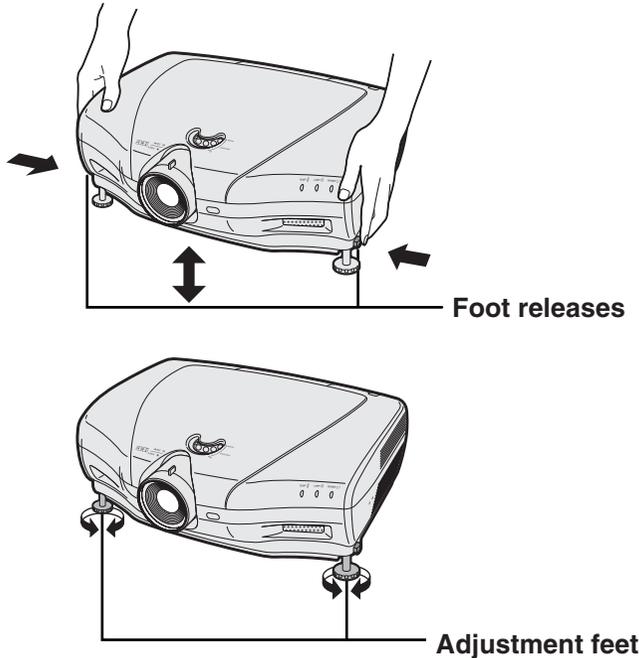
Adjusting the Lens

The image is focused and adjusted to the desired size using the focus ring or zoom knob on the projector.

Focus ring　　**Zoom knob**

1 The focus is adjusted by rotating the focus ring.

Focus ring

2 Zooming is adjusted by moving the zoom knob.

Zoom in

Zoom out

Zoom Knob
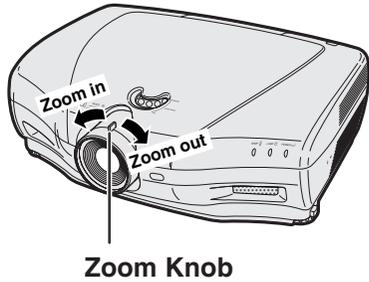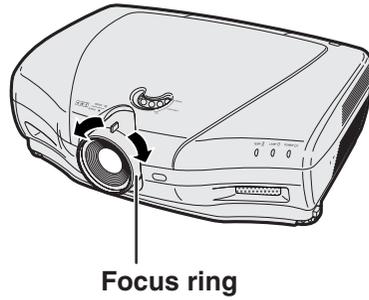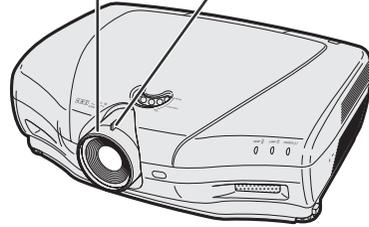
Using the Lens Shift

The height of the projected image can be adjusted within the shift range of the lens by rotating the lens shift dial on the top of the projector.

✎Note

- Do not turn the lens shift dial beyond the upper limit and lower limit positions. This may cause the projector to malfunction.

Lens shift dial

Up

Down
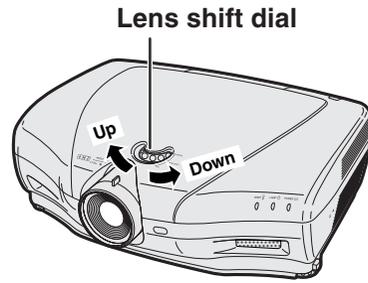
Setting up the Screen
Position the projector perpendicular to the screen with all feet flat and level to achieve an optimal image.

✎ Note
• The projector lens should be centred in the middle of the screen. If the horizontal line passing through the lens centre is not perpendicular to the screen, the image will be distorted, making viewing difficult.
• For optimal image, position the screen so that it is not in direct sunlight or room light. Light falling directly on the screen washes out the colours, making viewing difficult. Close the curtains and dim the lights when setting up the screen in a sunny or bright room.
• A polarizing screen cannot be used with this projector.

Standard Setup (Front Projection)
■ Place the projector at the required distance from the screen according to the desired picture size. (See page **31**.)
Screen size : 254 cm (100 inches)
Aspect ratio : 16:9

Example of Standard Setup	
Side View 90° Audience	• The distance from the screen to the projector may vary depending on the size of the screen. **P.31** • The default setting can be used, when placing the projector in front of the screen. If the projected image is reversed or inverted, readjust the setting to "Front" for "PRJ Mode" in the "Options" menu. **P.73**
Top View 90°	• Place the projector so that an imaginary horizontal line that passes through the centre of the lens is perpendicular to the screen.
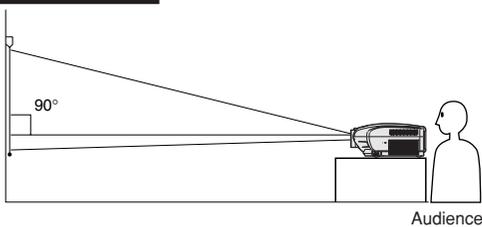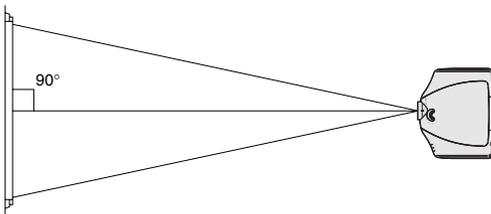
Screen Size and Projection Distance
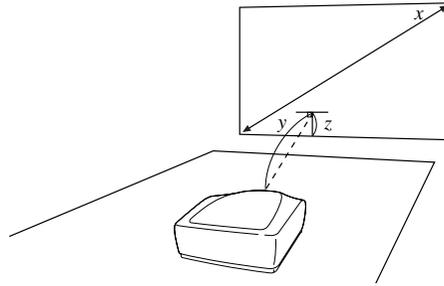
When using a normal screen (4:3)
In case of setting the 16:9 picture to the full horizontal width of the 4:3 screen.

4

3

☐ : Screen area
■ : Picture area
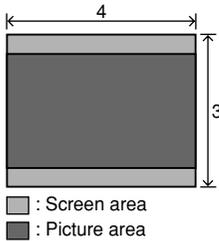
Screen size (4:3)			Projection distance (y)		Distance from the lens centre to the lower edge of the screen (z)	
Diag. (x)	Width	Height	Maximum (y_1)	Minimum (y_2)	Upper (z_1)	Lower (z_2)
250" (635 cm)	508 cm (200")	381 cm (150")	12.6 m (41'4")	9.3 m (30'6")	0 cm (0")	–286 cm (–12'6")
200" (508 cm)	406 cm (160")	305 cm (120")	10.1 m (33')	7.4 m (24'4")	0 cm (0")	–229 cm (–10')
150" (381 cm)	305 cm (120")	229 cm (90")	7.5 m (24'9")	5.6 m (18'3")	0 cm (0")	–171 cm (–7'6")
100" (254 cm)	203 cm (80")	152 cm (60")	5.0 m (16'5")	3.7 m (12'1")	0 cm (0")	–114 cm (–5')
84" (213 cm)	170 cm (67")	127 cm (50")	4.2 m (13'9")	3.1 m (10'2")	0 cm (0")	–96 cm (–4'2")
72" (183 cm)	147 cm (58")	109 cm (43")	3.6 m (11'10")	2.6 m (8'8")	0 cm (0")	–82 cm (–3'7")
60" (152 cm)	122 cm (48")	91 cm (36")	3.0 m (9'10")	2.2 m (7'2")	0 cm (0")	–69 cm (–3')

The formula for screen size and projection distance
y_1 (Max.) = (0.05058x – 0.0447)
y_2 (Min.) = (0.03734x – 0.0447)
z_1 (Upper) = 0
z_2 (Lower) = –0.45x

x : Screen size (diag.)
y : Projection distance
z : Distance from the lens centre to the lower edge of the screen

✎ **Note**

- There is an error of ±3% in the formula above.
- Values with a minus (–) sign indicate the distance of the lens centre below the bottom of the screen.

When using a wide screen (16:9)
In case of displaying the 16:9 picture on the whole of the 16:9 screen.

16

9

■ : Picture area
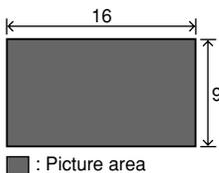
Screen size (16:9)			Projection distance (y)		Distance from the lens centre to the lower edge of the screen (z)	
Diag. (x)	Width	Height	Maximum (y_1)	Minimum (y_2)	Upper (z_1)	Lower (z_2)
300" (762 cm)	663 cm (261")	373 cm (147")	16.5 m (54'1")	12.2 m (39'11")	0 cm (0")	–374 cm (–12'3")
250" (635 cm)	554 cm (218")	312 cm (123")	13.7 m (45'1")	10.1 m (33'3")	0 cm (0")	–311 cm (–10'3")
200" (508 cm)	442 cm (174")	249 cm (98")	11.0 m (36')	8.1 m (26'7")	0 cm (0")	–249 cm (–8'2")
150" (381 cm)	333 cm (131")	188 cm (74")	8.2 m (26'12")	6.1 m (19'11")	0 cm (0")	–187 cm (–6'2")
133" (338 cm)	295 cm (116")	165 cm (65")	7.3 m (23'11")	5.4 m (17'7")	0 cm (0")	–166 cm (–5'5")
106" (269 cm)	234 cm (92")	132 cm (52")	5.8 m (18'11")	4.3 m (13'11")	0 cm (0")	–131 cm (–4'4")
100" (254 cm)	221 cm (87")	125 cm (49")	5.5 m (17'11")	4.0 m (13'2")	0 cm (0")	–125 cm (–4'1")
92" (234 cm)	203 cm (80")	114 cm (45")	5.0 m (16'5")	3.7 m (12'1")	0 cm (0")	–114 cm (–3'9")
84" (213 cm)	185 cm (73")	104 cm (41")	4.6 m (15')	3.4 m (11'1")	0 cm (0")	–105 cm (–3'5")
72" (183 cm)	160 cm (63")	89 cm (35")	3.9 m (12'10")	2.9 m (9'6")	0 cm (0")	–90 cm (–2'11")
60" (152 cm)	132 cm (52")	74 cm (29")	3.3 m (10'8")	2.4 m (7'10")	0 cm (0")	–75 cm (–2'5")
40" (102 cm)	89 cm (35")	51 cm (20")	2.2 m (7'1")	1.6 m (5'2")	0 cm (0")	–50 cm (–1'8")

The formula for screen size and projection distance
y_1 (Max.) = (0.05510x – 0.04593)
y_2 (Min.) = (0.04068x – 0.04369)
z_1 (Upper) = 0
z_2 (Lower) = –0.4904x

x : Screen size (diag.)
y : Projection distance
z : Distance from the lens centre to the lower edge of the screen

✎ **Note**

- There is an error of ± 3% in the formula above.
- Values with a minus (–) sign indicate the distance of the lens centre below the bottom of the screen.

Projecting a Reversed/Inverted Image

Projection from behind the screen

■ Place a translucent screen between the projector and the audience.

■ Reverse the image by setting "Rear" for "PRJ Mode" in the "Options" menu. See page **73** for use of this function.
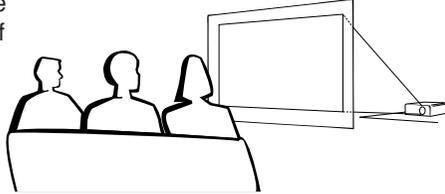
When using the default setting.
▼**On-screen Display**
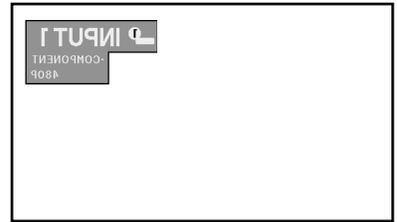
The image is reversed.

Projection using a mirror

■ Place a mirror (normal flat type) in front of the lens.
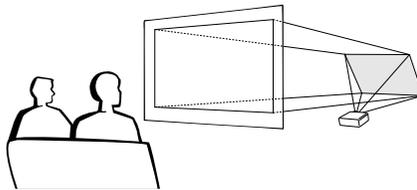
📖 **Info**

• When using a mirror, be sure to carefully position both the projector and the mirror so the light does not shine into the eyes of the audience.

Ceiling-mount setup

■ It is recommended that you use the optional Sharp ceiling-mount bracket for this installation.

■ Before mounting the projector, contact your nearest Sharp Authorised Projector Dealer or Service Centre to obtain the recommended ceiling-mount bracket (sold separately). (AN-TK202 ceiling-mount bracket, AN-TK201 extension tube, AN-NV6T ceiling adaptors for AN-TK202 or AN-TK201.)

■ Be sure to adjust the position of the projector to match the distance (z) from the lens centre position (see page **31**) to the lower edge of the image, when mounting the projector on the ceiling.

■ Invert the image by setting "Ceiling + Front" for "PRJ Mode" in the "Options" menu. See page **73** for use of this function.
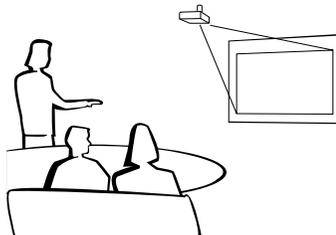
When using the default setting.
▼**On-screen Display**
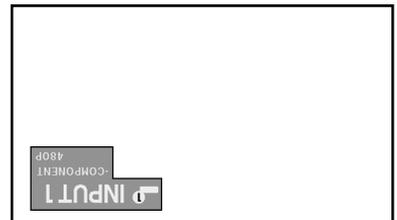
The image is inverted.

Basic Operation
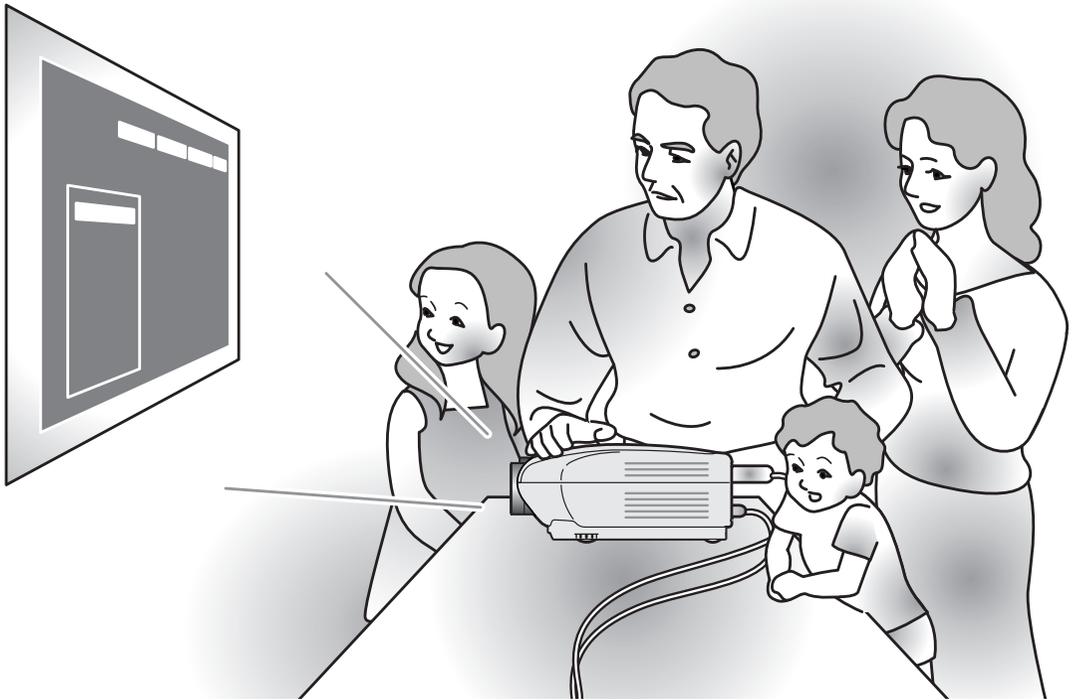
Image Projection

Basic Procedure

Connect the required external equipment to the projector before operating the following procedures.

📖 **Info**

• The language preset at the factory is English. If you want to change the on-screen display to another language, reset the language according to the procedure on page **36**.

1 Plug the power cord into the wall outlet.

• The power indicator illuminates red, and the projector enters standby mode.

2 Press ⓞ on the remote control or ○ on the projector.

• The power indicator illuminates blue. After the lamp indicator illuminates, the projector is ready to start operation.

✏️ **Note**

• The lamp indicator illuminates, indicating the status of the lamp.
 Blue: The lamp is ready.
 Blue blinking: The lamp is warming up.
 Red: The lamp should be replaced.
• If the projector is put into the standby mode and immediately turned on again, the lamp indicator may take some time to illuminate.
• When controlling the projector using RS-232C commands from a computer, wait for at least 30 seconds after the power has been turned on, and then transmit the commands.

Power indicator

Lamp indicator

MENU button

INPUT button

STANDBY button

▼, ▲, ◄, ► buttons

ENTER button

ON button

STANDBY button

ON button

ENTER button

MENU button

▼, ▲, ◄, ► buttons

INPUT buttons

-34
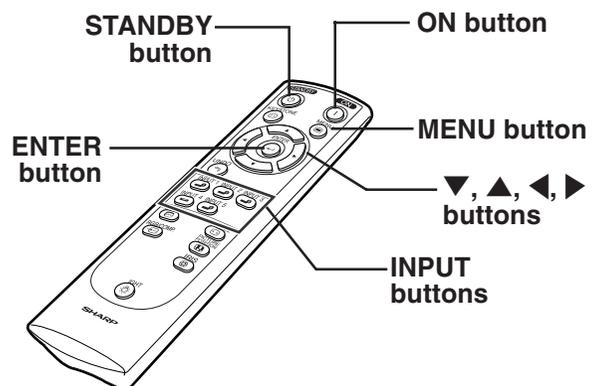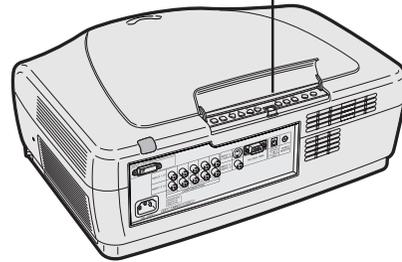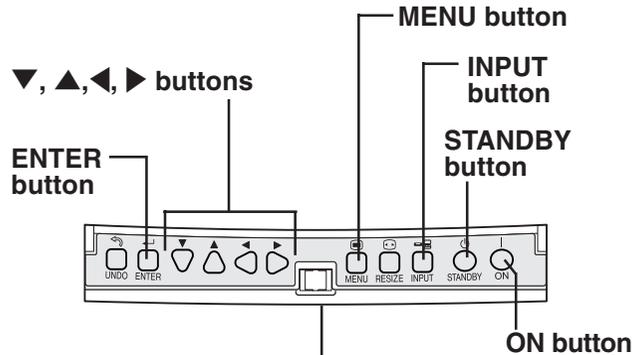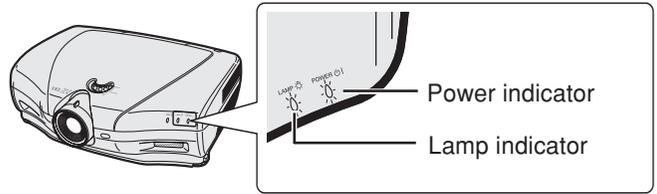
3 **Press** INPUT 1 ⬤, INPUT 2 ⬤, INPUT 3 ⬤, INPUT 4 ⬤ **or** INPUT 5 ⬤ **on the remote control or** ⬤ INPUT **on the projector to select the IN-PUT mode.**

• After pressing ⬤ INPUT once on the projector, use ⬤ INPUT to select the desired input mode.

✎ Note

• When no signal is received, "NO SIGNAL" will be displayed. When a signal that the projector is not pre-set to receive is received, "NOT REG." will be displayed.
• The INPUT mode is not displayed when "OSD display" is set to "Level A" or "Level B". (See page **68**.)

About the INPUT modes

INPUT 1 INPUT 2 (Compo-nent/RGB*)	Used for projecting images from equipment that sends component signals or RGB signals connected to the INPUT 1 or 2 terminals.
INPUT 3 (S-Video)	Used for projecting im-ages from equipment con-nected to the S-VIDEO in-put terminal.
INPUT 4 (Video)	Used for projecting im-ages from equipment connected to the VIDEO input terminal.
INPUT 5 (Digital PC RGB/ Digital PC Component/ Digital Video RGB/Digital Video Component/ Analog RGB/ Analog Component)	Used for projecting im-ages from equipment connected to the DVI in-put terminal.

* Input the RGB signal of the DTV, not the computer.

▼On-screen Display (Example)

INPUT 1 mode

Using RGB*　　　　　▯ INPUT 1
　　　　　　　　　　　　　　·RGB
　　　　　　　　　　　　　　480P

Using Component　　▯ INPUT 1
　　　　　　　　　　　　　·COMPONENT
　　　　　　　　　　　　　　480P

INPUT 2 mode

Using RGB*　　　　　② INPUT 2
　　　　　　　　　　　　　　·RGB
　　　　　　　　　　　　　　480P

Using Component　　② INPUT 2
　　　　　　　　　　　　　·COMPONENT
　　　　　　　　　　　　　　480P

INPUT 3 mode
Using S-Video　　　　Ⓢ INPUT 3
　　　　　　　　　　　　　　NTSC3.58

INPUT 4 mode
Using Video　　　　　▭ INPUT 4
　　　　　　　　　　　　　　NTSC3.58

INPUT 5 mode
Using Analog RGB　　Ⓢ INPUT 5
　　　　　　　　　　　　　·Analog RGB
　　　　　　　　　　　　　　480P
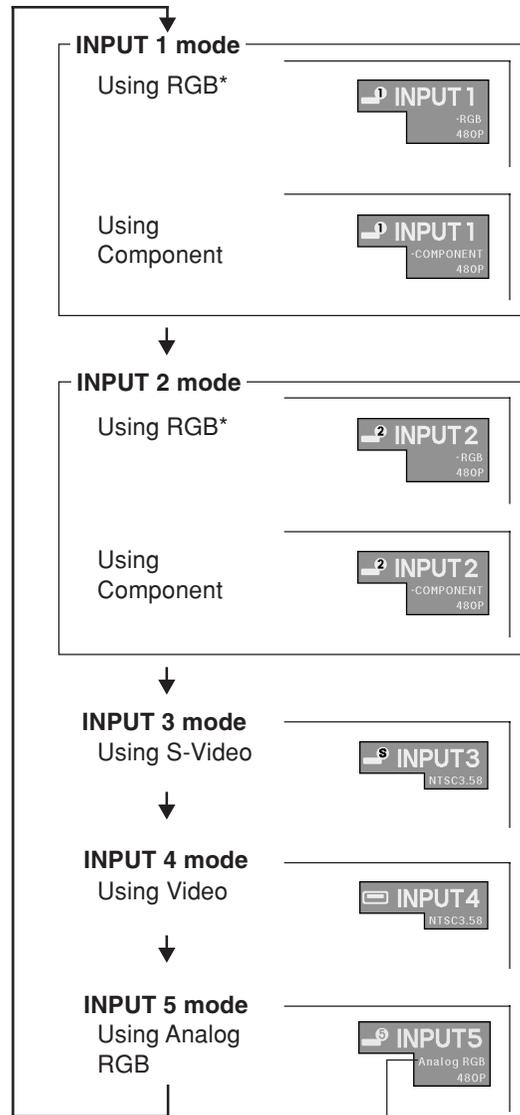
The display varies accord-ing to the "Signal Type" with the INPUT 5. The diagram shown above is the ex-ample of having selected "Analog RGB".

Selecting the On-screen Display Language

• The on-screen display language of the projector can be set to English, German, Spanish, Dutch, French, Italian, Swedish, Portuguese, Chinese, Korean or Japanese.

1 Press ⓘ.
 • The menu will be displayed.

2 Press ◀ or ▶ to select "Language".

3 Press ▼ or ▲ to select the desired language, and then press ⓞ.

4 Press ⓘ.
 • The desired language will be set as the on-screen display.
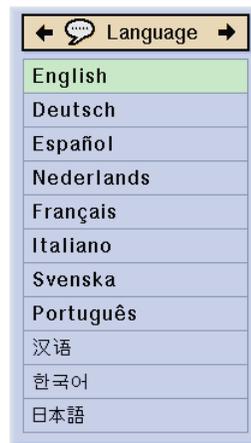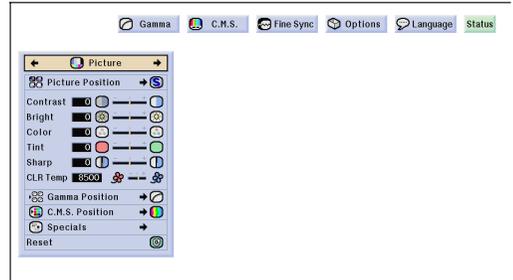
Turning the Power off

1 **Press** ⊙ **on the remote control or** ◯ **on the projector, then press** ⊙ **or** ◯ **again while the confirmation message is displayed, to put the projector into the standby mode.**

✎ Note

- If you accidentally pressed ⊙ and do not want to put the projector into the standby mode, wait until the confirmation message disappears.

2 **Unplug the power cord from the AC outlet after the cooling fan stops.**

📖 Info

- Do not unplug the power cord during projection or cooling fan operation. This can cause damage due to the rise in internal temperature, as the cooling fan also stops.
- When connected to equipment such as an amplifier, be sure to turn off the power to the equipment connected first and then to the projector.

STANDBY button

ENTER button

MENU button

▼, ▲, ◄, ► buttons
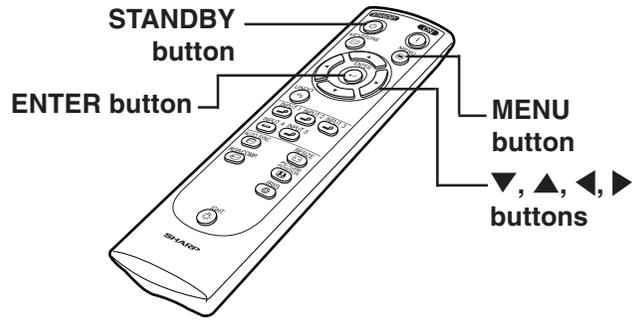
⏻ Enter STANDBY mode?

Yes: Press Again   No: Please Wait

Basic Operation

Keystone Correction and Vertical Size Adjustment

Correcting Trapezoidal Distortion and Adjusting the Vertical Size of the Picture

This function allows for Keystone (On-screen Trapezoidal Distortion) Correction and the adjustment of the vertical size of the picture.

KEYSTONE button
ENTER button
UNDO button
▼, ▲, ◀, ▶ buttons

✎ Note

- When the image is projected either from top or from bottom toward the screen at an angle, the image becomes distorted trapezoidally.
  The function for correcting trapezoidal distortion is called Keystone Correction.
- The Keystone Correction can be adjusted up to angle of approximately ±20 degrees.
- There are some input signal in which "KEYSTONE" does not work.
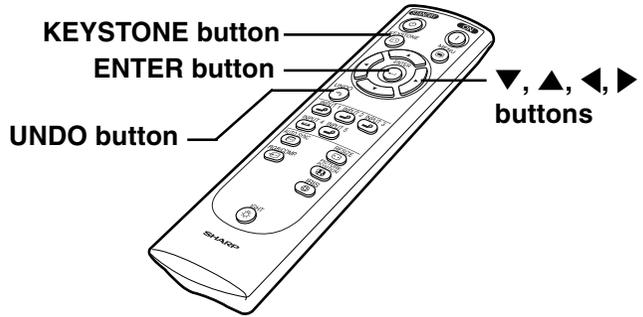
1 Press ⓒ KEYSTONE.

- Each time ⓒ KEYSTONE is pressed, the settings toggles as shown on the right.

2 Press ▼, ▲, ◀ and ▶ to adjust the Keystone correction.

- If you want to make more detailed corrections, press ⓒ ENTER to display the test pattern, and then press ▼, ▲, ◀ and ▶ to make the adjustments.

✎ Note

- Since the trapezoidal distortion of the image can be corrected up to an angle of approximately ±20 degrees, the actual screen can be diagonally set up to that angle as well.
- Press ⓒ UNDO to cancel Keystone Correction.
- Straight lines or the edges of images may appear jagged while adjusting the image.

Normal screen   Keystone Correction screen   * Vertical size adjustment screen

* "V-SIZE" is not displayed when the value of "KEYSTONE" is "0".

Compresses upper side.

Compresses lower side.

Test pattern
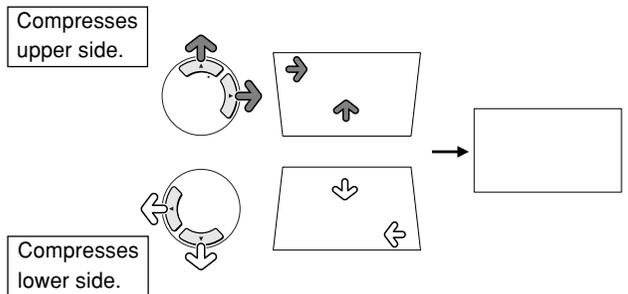
3 When adjusting vertical size, pressing $\overset{\text{KEYSTONE}}{\underset{\odot}{}}$ again displays the vertical size adjustment menu.

4 Press ▼and ▲ to adjust the vertical size of the picture, and press $\overset{\text{ENTER}}{\underset{\odot}{}}$.
- See below for details about the vertical size screen.

Vertical Size Adjustment

The image aspect ratio may change when the lens shift function is used in combination with the Keystone Correction function. In this case, adjust the aspect ratio using the vertical size adjustment.

UNDO button
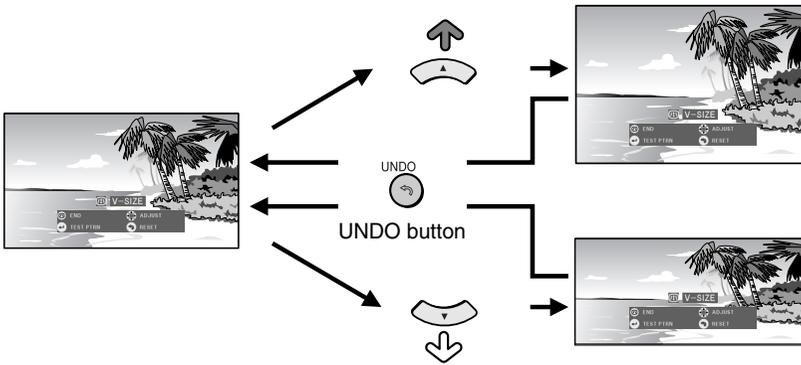
Pressing ▲ increases the vertical length of the image. Press to reset the image.

Pressing ▼ decreases the vertical length of the image. Press to reset the image.

Basic Operation

Menu Bar Items

This list shows the items that can be set in the projector.

■ INPUT 1 / 2 / 5 Mode

Main menu

Picture
Page **46**

Picture Position	Standard / Natural / Dynamic / Custom 1 / Custom 2 / INPUT1/2/5 Position
Contrast	−30 ↔ +30
Bright	−30 ↔ +30
Color	−30 ↔ +30
Tint	−30 ↔ +30
Sharp	−30 ↔ +30
CLR Temp	5000 ↔ 11000
Gamma Position	Standard / Black Detail / Dynamic Gamma / Custom 1 / Custom 2 / SVM Gamma
C.M.S. Position	Standard / Film Tone / Custom 1 / Custom 2
Specials	IP Mode [2D/3D/Film] / White Emph [ON/OFF] / DNR [OFF/Level 1-3] / DFC [OFF/Level 1-3]
Reset	

Gamma
Page **52**

Gamma Position	Standard / Black Detail / Dynamic Gamma / Custom 1 / Custom 2 / SVM Gamma
R-Gamma	−30 ↔ +30
G-Gamma	−30 ↔ +30
B-Gamma	−30 ↔ +30
R-Gain	−30 ↔ +30
G-Gain	−30 ↔ +30
B-Gain	−30 ↔ +30
R-Offset	−30 ↔ +30
G-Offset	−30 ↔ +30
B-Offset	−30 ↔ +30
Reset	

C.M.S.
Page **54**

C.M.S. Position	Standard / Film Tone / Custom 1 / Custom 2
Target	[R] Red / [Y] Yellow / [G] Green / [C] Cyan / [B] Blue / [M] Magenta
Lightness	−30 ↔ +30
Chroma	−30 ↔ +30
Hue	−30 ↔ +30
Reset (This Color)	
Reset (All Colors)	
View Settings	

Main menu

Fine Sync
Page **57**

Clock	−150 ↔ +150
Phase	−60 ↔ +60
H-Pos	−150 ↔ +150
V-Pos	−60 ↔ +60
Reset	

Save Setting

	Resolution	Vert Freq
1	1024 × 768	60 Hz
2	800 × 600	75 Hz
:		
7		

Select Setting

	Resolution	Vert Freq
1	1024 × 768	60 Hz
2	800 × 600	75 Hz
:		
7		

Special Modes

	Resolution
1	1024 × 864
2	1152 × 864
3	1152 × 870
4	1152 × 882
7	

Signal Info

Resolution	1024 × 768
Hor Freq	48.4 KHz
Vert Freq	60 Hz

| Auto Sync | OFF / Normal / High Speed |
| Auto Sync Disp [ON/OFF] | |

Options
Page **66**

Digi. Shift	−30 ↔ +30
Subtitle	−30 ↔ +30
Reset	
LED [ON/OFF]	
Lamp Timer	
OSD Display	Normal / Level A / Level B
* Signal Type	RGB / Component
Background	Blue / None
Economy Mode	Power Save [ON/OFF] / RS-232C Port [ON/OFF] / Auto Power Off [ON/OFF]
RS-232C	9600 bps / 38400 bps / 115200 bps
PRJ Mode	Front / Ceiling + Front / Rear / Ceiling + Rear

Language
Page **36**

English
Deutsch
Español
Nederlands
Français
Italiano
Svenska
Português
汉语
한국어
日本語

Status
Page **74**

*In INPUT 5, the items in "Signal Type" are "D. PC RGB", "D. PC Comp.", "D. Video RGB", "D. Video Comp." "A. RGB" and "A. Comp.".

✎ Note

- The resolution, vertical frequency and horizontal frequency figures displayed above are for example purposes only.
- Picture adjustment settings differ depending on the type of input signal.

■ INPUT 3 / 4 Mode

Main menu		**Sub menu**
Picture Page **46**	Picture Position	Standard Natural Dynamic Custom 1 Custom 2 INPUT3/4 Position
	Contrast −30 ↔ +30	
	Bright −30 ↔ +30	
	Color −30 ↔ +30	
	Tint −30 ↔ +30	
	Sharp −30 ↔ +30	
	CLR Temp 5000 ↔11000	
	Gamma Position	Standard Black Detail Dynamic Gamma Custom 1 Custom 2 SVM Gamma
	C.M.S. Position	Standard Film Tone Custom 1 Custom 2
	Specials	IP Mode [2D/3D/Film] White Emph [ON/OFF] DNR [OFF/Level 1-3] DFC [OFF/Level 1-3]
	Reset	

Main menu		**Sub menu**
Gamma Page **52**	Gamma Position	Standard Black Detail Dynamic Gamma Custom 1 Custom 2 SVM Gamma
	R-Gamma −30 ↔ +30	
	G-Gamma −30 ↔ +30	
	B-Gamma −30 ↔ +30	
	R-Gain −30 ↔ +30	
	G-Gain −30 ↔ +30	
	B-Gain −30 ↔ +30	
	R-Offset −30 ↔ +30	
	G-Offset −30 ↔ +30	
	B-Offset −30 ↔ +30	
	Reset	

Main menu		**Sub menu**
C.M.S. Page **54**	C.M.S. Position	Standard Film Tone Custom 1 Custom 2
	Target	[R] Red [Y] Yellow [G] Green [C] Cyan [B] Blue [M] Magenta
	Lightness −30 ↔ +30	
	Chroma −30 ↔ +30	
	Hue −30 ↔ +30	
	Reset (This Color)	
	Reset (All Colors)	
	View Settings	

Main menu		**Sub menu**
Options Page **66**	Digi. Shift −30 ↔ +30	
	Subtitle −30 ↔ +30	
	Reset	
	LED [ON/OFF]	
	Lamp Timer	
	OSD Display	Normal Level A Level B
	Video System	Auto PAL (50/60Hz) SECAM NTSC4.43 NTSC3.58 PAL-M PAL-N
	Background	Blue None
	Economy Mode	Power Save [ON/OFF] RS-232C Port [ON/OFF] Auto Power Off [ON/OFF]
	RS-232C	9600 bps 38400 bps 115200 bps
	PRJ Mode	Front Ceiling + Front Rear Ceiling + Rear

Main menu		
Language Page **36**	English Deutsch Español Nederlands Français Italiano Svenska Português 汉语 한국어 日本語	

Main menu	
Status Page **74**	

Basic Operation

Using the Menu Screen

This projector has two sets of menu screens that allow you to adjust the image and various projector settings.
You can operate the menus from the projector or remote control using the following procedure.

**Menu screen for INPUT 1,
INPUT 2 or INPUT 5 Mode**

Gamma C.M.S. Fine Sync Options Language Status

Picture
Picture Position
Contrast
Bright
Color
Tint
Sharp
CLR Temp
Gamma Position
C.M.S. Position
Specials
Reset

**Menu Bar
(Main Menu)**
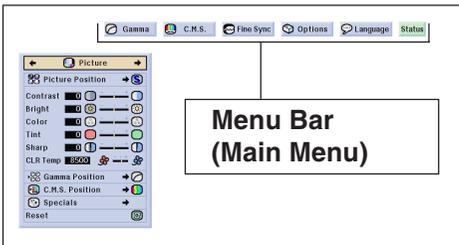
**Menu screen for INPUT 3 or
INPUT 4 Mode**

Gamma C.M.S. Options Language Status

Picture
Picture Position
Contrast
Bright
Color
Tint
Sharp
CLR Temp
Gamma Position
C.M.S. Position
Specials
Reset

**Menu Bar
(Main Menu)**
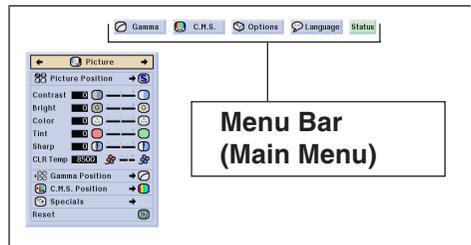
Menu Selections
(Adjustments)

1 **Press** ⊙.

• The menu screen is displayed.

✎ Note

• The "Picture" menu screen for the selected input mode is displayed.
• The on-screen display shown on the lower right is displayed when the IN-PUT 1, 2 or 5 mode is selected.

**▼, ▲, ◀, ▶
buttons**

ENTER button
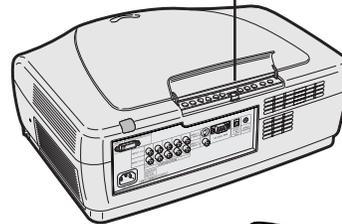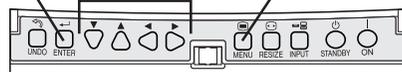
MENU button

UNDO ENTER MENU RESIZE INPUT STANDBY ON

**ENTER
button**

MENU button

**▼, ▲, ◀, ▶
buttons**

▼Menu Screen

Gamma C.M.S. Fine Sync Options Language Status

Picture
Picture Position
Contrast
Bright
Color
Tint
Sharp
CLR Temp
Gamma Position
C.M.S. Position
Specials
Reset

END SELECT
ENTER ADJUST

2 Press ◀ or ▶ to select the menu you want to adjust.

✎ **Note**

- For details on the menus, see the tree charts on pages **40** and **41**.

3 Press ▼ or ▲ to select the item you want to adjust.

✎ **Note**

- To display a single adjustment item, press ⬡ after selecting the item. Only the menu bar and the selected adjustment item will be displayed. Then if you press ▼ or ▲, the following item ("Bright" after "Contrast") will be displayed.

ENTER
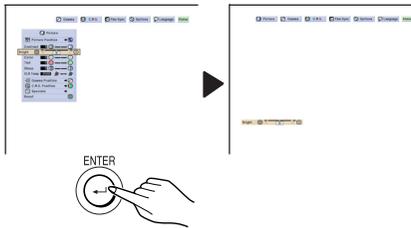
- Press ⮌ to return to the previous screen.

4 Press ◀ or ▶ to adjust the item selected.

- The adjustment is stored.

5 Press ⬛.

- The menu screen will disappear.
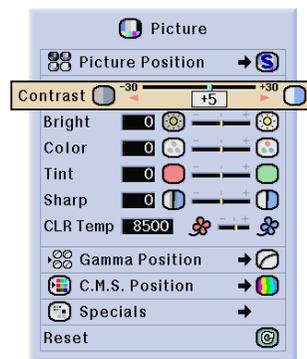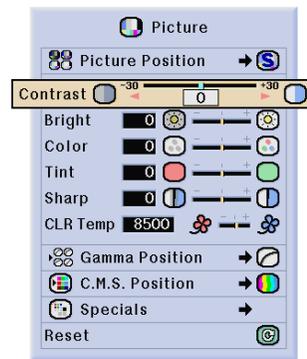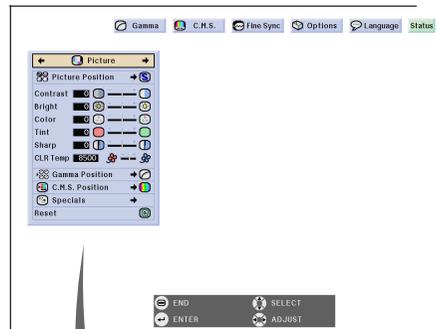
Menu Selections (Settings)

1 Press ⊙.
- The menu screen is displayed.

✎ **Note**
- The "Picture" menu screen for the selected input mode is displayed.
- The on-screen displays shown on the lower right are displayed when INPUT 1, 2 or 5 mode is selected.

2 Press ◀ or ▶ to select the menu you want to adjust.

✎ **Note**
- For details on the menus, see the tree charts on pages **40** and **41**.

3 Press ▼ or ▲ to select the item you want to set.

✎ **Note**
- Press ⊙ to return to the previous screen.
- In some menus, select the icon using "➡".

▼, ▲, ◀, ▶ buttons

ENTER button   MENU button
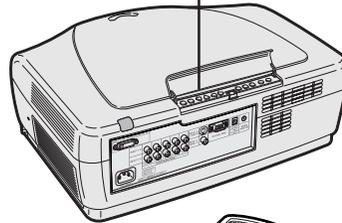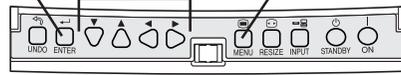
ENTER button   MENU button

▼, ▲, ◀, ▶ buttons
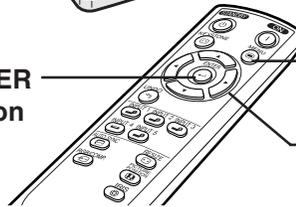
▼ **Menu screen**
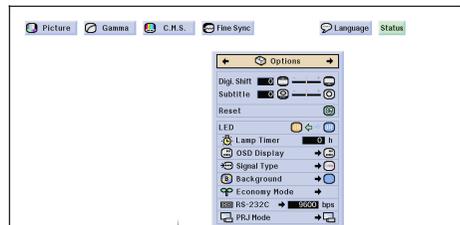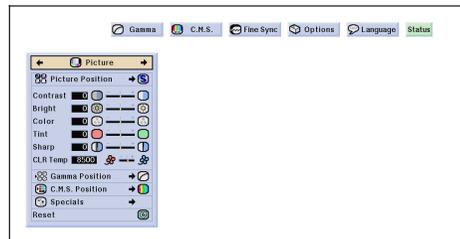
Sub menu

4 Press ▶.

- The cursor shifts to the sub menu.
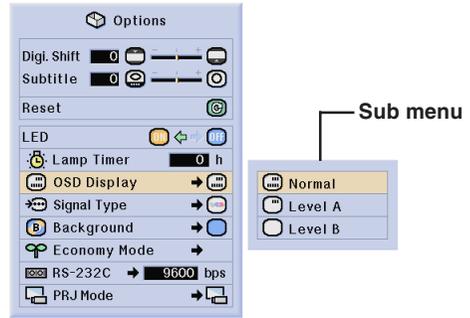
Sub menu

5 Press ▼ or ▲ to select the setting of the item displayed in the sub menu.
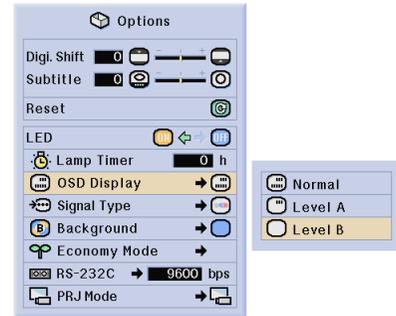
6 Press ⊙.

- The item selected is set.

✎ Note

- Some adjustment items will display a confirmation message.
  When setting an item, press ◀ or ▶ to select "Yes" or "OK" and then press ⊙.
- Use ⊙ to select "ON" or "OFF" for the item of "Economy Mode".
- Use ⊙ to select setting for the item of "Specials" in the "Picture" menu.

7 Press ⊙.

- The menu will disappear.

Basic Operation

Adjusting the Picture

You can adjust the projector's picture to your preferences with the following picture settings.

🔲 Picture   ◔ Gamma   🔲 C.M.S.   〰 Fine Sync   ◇ Options   💬 Language   Status

Selecting the Picture Position

This function allows you to select the picture position in accordance with brightness of the room or content of the software to be played. There are three preset positions and three positions for custom settings.

In all picture positions, items on the "Picture" menu can be adjusted and saved. When saving, select a picture position before setting on the "Picture" menu.

Select "Picture Position" in the "Picture" menu on the menu screen.
→For operating the menu screen, see pages 42 to 45.
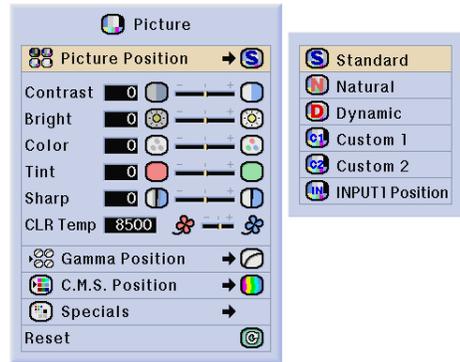
Selected Position	Description
Standard	Sharp default setting
Natural	A balanced colour image is obtained.
Dynamic	A vivid image is obtained.
Custom 1	Allows you to store the picture adjustment
Custom 2	settings to your preference.
INPUT1 Position to INPUT5 Position	Picture adjustment settings can be stored for each input mode.

✎ **Note**

• The picture position can be selected directly by pressing 📷. The position changes in order each time 📷 is pressed.

Picture

🔲 Picture Position	→ Ⓢ
Contrast	0
Bright	0
Color	0
Tint	0
Sharp	0
CLR Temp	8500
Gamma Position	→
C.M.S. Position	→
Specials	→
Reset	©

Ⓢ Standard
Ⓝ Natural
Ⓓ Dynamic
C1 Custom 1
C2 Custom 2
IN INPUT1 Position
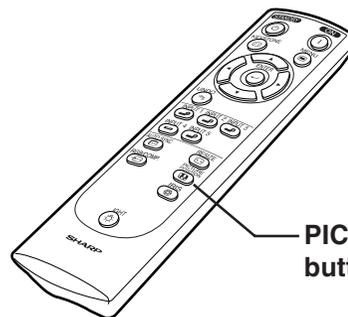
PICTURE POSITION button

Adjusting Image Preferences

Adjust the "Picture" menu on the menu screen.
→For operating the menu screen, see pages 42 to 45.

Selected Item	Description	◀ button	▶ button
Contrast	For adjusting the contrast level	For less contrast	For more contrast
Bright	For adjusting the brightness of an image	For less brightness	For more brightness
Color	For adjusting the colour intensity of an image	For less colour intensity	For more colour intensity
Tint	For adjusting the tones of an image	Skin tones become purplish	Skin tones become greenish
Sharp	For making sharper or softer the contour of an image	For less sharpness	For more sharpness
CLR Temp	For adjusting the colour temperature of an image	Decreases colour temperature for warmer, reddish, incandescent-like images.	Increases colour temperature for cooler, bluish, fluorescent-like images.

✎ **Note**

- Picture adjustment settings differ depending on the type of input signal.
- Some items may not be adjustable depending on the combination of the INPUT mode and "Signal Type" setting.

Selecting the Gamma Position

This function allows you to select the desired gamma position.

Select "Gamma Position" in the "Picture" menu on the menu screen.
→For operating the menu screen, see pages 42 to 45.

✎ **Note**

- Gamma can be adjusted in greater detail with "Gamma" on the menu screen. See page **52** for details.
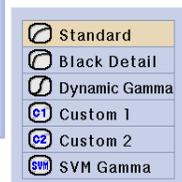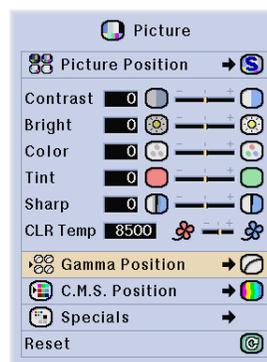
Adjusting the Picture

Selecting the C.M.S. Position

This function allows you to select the desired colour reproduction mode.

Select "C.M.S. Position" in the "Picture" menu on the menu screen.
→**For operating the menu screen, see pages 42 to 45.**

✎ Note

• Colour can be adjusted in greater detail with "C.M.S." on the menu screen. See page **54** for details.

Special Settings

Select "Specials" in the "Picture" menu on the menu screen.
→**For operating the menu screen, see pages 42 to 45.**

Selected Item	Description
IP Mode	For selecting the pro-gressive display of a video signal (Page **49**)
White Emph	For emphasising the contrast (Page **50**)
DNR	For reducing image noise (Page **50**)
DFC	For emphasising outlines in the image (Page **51**)
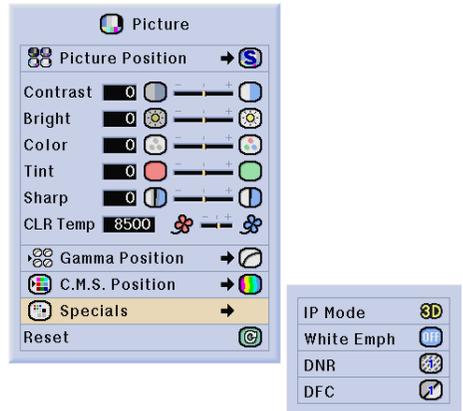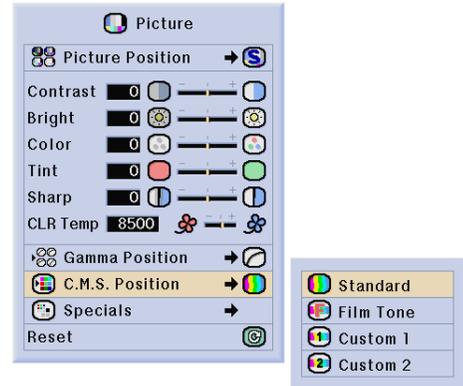
IP Mode

This function allows you to select the progressive display of a video signal. The progressive display projects a smoother video image.

Select "IP Mode" in the "Specials" menu on the "Picture" menu screen.

- "IP Mode" is switched by pressing $\overset{\text{ENTER}}{\odot}$.

→**For operating the menu screen, see pages 42 to 45.**

Selected Item	Description
2D (2D Progressive)	Useful to display fast-moving images such as sports and action films. This mode optimizes the image in a displayed frame.
3D (3D Progressive)	Useful to display relatively slow-moving images such as drama and documentary more clearly. This mode optimizes the image by estimating the movement of a number of preceding and succeeding frames.
(Film Mode)	Reproduces the image of film source* clearly. Displays the optimized image of film transformed with three-two pull down (NTSC and PAL60Hz) or two-two pull down (PAL50Hz and SECAM) enhancement to progressive mode images.

* The film source is a digital video recording with the original encoded as is at 24 frames/second. The projector can convert this film source to progressive video at 60 frames/second with NTSC and PAL60Hz or at 50 frames/second with PAL50Hz and SECAM to play back a high-definition image.

✎ Note

- When using progressive inputs, inputs are directly displayed so that 2D Progressive, 3D Progressive and Film Mode cannot be selected. These modes can be selected in interlace signals other than 1080I.
- In NTSC or PAL60Hz, even if the 3D Progressive mode has been set, the three-two pull down enhancement will be enabled automatically when the film source has been entered.
- In PAL50Hz or SECAM, the two-two pull down enhancement will be enabled only in the Film Mode, when the film source has been entered.
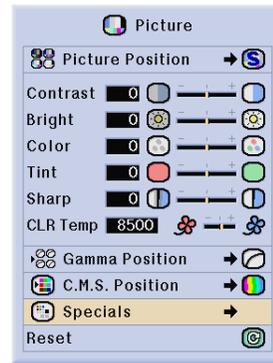
Emphasising the Contrast

This function emphasises the bright portions of images to obtain a higher contrast image.

Select "White Emph" in the "Specials" menu on the "Picture" menu screen.

• "White Emph" is switched "ON" and "OFF" by pressing ⊙ENTER.

→**For operating the menu screen, see pages 42 to 45.**

Selected Item	Description
(ON)	Emphasises the bright portions of images.
(OFF)	Disables "White Emph".

Reducing Image Noise (DNR)

Digital Noise Reduction (DNR) provides high quality images with minimal dot crawl and cross colour noise.

Select "DNR" in the "Specials" menu on the "Picture" menu screen.

• "DNR" is switched by pressing ⊙ENTER.

→**For operating the menu screen, see pages 42 to 45.**

Selected Item	Description
(OFF)	Disables "DNR".
(Level 1)	Set a level so as to view a clearer picture.
(Level 2)	
(Level 3)	

✎ **Note**

Make sure to set DNR to "OFF" in the following cases:
• When the image is blurry.
• When the contours and colours of moving images drag.
• When TV broadcasts with weak signals are projected.

📙 **Info**

• This function is available with INPUT 1, 2 (480I, 480P, 576I and 576P signals) and INPUT 3, 4 (all signals).
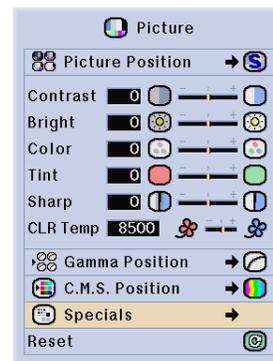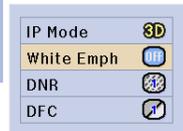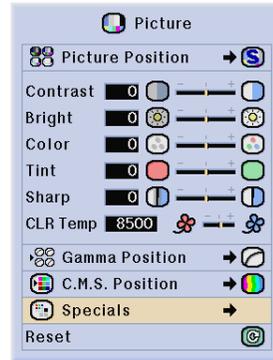
Emphasising Outlines in the Image (DFC)

This function allows you to select features for outlines in the image.

Select "DFC" in the "Specials" on the "Picture" menu screen.
● "DFC" is switched by pressing ⊙.
→**For operating the menu screen, see pages 42 to 45.**

Selected Item	Description
(OFF)	Disables "DFC".
(Level 1)	Emphasise outlines a little
(Level 2)	
(Level 3)	Emphasise outlines most
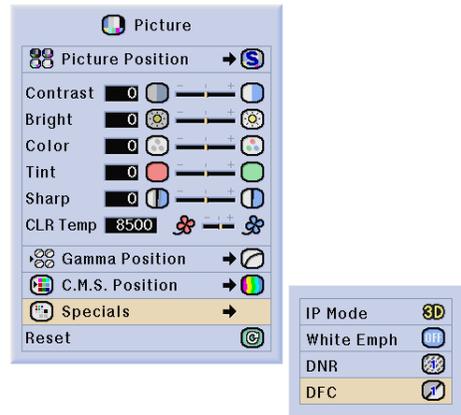
Resetting All Adjustment Items

This function allows you to reset all adjustment items to the default setting.

Select "Reset" in the "Picture" menu on the menu screen and press ⊙.
→**For operating the menu screen, see pages 42 to 45.**

Adjusting the Gamma

Use this function to select the gamma position and adjust the gamma curve for finer image adjustment.

| Picture | Gamma | C.M.S. | Fine Sync | Options | Language | Status |

Selecting the Gamma Position

Select "Gamma Position" in the "Gamma" menu on the menu screen.
→For operating the menu screen, see pages 42 to 45.

Selected Item	Description
Standard	Sharp default setting
Black Detail	Gives greater depth to darker portions of image.
Dynamic Gamma	A strong, clearly distinguishable image is obtained
Custom 1–2	Allows you to adjust the gamma curve for each of RGB.
SVM Gamma	Allows you to adjust gamma value using SharpVision Manager Software.
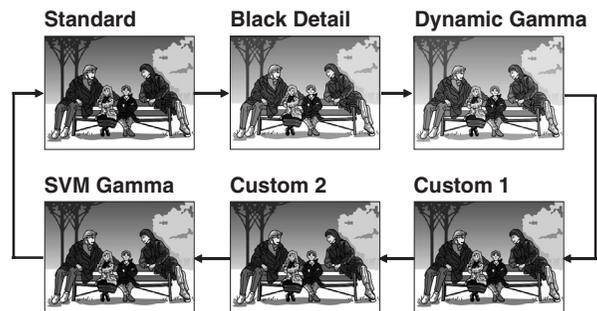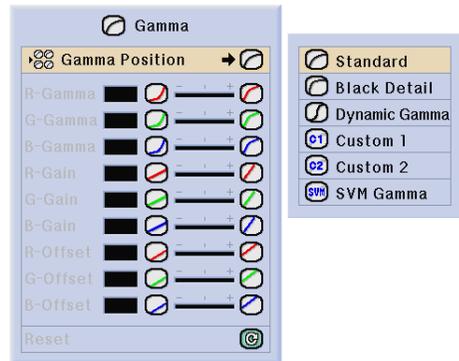
✎ Note

- The gamma position you set in this menu can be selected in the "Gamma Position" in the "Picture" menu.
- Select "Custom 1" or "Custom 2" to make the more detailed gamma setting.
- For selecting "SVM Gamma", refer to the SharpVison Manager operation manual (supplied).

Standard   **Black Detail**   **Dynamic Gamma**

SVM Gamma   **Custom 2**   **Custom 1**

Adjusting the Gamma

Adjust the gamma curve to suit your preferences. These gamma values can be adjusted only when the gamma position is set to "Custom 1" or "Custom 2".

Select the gamma item in the "Gamma" menu on the menu screen.
→**For operating the menu screen, see pages 42 to 45.**
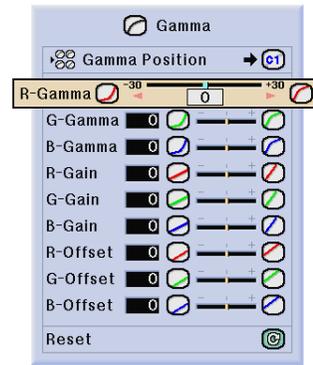
✎ **Note**

• To reset all adjustment items, select "Reset" and press ⊙.

Selected Item	Description	◀ button	▶ button
R-Gamma (Red Gamma)	For adjusting the display characteristic of red colour	For giving greater depth to brighter portion of image in red colour	For giving greater depth to darker portion of image in red colour
G-Gamma (Green Gamma)	For adjusting the display characteristic of green colour	For giving greater depth to brighter portion of image in green colour	For giving greater depth to darker portion of image in green colour
B-Gamma (Blue Gamma)	For adjusting the display characteristic of blue colour	For giving greater depth to brighter portion of image in blue colour	For giving greater depth to darker portion of image in blue colour
R-Gain (Red Gain)	For adjusting the contrast level of red colour	For less contrast in red colour	For more contrast in red colour
G-Gain (Green Gain)	For adjusting the contrast level of green colour	For less contrast in green colour	For more contrast in green colour
B-Gain (Blue Gain)	For adjusting the contrast level of blue colour	For less contrast in blue colour	For more contrast in blue colour
R-Offset (Red Offset)	For adjusting the brightness level of red colour	For less brightness in red colour	For more brightness in red colour
G-Offset (Green Offset)	For adjusting the brightness level of green colour	For less brightness in green colour	For more brightness in green colour
B-Offset (Blue Offset)	For adjusting the brightness level of blue colour	For less brightness in blue colour	For more brightness in blue colour

Colour Management System (C. M. S.)

This function allows you to individually adjust the display characteristics of six colours (R: Red, Y: Yellow, G: Green, C: Cyan, B: Blue, M: Magenta).

| Picture | Gamma | C.M.S. | Fine Sync | Options | Language | Status |

Selecting the C.M.S. Position

Select "C.M.S. Position" in the "C.M.S." menu on the menu screen.

→**For operating the menu screen, see pages 42 to 45.**
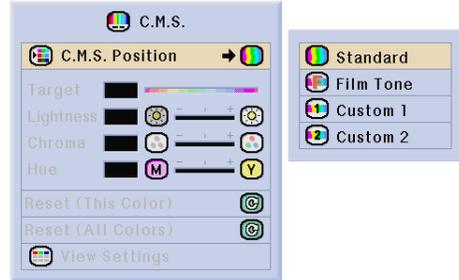
Selected Item	Description
Standard	Sharp default setting
Film Tone	A balanced colour image is obtained.
Custom 1-2	"Lightness", "Chroma" and "Hue" can be adjusted for each of the six colours.

✎ Note

• If "Standard" is selected for "C.M.S. Position", other items (e.g. Target) cannot be adjusted.

Selecting the Target Colour

Select "Target" in the "C.M.S." menu on the menu screen.

→**For operating the menu screen, see pages 42 to 45.**
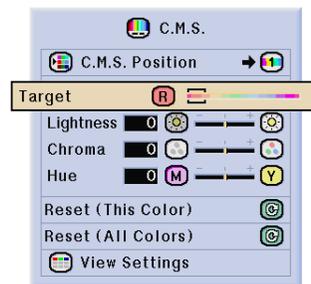
R	Red	C	Cyan
Y	Yellow	B	Blue
G	Green	M	Magenta

Setting the Brightness of the Target Colour

Select "Lightness" in the "C.M.S." menu on the menu screen.
→For operating the menu screen, see pages 42 to 45.

Setting the Chromatic Value of the Target Colour

Select "Chroma" in the "C.M.S." menu on the menu screen.
→For operating the menu screen, see pages 42 to 45.
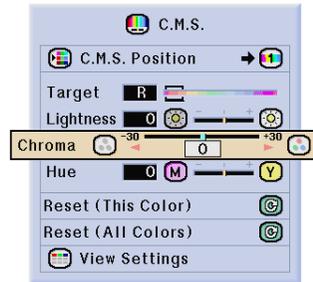
Setting the Hue of the Target Colour

Select "Hue" in the "C.M.S." menu on the menu screen.
→For operating the menu screen, see pages 42 to 45.

Colour Management System (C.M.S.)
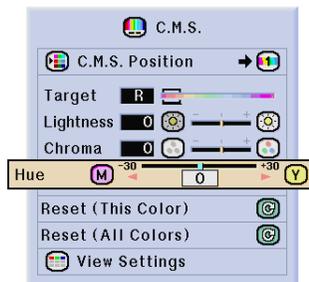
Resetting User-Defined Colour Settings

Select "Reset (This Color)" or "Reset (All Colors)" in the "C.M.S." menu on the menu screen.
→For operating the menu screen, see pages 42 to 45.
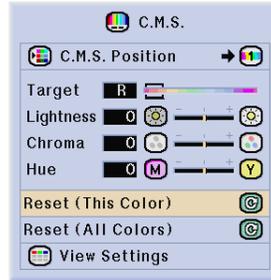
Selected Item	Description
Reset (This Colour)	"Lightness", "Chroma" and "Hue" of the colour selected for "Target" are reset to the default setting.
Reset (All Colours)	"Lightness", "Chroma" and "Hue" of all colours are reset to the default setting.

Overview of All Colour Settings

Select "View Settings" in the "C.M.S." menu on the menu screen.
→For operating the menu screen, see pages 42 to 45.
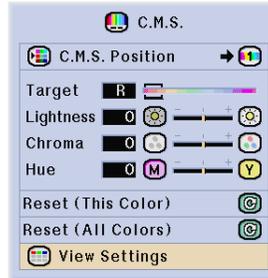
Adjusting Computer Images

Use the Fine Sync function in case of irregularities such as vertical stripes or flickering in portions of the screen.

🖼 Picture   ⊘ Gamma   🔆 C.M.S.   〰 Fine Sync   ◈ Options   💬 Language   Status

When Auto Sync is OFF

When "Auto Sync" is "OFF", interference such as flickering or vertical stripes may occur if displaying tiling or vertical stripes. Should this occur, adjust "Clock", "Phase", "H-Pos" and "V-Pos" for obtaining an optimum image.

Select "Clock", "Phase", "H-Pos" or "V-Pos" in the "Fine Sync" menu on the menu screen.
→For operating the menu screen, see pages 42 to 45.

Selected Item	Description
Clock	Adjusts vertical noise.
Phase	Adjusts horizontal noise (similar to tracking on your VCR).
H-Pos	Centres the on-screen image by moving it to the left or right.
V-Pos	Centres the on-screen image by moving it up or down.

✎ Note

• Computer image adjustments can be made easily by pressing AUTO SYNC. See page **59** for details.
• To reset all adjustment items, select "Reset" and press ⊙ENTER.

Saving Adjustment Settings

This projector allows you to store up to seven adjustment settings for use with various computers.

Select "Save Setting" in the "Fine Sync" menu on the menu screen.
→For operating the menu screen, see pages 42 to 45.

Basic Operation
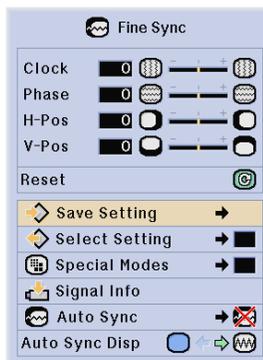
Adjusting Computer Images

Selecting Adjustment Settings

Adjustment settings stored in the projector can be easily accessed.

Select "Select Setting" in the "Fine Sync" menu on the menu screen.
→For operating the menu screen, see pages 42 to 45.

✎Note

- If a memory position has not been set, a resolution and frequency setting will not be displayed.
- When selecting a stored adjustment setting with "Select Setting", you can set the projector in the stored adjustments.
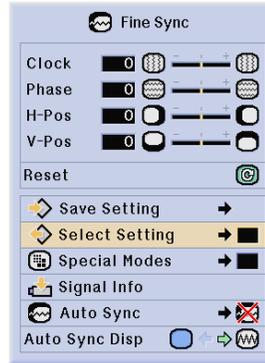
Special Mode Settings

Ordinarily, the type of input signal is detected and the correct resolution mode is automatically selected. However, for some signals, the optimal resolution mode in "Special Modes" on the "Fine Sync" menu screen may need to be selected to match the computer display mode.

Set the resolution by selecting "Special Modes" in the "Fine Sync" menu on the menu screen.
→For operating the menu screen, see pages 42 to 45.

✎Note

- Avoid displaying computer patterns which repeat every other line (horizontal stripes). (Flickering may occur, making the image hard to see.)
- When a DVD player or Digital Video is connected, select 480P as the input signal.
- See "Checking the Input Signal" on the next page for information on the currently selected input signal.

Checking the Input Signal

This function allows you to check the current input signal information.

Select "Signal Info" in the "Fine Sync" menu on the menu screen.
→**For operating the menu screen, see pages 42 to 45.**
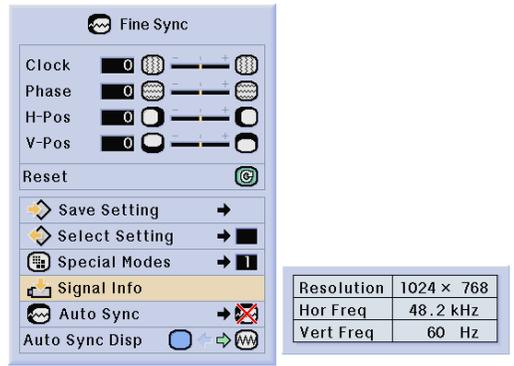
Auto Sync Adjustment

Used to automatically adjust a computer image.

Select "Auto Sync" in the "Fine Sync" menu on the menu screen.
→**For operating the menu screen, see pages 42 to 45.**

✎ **Note**

When setting to "⌇ Normal" or "⌇ High Speed":
- Auto Sync adjustment will occur when the projector is turned on or when the inputs are switched, while connected to a computer.

Manual adjustments should be performed:
- When the optimum image cannot be achieved with Auto Sync adjustment. See page **57**.
- Auto Sync adjustment may take some time to complete, depending on the image of the computer connected to the projector.

- When setting "Auto Sync" to "OFF" or "High Speed", and if ⌇ is pressed, Auto Sync will be executed in "High Speed" mode. If the button is pressed again within one minute, Auto Sync will be executed in "Normal" mode.
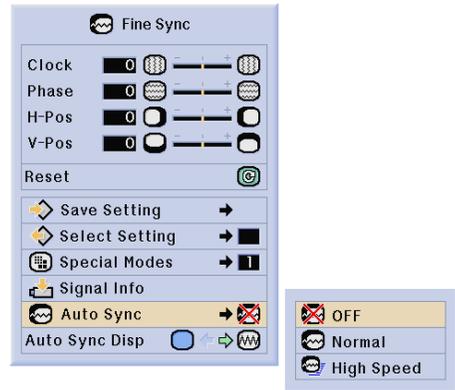
Screen display during Auto Sync

AUTO SYNC button

Basic Operation

Adjusting Computer Images
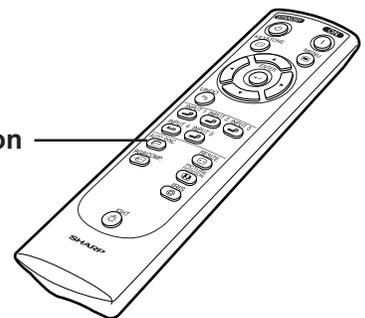
Auto Sync Display Function

Used to set the screen displayed during Auto Sync.

Select "Auto Sync Disp" in the "Fine Sync" menu on the menu screen.
→For operating the menu screen, see pages 42 to 45.

Selected Item	Description
⬜	The image set as a background image is projected.
〰	The computer image being adjusted is displayed.

Easy to Use Functions
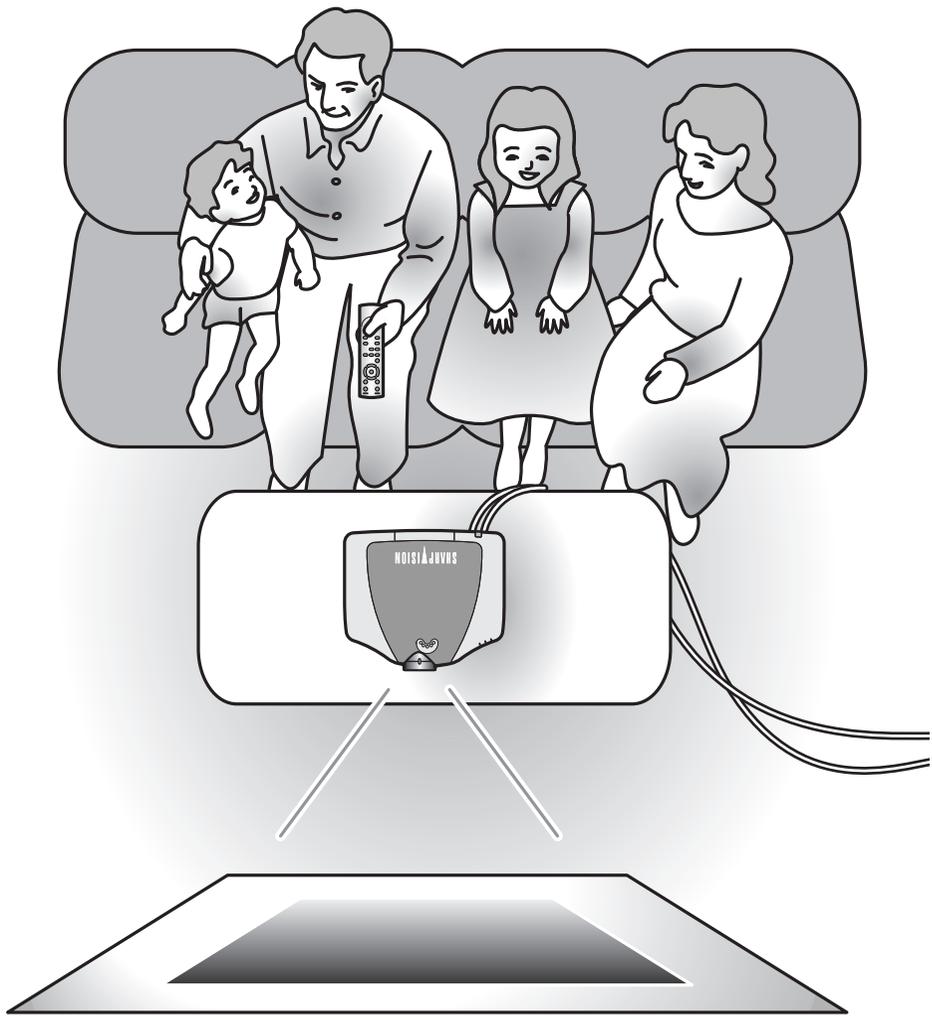
Selecting the Picture Display Mode

This function allows you to modify or customize the picture display mode to enhance the input image. Depending on the input signal, you can choose "SIDE BAR", "SMART STRETCH", "CINEMA ZOOM", "STRETCH", "NORMAL" or "DOT BY DOT" image.

Switching the Picture Display Using Different Input Signals

Press _{RESIZE} ⊡.

• Each time ⊡ is pressed, the display changes as shown on pages **63** and **64**.

📖 Info

• In the Dot by Dot Mode, images are displayed in the original resolution, therefore they will not be enlarged.
• To return to the standard image, press _{UNDO} ⤺ while "RESIZE" is displayed on the screen.

RESIZE button

RESIZE button
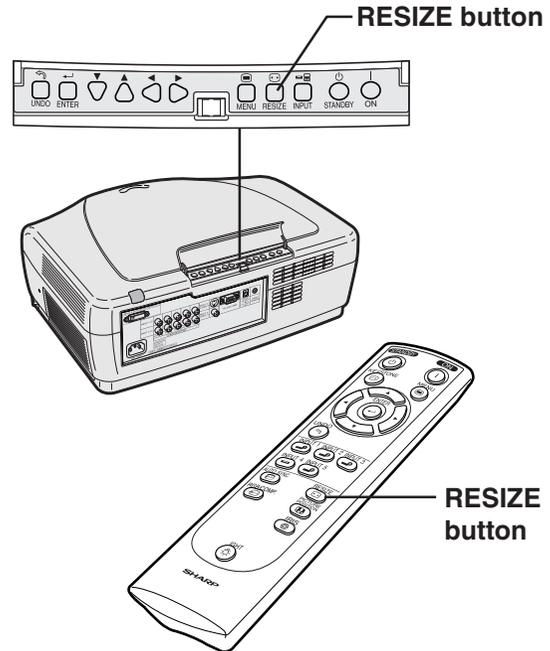
Screen display of the picture display mode

◀▶ RESIZE

NORMAL

VIDEO

		SIDE BAR	SMART STRETCH	CINEMA ZOOM	STRETCH	DOT BY DOT
For 4:3 aspect ratio	480I 480P 576I 576P NTSC PAL SECAM	960 × 720	1280 × 720	1280 × 720	1280 × 720	–
For 16:9 aspect ratio	480P	960 × 720	1280 × 720	1280 × 720	1280 × 720	–
	720P	–	–	–	1280 × 720	1280 × 720
	1080I	–	–	–	1280 × 720	–

• Select "DOT BY DOT" during 720P input when viewing 720P output from a computer.
• 720P switches between "STRETCH" and "DOT BY DOT". "STRETCH" is fixed when 1080I signal is entered.
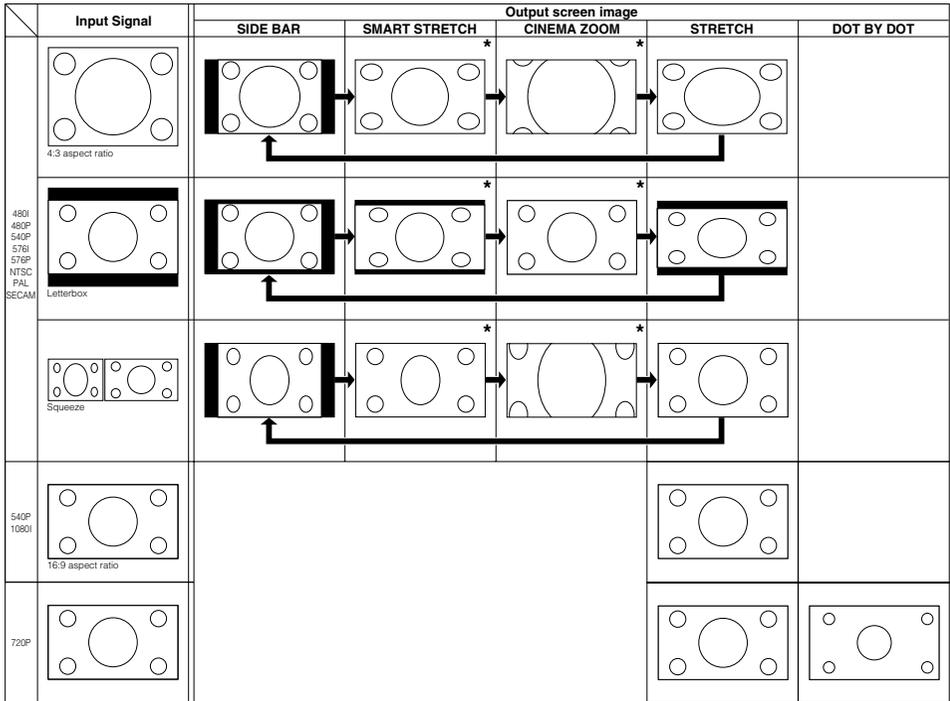
* "Digi. Shift" and "Subtitle" only move when in the "SMART STRETCH" and "CINEMA ZOOM" modes.

Selecting the Picture Display Mode

COMPUTER

		NORMAL	DOT BY DOT
For 4:3 aspect ratio	SVGA (800 × 600)	960 × 720	800 × 600
	XGA (1024 × 768)	960 × 720	1024 × 720
	SXGA (1280 × 960)	960 × 720	1280 × 720
For without 4:3 aspect ratio	SXGA (1280 × 1024)	900 × 720	1280 × 720

Switchable High Brightness/High Contrast Mode

This function controls the quantity of the projected light and the contrast of the image. It can be operated using the IRIS button on the remote control.

Switching HIGH BRIGHTNESS MODE/ HIGH CONTRAST MODE

Press $\overset{\text{IRIS}}{\circledS}$ **on the remote control to select the desired mode. The mode is switched in the order of "HIGH BRIGHTNESS MODE", "MEDIUM MODE" and "HIGH CONTRAST MODE".**

Selected Mode	Description
HIGH BRIGHTNESS MODE	High brightness is given priority over high contrast.
MEDIUM MODE	Intermediate mode between high contrast and high brightness
HIGH CONTRAST MODE	High contrast is given priority over high brightness.

IRIS button
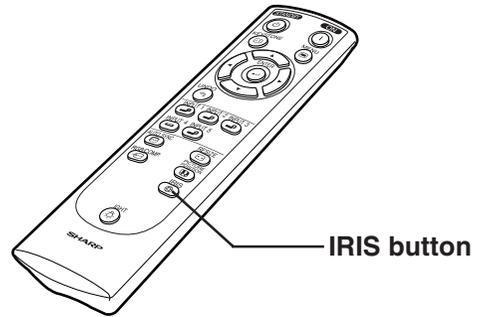
✎ Note

• The projector is set to the "HIGH BRIGHT-NESS MODE" when shipped from the factory.

Digital Shift Function

For easier viewing, this function shifts the entire image projected on the screen up or down when projecting 16:9 images from DVD players and DTV* decoders.
* DTV is the umbrella term used to describe the new digital television system in the United States.

🔲 Picture   ⬭ Gamma   🔳 C.M.S.   ⬭ Fine Sync   🛇 Options   💬 Language   Status

Adjusting the Digital Shift

Select "Digi. Shift" in the "Options" menu on the menu screen.
→For operating the menu screen, see pages 42 to 45.

– ◀ button	+ ▶ button
The image moves down.	The image moves up.
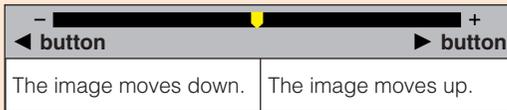
✎ **Note**

• The Digital Shift Function works with the SMART STRETCH and CINEMA ZOOM screen. For details, see page **62**.

🛇 Options

Digi. Shift	-30 ▬▬▬ 0 ▬▬ +30	
Subtitle	0 ▬▬	◎
Reset		◎
LED	🔲 ⇦ 🔳	
🔆 Lamp Timer	0 h	
OSD Display	→	
Signal Type	→	
Ⓑ Background	→	
Economy Mode	→	
RS-232C	→ 9600 bps	
PRJ Mode	→	

Subtitle Setting

With this function, you can adjust the vertical size of the display to allow for subtitles.

🔲 Picture   ⬭ Gamma   🔳 C.M.S.   ⬭ Fine Sync   🛇 Options   💬 Language   Status

Adjusting the Vertical Size of the Display

Select "Subtitle" in the "Options" menu on the menu screen.
→For operating the menu screen, see pages 42 to 45.

– ◀ button	+ ▶ button
The image is compressed by adjusting the vertical size of the display.	The image is enlarged by adjusting the vertical size of the display.
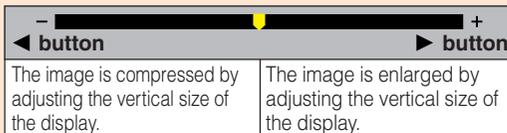
✎ **Note**

• When changing the screen with the Subtitle setting, not only the bottom of the screen rises, but also the upper part is changed to a certain point.
• The subtitle setting can be adjusted more effectively with the Digital Shift function.
• The subtitle setting can be made only with the SMART STRETCH and CINEMA ZOOM screen. For details, see page **62**.

🛇 Options

Digi. Shift	0 ▬▬	
Subtitle	-30 ▬▬▬ 0 ▬▬ +30	◎
Reset		◎
LED	🔲 ⇦ 🔳	
🔆 Lamp Timer	0 h	
OSD Display	→	
Signal Type	→	
Ⓑ Background	→	
Economy Mode	→	
RS-232C	→ 9600 bps	
PRJ Mode	→	
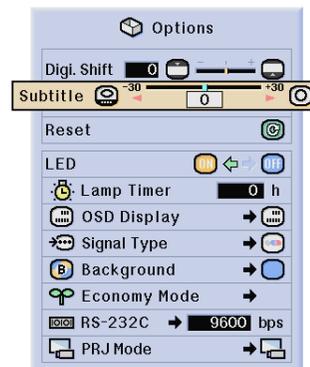
LED Off Function

LEDs (indicators) on the projector can be turned off when they are disturbing the projection.

🔲 Picture ⬭ Gamma 🔳 C.M.S. 〰 Fine Sync ◎ Options 💬 Language Status

Turning LED off

Select "LED" in the "Options" menu on the menu screen.
→**For operating the menu screen, see pates 42 to 45.**

Selected Item	Description
🔲(ON)	LEDs are turned on.
🔲(OFF)	LEDs are turned off while the projector is in operation. (LEDs turn on while the projector is in the standby mode, warming up or indicating problems.)

✎ **Note**

• When Auto Power Off function is set to "OFF", "LED" is set to "ON" automatically. Be sure to set Auto Power Off function to "ON" to use LED Off function. (See page **72**.)

◎ Options

Digi. Shift ▮0▮ 🔲 ── 🔲
Subtitle ▮0▮ ◎ ── ◎
Reset ◎
LED 🔲 ↔ 🔲
🕐 Lamp Timer ▮ 0 ▮h
🔲 OSD Display → 🔲
🔀 Signal Type → 🔲
Ⓑ Background → 🔲
🔑 Economy Mode →
▭▭ RS-232C → ▮9600▮ bps
🔲 PRJ Mode → 🔲

Displaying the Lamp Usage Time

🔲 Picture ⬭ Gamma 🔳 C.M.S. 〰 Fine Sync ◎ Options 💬 Language Status

Confirming the Lamp Usage Time

This function allows you to check the lamp usage time.

Select "Options" menu to see the lamp usage time.

✎ **Note**

• It is recommended that the lamp be changed after approximately 1,900 cumulative hours of use.

← ◎ Options →

Digi. Shift ▮0▮ 🔲 ── 🔲
Subtitle ▮0▮ ◎ ── ◎
Reset ◎
LED 🔲 ↔ 🔲
🕐 Lamp Timer ▮ 0 ▮h ──── **Lamp Usage Time**
🔲 OSD Display → 🔲
🔀 Signal Type → 🔲
Ⓑ Background → 🔲
🔑 Economy Mode →
▭▭ RS-232C → ▮9600▮ bps
🔲 PRJ Mode → 🔲

Setting On-screen Display

This function allows you to turn on or off the on-screen messages. When setting "▢ Level A" or "◯ Level B" in "OSD Display", the input mode display (e.g. INPUT 1) will not appear, even if the INPUT button is pressed.

| Picture | Gamma | C.M.S. | Fine Sync | Options | Language | Status |

Turning off the On-screen Display

Select "OSD Display" in the "Options" menu on the menu screen.
→For operating the menu screen, see pages 42 to 45.

Options

Digi. Shift	0
Subtitle	0
Reset	
LED	
Lamp Timer	0 h
OSD Display	→
Signal Type	→
Background	→
Economy Mode	→
RS-232C	→ 9600 bps
PRJ Mode	→

- Normal
- Level A
- Level B
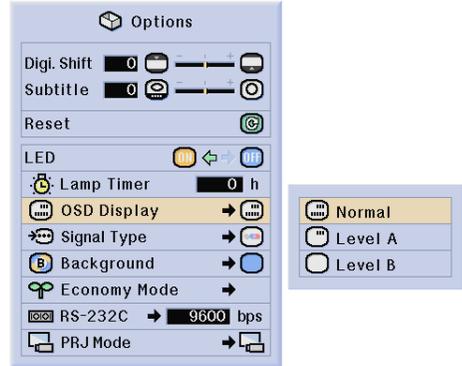
Selected Item	Description
Normal	All On-screen Displays are displayed.
Level A	Input and Auto Sync are not displayed.
Level B	All On-screen Displays are not displayed. (except for Menu, On-screen Displays displayed when the KEYSTONE button is pressed, and warning displays (Power off/Temp./Change The Lamp., etc.))

Selecting the Signal Type

This function allows you to select the input signal type RGB or Component for INPUT 1 and 2, or Digital PC RGB, Digital PC Component, Digital Video RGB, Digital Video Component, Analog RGB or Analog Component for INPUT 5.

| 🖳 Picture | ⊘ Gamma | 🎚 C.M.S. | 〰 Fine Sync | ◎ Options | 💬 Language | Status |

Selecting the Signal Type

Select "Signal Type" in the "Options" menu on the menu screen.
→For operating the menu screen, see pages 42 to 45.

✎ Note

For INPUT 1 and INPUT 2

🖳 RGB	Set when RGB signals are received from video equipment.
🖳 Component	Set when analog component signals are received from video equipment.

For INPUT 5

🖳 D. PC RGB	Set when digital PC RGB signals are received from the computer.
🖳 D. PC Comp.	Set when digital PC component signals are received from the computer.
🖳 D. Video RGB	Set when digital video RGB signals are received from video equipment.
🖳 D. Video Comp.	Set when digital video component signals are received from video equipment.
⌁ A. RGB	Set when analog RGB signals are received.
⌁ A. Comp.	Set when analog component signals are received.

- The input signal type can also be switched by pressing ⌨RGB/COMP. This switching at this time is only able to be performed for switching the ↕ of the above table.

For INPUT 1 and INPUT 2
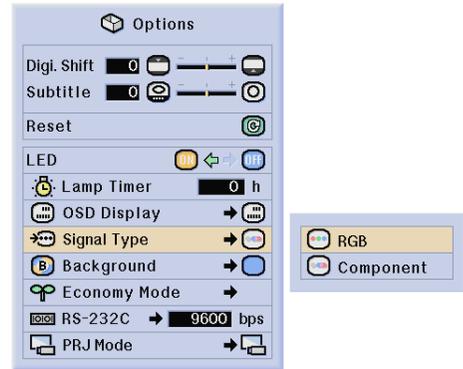
For INPUT 5
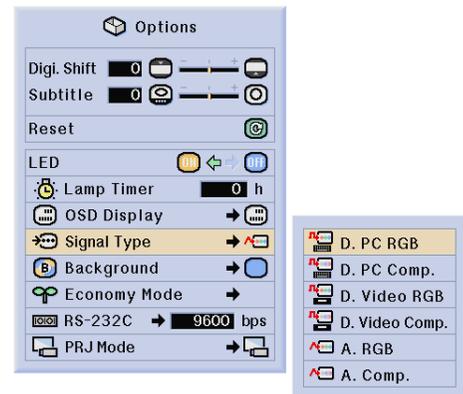
RGB/COMP. button
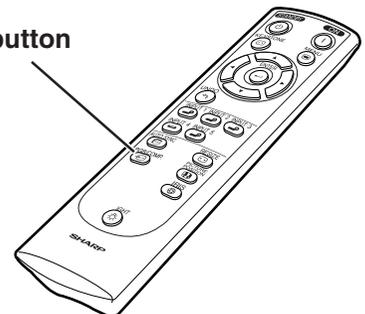
Setting the Video System

The video input system mode is preset to "Auto"; however, a clear picture from the connected audio-visual equipment may not be received, depending on the video signal difference. In that case, switch the video signal.

🔲 Picture　⬭ Gamma　🔲 C.M.S.　⬙ Options　💬 Language　Status

Setting the Video System

**Select "Video System" in the "Options" menu on the menu screen.
→For operating the menu screen, see pages 42 to 45.**

✎ **Note**

- The video signal can only be set in IN-PUT 3 or INPUT 4 mode.
- In "Auto", images are displayed in PAL even if PAL-N or PAL-M input signals are received.
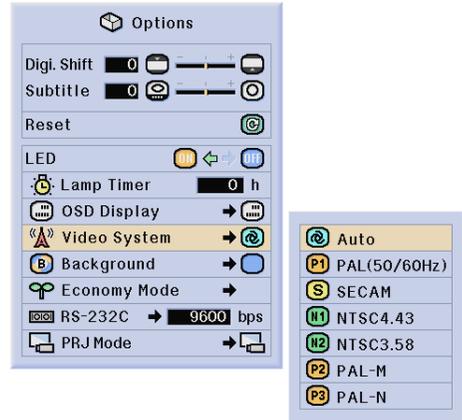
PAL	When connected to PAL video equipment.
SECAM	When connected to SECAM video equipment.
NTSC4.43	When reproducing NTSC signals in PAL video equipment.
NTSC3.58	When connected to NTSC video equipment.

Setting a Background Image

This function allows you to select the image displayed when no signal is being sent to the projector.

🔲 Picture　⬭ Gamma　🔲 C.M.S.　〰 Fine Sync　⬙ Options　💬 Language　Status

Selecting a Background Image

**Select "Background" in the "Options" menu on the menu screen.
→For operating the menu screen, see pages 42 to 45.**

Selected Item	Description
🔵 Blue	Blue screen
⚫ None	Black screen *

* If the input signal has interference, the screen will be displayed with the interference.
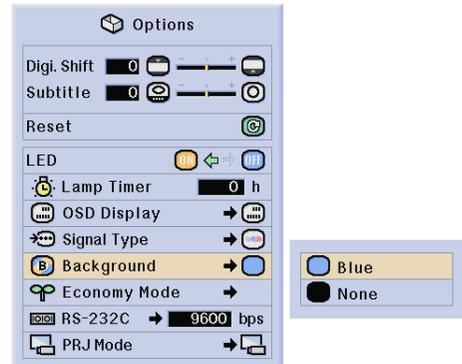
Selecting the Economy Mode

These functions allow you to reduce the power consumption of the projector.

Setting the Power Save

Select "Power Save" in "Economy Mode" under the "Options" menu on the menu screen.

- "Power Save" is switched "ON" and "OFF" by pressing ⊙.

→**For operating the menu screen, see pages 42 to 45.**

Selected Item	Description
ON (ON/Low Power mode)	Although noise is reduced when "Power Save" is set to "ON", brightness decreases by 20%.
OFF (OFF/ Standard mode)	"Power Save" mode is factory preset to "OFF".

RS-232C Off Function

This projector consumes power when using a computer connected to the RS-232C terminal. When not using these terminals, "RS-232C Port" can be set to "OFF" to reduce standby power consumption.

Select "RS-232C Port" in "Economy Mode" under the "Options" menu on the menu screen.

- "RS-232C Port" is switched "ON" and "OFF" by pressing ⊙.

→**For operating the menu screen, see pages 42 to 45.**

Selected Item	Description
ON (ON)	RS-232C connection is set to "ON". The RS-232C is operating at all times (to accept communications).
OFF (OFF)	RS-232C connection is set to "OFF". RS-232C does not operate when the power supply is in standby.
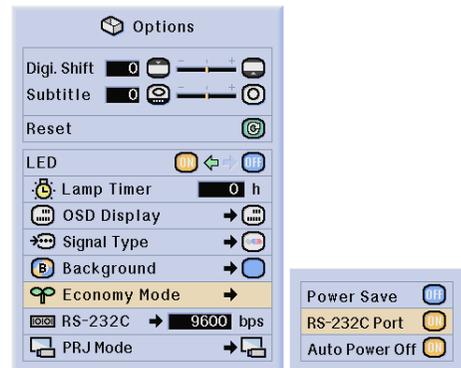
✎ **Note**

- Set "RS-232C Port" to "ON" when using the SharpVision Manager Software.

Status	Brightness	Lamp power consumption
ON (Low power mode)	80%	220 W
OFF (Standard mode)	100%	270 W

Easy to Use Functions

Automatic Power Off Function

Select "Auto Power Off" in "Economy Mode" under the "Options" menu on the menu screen.

- "Auto Power Off" is switched "ON" and "OFF" by pressing ⊙.

→**For operating the menu screen, see pages 42 to 45.**

Selected Item	Description
(ON)	When no input signal is detected for more than 15 minutes, the projector will automatically enter the standby mode.
(OFF)	The Auto Power Off function will be disabled.

Note

- When the Auto Power Off function is set to "ON", 5 minutes before the projector enters the standby mode, the message "Enter STANDBY mode in X min." will appear on the screen to indicate the remaining minutes.
- When Auto Power Off function is set to "OFF", "LED" is set to "ON" automatically. Be sure to set Auto Power Off function to "ON" to use LED Off function. (See page **67**.)
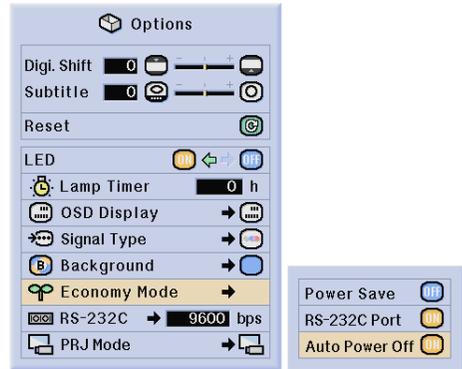
Selecting the Transmission Speed (RS-232C)

This menu allows you to adjust the transmission speed of the RS-232C connection by selecting the baud rate.

Selecting the Transmission Speed (RS-232C)

Select "RS-232C" in the "Options" menu on the menu screen.
→**For operating the menu screen, see pages 42 to 45.**

Note

- Make sure that both the projector and computer are set for the same baud rate. Refer to the computer's operation manual for instructions for setting the computer's baud rate.
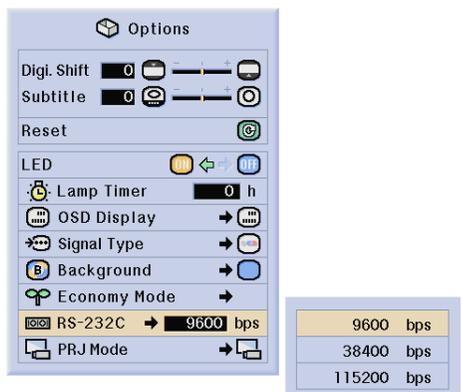
Reversing/Inverting Projected Images

This projector is equipped with a reverse/invert image function that allows you to reverse or invert the projected image for various applications.

| 🔲 Picture | ⊘ Gamma | 📇 C.M.S. | 〰 Fine Sync | ◇ Options | 💬 Language | Status |

Setting the Projection Mode

Select "PRJ Mode" in the "Options" menu on the menu screen.
→**For operating the menu screen, see pages 42 to 45.**
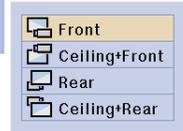
Selected Item	Description
🔲 Front	Normal image
⬚ Ceiling + Front	Inverted image
⬛ Rear	Reversed image
⬚ Ceiling + Rear	Reversed and inverted image

✎ Note

• This function is used for the reversed image and ceiling-mount setups. See page **32** for these setups.

Front

Ceiling+Front

Rear

Ceiling+Rear
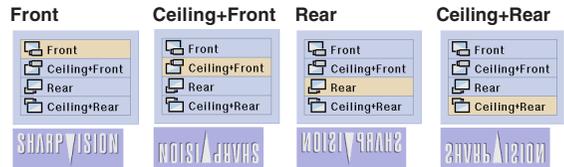
Displaying the Adjustment Settings

This function can be used to display all the adjusted settings as a list on the screen.

| Picture | Gamma | C.M.S. | Fine Sync | Options | Language | Status |

Overview of All Menu Settings

Select the "Status" menu on the menu screen and press ⊙ .

→**For operating the menu screen, see pages 42 to 45.**

Picture		Fine Sync		Options		Other		Other	
Picture Position	⇨ S	Clock		Digi. Shift		IP Mode	⇨ 3D	Language	English
Contrast	0	Phase		Subtitle		White Emph	⇨	Resize	Normal
Bright	0	H-Pos		LED	⇨	DNR	⇨	Auto Power Off	⇦
Color	0	V-Pos		Lamp Timer	23h	DFC	⇨	RS-232C	9600bps
Tint	0	Select Setting		OSD Display	⇨			PRJ Mode	⇨
Sharp	0	Special Modes		Signal Type	⇨				
CLR Temp	6500	Auto Sync	⇨	Background	⇨				
Gamma Position	⇨	Auto Sync Disp	⇨	Power Save	⇨				
C.M.S. Position	⇨			RS-232C Port	⇦				

Appendix

Maintenance

Cleaning the projector
■ Be sure to unplug the power cord before cleaning the projector.
■ The cabinet as well as the operation panel is made of plastic. Avoid using benzene or thinner, as these can damage the finish on the cabinet.
■ Do not use volatile agents such as insecticides on the projector.
Do not attach rubber or plastic items on the projector for long time.
The effects of some of the agents in the plastic may cause damage to the quality or finish of the projector.
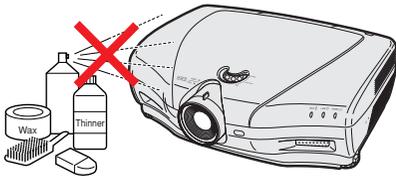
■ Wipe off dirt gently with a soft flannel cloth.
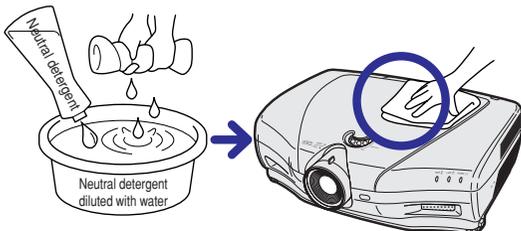
■ When the dirt is hard to remove, soak a cloth in a neutral detergent diluted with water, wring the cloth well and then wipe the projector.
Strong cleaning detergents may discolour, warp or damage the coating on the projector.
Make sure to test on a small, inconspicuous area on the projector before using.

Cleaning the lens
■ Use a commercially available blower or lens cleaning paper (for glasses and camera lenses) for cleaning the lens. Do not use any liquid type cleaning agents, as they may wear off the coating film on the surface of the lens.
■ As the surface of the lens can easily get damaged, be sure not to scrape or hit the lens.
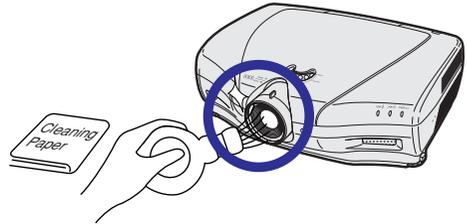
Cleaning the exhaust and intake vents
■ Use a vacuum cleaner to clean dust from the exhaust vent and the intake vent.
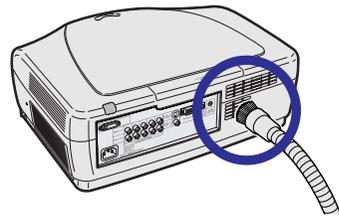
Cleaning the Ventilative Holes

- This projector is equipped with ventilative holes to ensure the optimal operating condition of the projector.
- Periodically clean the ventilative hole by vacuuming it off with a vacuum cleaner.
- The ventilative holes should be cleaned every 100 hours of use. Clean the ventilative holes more often when the projector is used in a dirty or smoky location.

Side and Rear view

Ventilative holes

Ventilative holes

Ventilative holes

Bottom view

Ventilative holes

Ventilative holes

Cleaning the Ventilative Holes

STANDBY button

STANDBY button
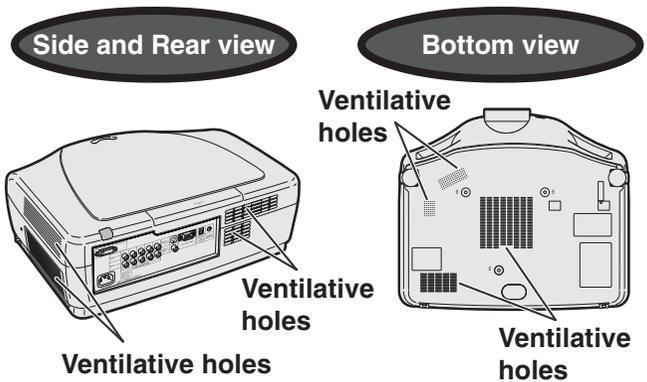
1 Press ⏻ on the projector or ⏻ on the remote control to put the projector into the standby mode.
- Wait until the cooling fan stops.

2 Disconnect the Power Cord.

INPUT 2
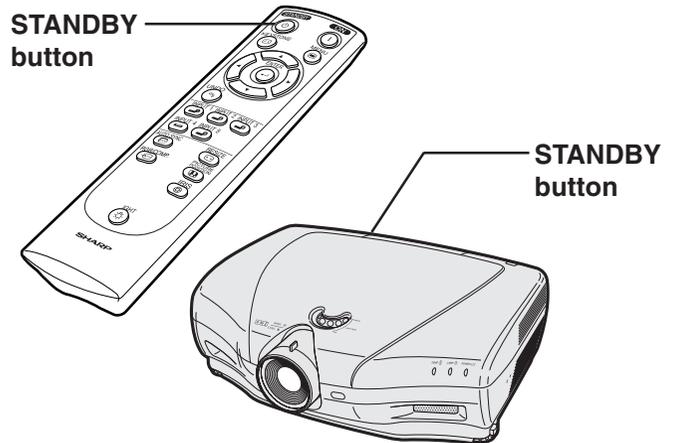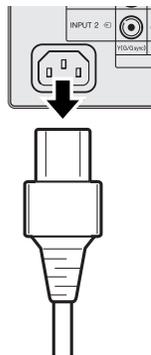
3 Clean the dust off by putting the cleaner hose on the intake ventilative holes.

Cleaner hose

Cleaner hose
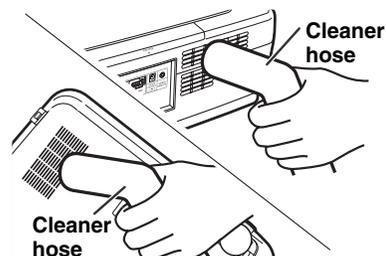
Maintenance Indicators

■ **The warning lights on the projector indicate problems inside the projector.**
■ **If a problem occurs, either the temperature warning indicator or the lamp indicator will illuminate red, and the projector will enter the standby mode. After the projector has entered the standby mode, follow the procedures given below.**

Power indicator

Lamp indicator

Temperature warning indicator
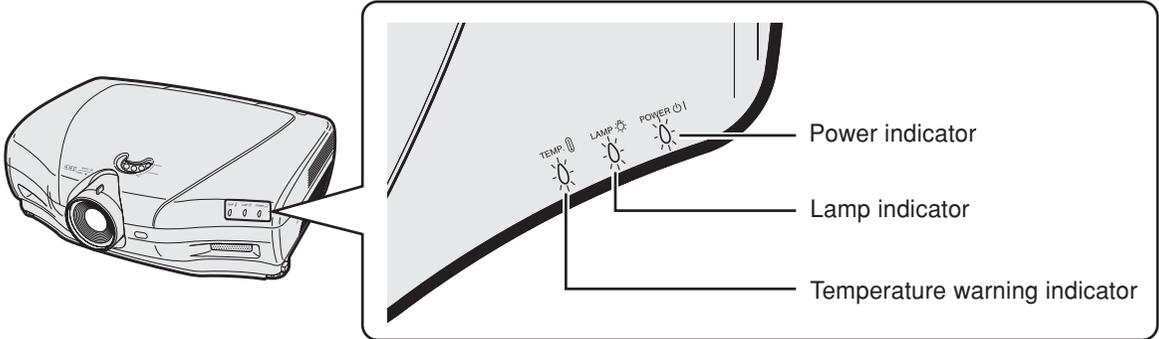
About the temperature warning indicator

If the temperature inside the projector increases, due to blockage of the air vents, or the setting location, "TEMP." will blink in the lower left corner of the picture. If the temperature keeps on rising, the lamp will turn off and the temperature warning indicator will blink, the cooling fan will run for further 90 seconds, then the projector will enter the standby mode. After "TEMP." appears, be sure to perform the following measures.

About the lamp indicator

■ When the lamp exceeds 1,900 cumulative hours of use, "⊠" will be displayed on the screen in yellow. When the cumulative hours of use reach 2,000, "⊠" will change to red, the lamp will automatically turn off and then the projector will automatically enter the standby mode. At this time, the Lamp indicator will illuminate in red.

■ If you try to turn on the projector a fourth time without replacing the lamp, the projector will not turn on.

Change The Lamp.

Maintenance indicator			Condition	Problem	Possible Solution
	Normal	Abnormal			
Temperature warning indicator	Off	Red on/ Standby	The internal temperature is abnormally high.	• Blocked air intake	• Relocate the projector to an area with proper ventilation.
				• Cooling fan breakdown • Internal circuit failure	• Take the projector to your nearest Sharp Authorised Projector Dealer or Service Centre for repair.
				• Clogged air intake	• Clean the ventilative holes according to the procedure on page **77**.
Lamp indicator	Blue on* (Blue blinks when the lamp is active.)	Red on/ Standby	The lamp does not illuminate.	• Burnt-out lamp • Lamp circuit failure	• Carefully replace the lamp. (See page **81**) • Take the projector to your nearest Sharp Authorised Projector Dealer or Service Centre for repair. • Please exercise care when replacing the lamp.
		Red blinks	Lamp replacement time.	• The lamp usage time has exceeded 1,900 hours.	
Power indicator	Blue on*/ Red on	Red blinks	The power indicator blinks in red when the projector is on.	• The exhaust vent cover is open.	• Securely install the cover. • If the power indicator blinks even when the exhaust vent cover is securely installed, contact your nearest Sharp Authorised Projector Dealer or Service Centre for advice.

* Blue is off when "LED" is set to "OFF". (See page **67**.)

📖 Info

• If the temperature warning indicator illuminates, and the projector enters the standby mode, follow the possible solutions on the previous page and then wait until the projector has cooled down completely before plugging in the power cord and turning the power back on. (At least 5 minutes.)

• If the power is turned off for a brief moment due to power outage or some other cause while using the projector, and the power supply recovers immediately after that, the lamp indicator will illuminate in red and the lamp may not be lit. In this case, unplug the power cord from the AC outlet, replace the power cord in the AC outlet and then turn the power on again.

• If you want to clean the air vents during projector operation, be sure to put the projector into the standby mode. After the cooling fan has stopped, clean the vents.

• Do not unplug the power cord after the projector has entered the standby mode and while the cooling fan is running. The cooling fan runs for about 90 seconds.

Regarding the Lamp

Lamp

■ **It is recommended that the lamp (sold separately) be replaced after approximately 1,900 cumulative hours of use or when you notice a significant deterioration in the picture and colour quality. The lamp usage time can be checked with "Lamp Timer" in the "Options" menu on the menu screen.**

■ **To obtain a replacement, please contact your nearest Sharp Authorised Projector Dealer or Service Centre.**

■ **The actual lamp service life may be less than 2,000 hours depending on the environment in which the projector is used.**

Caution Concerning the Lamp

■ **This projector utilises a pressurised mercury lamp. A loud sound may indicate lamp failure. Lamp failure can be attributed to numerous sources such as: excessive shock, improper cooling, surface scratches or deterioration of the lamp due to a lapse of usage time. The period of time up to failure largely varies depending on the individual lamp and/or the condition and the frequency of use. It is important to note that failure can often result in the bulb cracking.**

■ **When the lamp indicator and on-screen display icon are illuminated or flash, it is recommended that the lamp be replaced with a new one immediately, even if the lamp appears to be operating normally.**

■ **Should the lamp break, the glass particles may spread inside the lamp cage or gas contained in the lamp may be vented into the room from the exhaust vent. Because the gas in this lamp includes mercury, ventilate the room well if the lamp breaks and avoid all exposure to the released gas. In case of exposure to the gas, consult with a doctor as soon as possible.**

■ **Should the lamp break, there is also a possibility that glass particles may spread inside of the projector. In such a case, it is recommended you contact your nearest Sharp Authorised Projector Dealer or Service Centre to remove the damaged lamp and assure safe operation.**

Replacing the Lamp

⚠ Caution

• Do not remove the lamp unit immediately after operation of the projector. The lamp will be hot and touching it can lead to burn or injury.

• Wait at least one hour after the power cord is disconnected to allow the surface of the lamp unit to fully cool before removing the lamp unit.

■ **If the new lamp does not light after replacement, take your projector to the nearest Sharp Authorized Projector Dealer or Service Centre for repair. Purchase a replacement lamp unit of type BQC-XVZ100005 from your nearest Sharp Authorised Projector Dealer or Service Centre. Then carefully change the lamp by following the instructions described in this section. If you wish, you may have the lamp replaced at your nearest Sharp Authorised Projector Dealer or Service Centre.**

Removing and Installing the Lamp Unit

Lamp unit		BQC-XVZ100005

1 Press ⏻ STANDBY on the projector or ⊚ on the remote control to put the projector into the standby mode.

- Wait until the cooling fan stops.

⚠️ Warning!

- Do not remove the lamp unit from the projector right after use. The lamp will be very hot and may cause burn or injury.

2 Disconnect the power cord.

- Unplug the power cord from the AC socket.
- Leave the lamp until it has fully cooled down (about 1 hour).

3 Remove the lamp unit cover.

- Loosen the user service screws that secure the lamp unit cover. Then open the cover in the direction of the arrow.

User service screws

Appendix
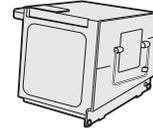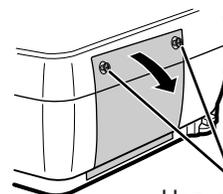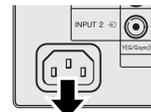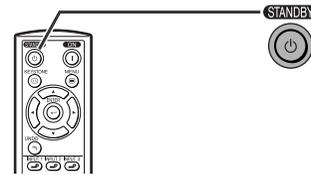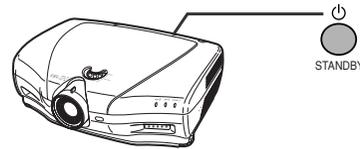
4 **Remove the lamp unit.**
• Loosen the securing screws from the lamp unit. Hold the lamp unit by the handle and pull it in the direction of the arrow.

5 **Insert the new lamp unit.**
• Press the lamp unit firmly into the lamp unit compartment. Fasten the securing screws.

6 **Attach the lamp unit cover.**
• Close the lamp unit cover in the direction of the arrow (to the close mark) on the side of the projector. Then tighten the user service screws.

Info
• If the lamp unit and lamp cover are not correctly installed, the power will not turn on, even if the power cord is connected to the projector.
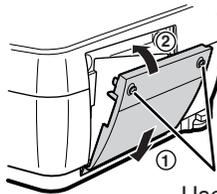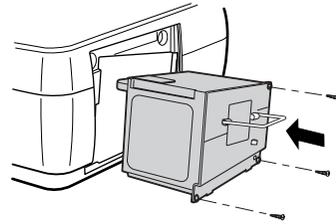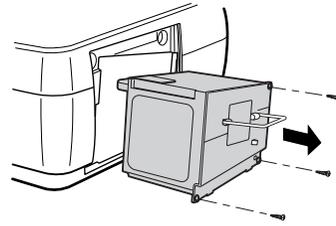
Resetting the Lamp Timer
Reset the lamp timer after replacing the lamp.

1 **Connect the power cord.**
• Plug the power cord into the AC socket of the projector.

2 **Reset the lamp timer.**
• While holding down □, ▼ and ▶ on
the projector, press ○ on the projector.

• "LAMP 0000H" is displayed, indicating that the lamp timer is reset.

Info
• Make sure to reset the lamp timer only when replacing the lamp. If you reset the lamp timer and continue to use the same lamp, this may cause the lamp to become damaged or explode.

User service screws
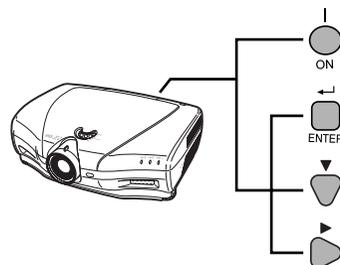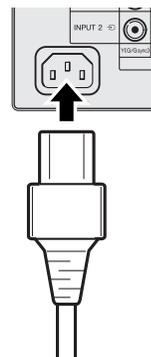
Connecting Pin Assignments

DVI-I (INPUT 5 / DIGITAL INPUT) port: 29 pin connector
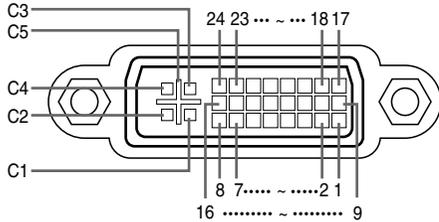
• DVI Digital INPUT

Pin No.	Signal	Pin No.	Signal
1	T.M.D.S data 2–	16	Hot plug detection
2	T.M.D.S data 2+	17	T.M.D.S data 0–
3	T.M.D.S data 2 shield	18	T.M.D.S data 0+
4	Not connected	19	T.M.D.S data 0 shield
5	Not connected	20	Not connected
6	DDC clock	21	Not connected
7	DDC data	22	T.M.D.S clock shield
8	Not connected	23	T.M.D.S clock+
9	T.M.D.S data 1–	24	T.M.D.S clock–
10	T.M.D.S data 1+	C1	Not connected
11	T.M.D.S data 1 shield	C2	Not connected
12	Not connected	C3	Not connected
13	Not connected	C4	Not connected
14	+5V power	C5	Ground
15	Ground		

• DVI Analog RGB Input

Pin No.	Signal	Pin No.	Signal
1	Not connected	16	Hot plug detection
2	Not connected	17	Not connected
3	Not connected	18	Not connected
4	Not connected	19	Not connected
5	Not connected	20	Not connected
6	DDC clock	21	Not connected
7	DDC data	22	Not connected
8	Vertical sync	23	Not connected
9	Not connected	24	Not connected
10	Not connected	C1	Analog input Red
11	Not connected	C2	Analog input Green
12	Not connected	C3	Analog input Blue
13	Not connected	C4	Horizontal sync
14	+5V power	C5	Ground
15	Ground		

• DVI Analog Component Input

Pin No.	Signal	Pin No.	Signal
1	Not connected	16	Not connected
2	Not connected	17	Not connected
3	Not connected	18	Not connected
4	Not connected	19	Not connected
5	Not connected	20	Not connected
6	Not connected	21	Not connected
7	Not connected	22	Not connected
8	Not connected	23	Not connected
9	Not connected	24	Not connected
10	Not connected	C1	Analog input Pr/Cr
11	Not connected	C2	Analog input Y
12	Not connected	C3	Analog input Pb/Cb
13	Not connected	C4	Not connected
14	Not connected	C5	Ground
15	Ground		

RS-232C Port: 9-pin D-sub male connector
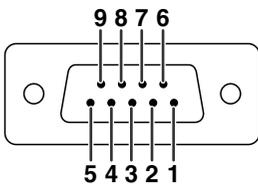
Pin No.	Signal	Name	I/O	Reference
1				Not connected
2	RD	Receive Data	Input	Connected to internal circuit
3	SD	Send Data	Output	Connected to internal circuit
4		Reserved		Connected to internal circuit
5	SG	Signal Ground		Connected to internal circuit
6		Reserved		Connected to internal circuit
7		Reserved		Connected to internal circuit
8		Reserved		Connected to internal circuit
9				Not connected

(RS-232C) Specifications and Command Settings

PC control

A computer can be used to control the projector by connecting an RS-232C cable (null modem, cross type, commercially available) to the projector. (See page 25 for connection.)

Communication conditions

Set the serial port settings of the computer to match that of the table.

Signal format: Conforms to RS-232C standard.   Parity bit: None
Baud rate*: 9,600 bps / 38,400bps / 115,200bps   Stop bit: 1 bit
Data length: 8 bits   Flow control: None
*Use the same settings for the projector and computer.

Basic format

Commands from the computer are sent in the following order: command, parameter, and return code. After the projector processes the command from the computer, it sends a response code to the computer.

Command format

C1	C2	C3	C4	P1	P2	P3	P4

Return code (0DH)

Command 4-digit   Parameter 4-digit
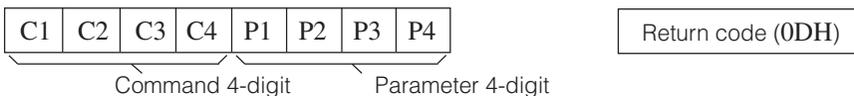
Response code format

Normal response

O	K	Return code (0DH)

Problem response (communication error or incorrect command)

E	R	R	Return code (0DH)

📕 Info

- When more than one code is being sent, send each command only after the response code for the previous command from the projector is verified.
- In the case of transmitting commands during standby, it takes a maximum of 30 seconds until the response code is received.
- When the power is turned on during standby with the "POWER ON" command, wait for at least 30 seconds after the power has been turned on, and then transmit the next command.

📝 Note

- When using the computer control function of the projector, the projector's operating status cannot be read by the computer. Therefore, confirm the status by transmitting the display commands for each adjustment menu and checking the status with the on-screen display. If the projector receives a command other than a menu display command, it will execute the command without displaying the on-screen display.

Commands

Example:
- When "BRIGHT" of INPUT 1 image adjustment is set to −10.

Computer

R	A	B	R	_	−	1	0	↵

Projector

O	K	↵
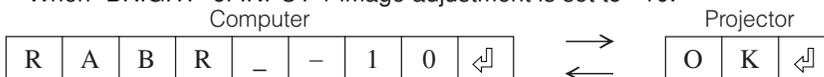
	CONTROL CONTENTS	COMMAND				PARAMETER				RETURN
BUTTONS & REMOTE CONTROL KEY	POWER ON	P	O	W	R	_	_	_	1	OK OR ERR
	STANDBY	P	O	W	R	_	_	_	0	OK OR ERR
	KEYSTONE (−127 − +127)	K	E	Y	S	*	*	*	*	OK OR ERR
	V-SIZE (−10 − +10)	V	S	I	Z	_	_	*	*	OK OR ERR
	INPUT 1	I	R	G	B	_	_	_	1	OK OR ERR
	INPUT 2	I	R	G	B	_	_	_	2	OK OR ERR
	INPUT 3	I	V	E	D	_	_	_	2	OK OR ERR
	INPUT 4	I	V	E	D	_	_	_	1	OK OR ERR
	INPUT 5	I	R	G	B	_	_	_	3	OK OR ERR
	INPUT CHECK	I	C	H	K	_	_	_	0	OK OR ERR
	AUTO SYNC START	A	D	J	S	_	_	_	1	OK OR ERR
	INPUT 1 RESIZE : SIDE BAR/DOT BY DOT/NORMAL	R	A	S	R	_	_	_	3	OK OR ERR
	INPUT 1 RESIZE : SMART STRETCH	R	A	S	R	_	_	_	4	OK OR ERR
	INPUT 1 RESIZE : CINEMA ZOOM	R	A	S	R	_	_	_	1	OK OR ERR
	INPUT 1 RESIZE : STRETCH	R	A	S	R	_	_	_	2	OK OR ERR

	CONTROL CONTENTS	COMMAND				PARAMETER				RETURN
BUTTONS & REMOTE CONTROL KEY	INPUT 2 RESIZE : SIDE BAR/DOT BY DOT/NORMAL	R	B	S	R	_	_	_	3	OK OR ERR
	INPUT 2 RESIZE : SMART STRETCH	R	B	S	R	_	_	_	4	OK OR ERR
	INPUT 2 RESIZE : CINEMA ZOOM	R	B	S	R	_	_	_	1	OK OR ERR
	INPUT 2 RESIZE : STRETCH	R	B	S	R	_	_	_	2	OK OR ERR
	INPUT 3 RESIZE : SIDE BAR	R	B	S	V	_	_	_	3	OK OR ERR
	INPUT 3 RESIZE : SMART STRETCH	R	B	S	V	_	_	_	4	OK OR ERR
	INPUT 3 RESIZE : CINEMA ZOOM	R	B	S	V	_	_	_	1	OK OR ERR
	INPUT 3 RESIZE : STRETCH	R	B	S	V	_	_	_	2	OK OR ERR
	INPUT 4 RESIZE : SIDE BAR	R	A	S	V	_	_	_	3	OK OR ERR
	INPUT 4 RESIZE : SMART STRETCH	R	A	S	V	_	_	_	4	OK OR ERR
	INPUT 4 RESIZE : CINEMA ZOOM	R	A	S	V	_	_	_	1	OK OR ERR
	INPUT 4 RESIZE : STRETCH	R	A	S	V	_	_	_	2	OK OR ERR
	INPUT 5 RESIZE : SIDE BAR/DOT BY DOT/NORMAL	R	C	S	R	_	_	_	3	OK OR ERR
	INPUT 5 RESIZE : SMART STRETCH	R	C	S	R	_	_	_	4	OK OR ERR
	INPUT 5 RESIZE : CINEMA ZOOM	R	C	S	R	_	_	_	1	OK OR ERR
	INPUT 5 RESIZE : STRETCH	R	C	S	R	_	_	_	2	OK OR ERR
	IRIS : High Brightness	I	R	I	S	_	_	_	1	OK OR ERR
	IRIS : Medium	I	R	I	S	_	_	_	2	OK OR ERR
	IRIS : High Contrast	I	R	I	S	_	_	_	3	OK OR ERR

PICTURE

CONTROL CONTENTS	C1	C2	C3	C4	P1	P2	P3	P4	RETURN
INPUT 1 PICTUR PSN : INPUT 1 POSITION	R	A	P	S	_	_	_	0	OK OR ERR
INPUT 1 PICTUR PSN : STANDARD	R	A	P	S	_	_	_	1	OK OR ERR
INPUT 1 PICTUR PSN : NATURAL	R	A	P	S	_	_	_	2	OK OR ERR
INPUT 1 PICTUR PSN : DYNAMIC	R	A	P	S	_	_	_	3	OK OR ERR
INPUT 1 PICTUR PSN : CUSTOM 1	R	A	P	S	_	_	_	4	OK OR ERR
INPUT 1 PICTUR PSN : CUSTOM 2	R	A	P	S	_	_	_	5	OK OR ERR
INPUT 1 CONTRAST (−30 − +30)	R	A	P	I	_	*	*	*	OK OR ERR
INPUT 1 BRIGHT (−30 − +30)	R	A	B	R	_	*	*	*	OK OR ERR
INPUT 1 COLOR (−30 − +30)	R	A	C	O	_	*	*	*	OK OR ERR
INPUT 1 TINT (−30 − +30)	R	A	T	I	_	*	*	*	OK OR ERR
INPUT 1 SHARP (−30 − +30)	R	A	S	H	_	*	*	*	OK OR ERR
INPUT 1 CLR TEMP (50 − 110)	R	A	C	T	_	*	*	*	OK OR ERR
INPUT 1 DISPLAY	R	A	R	E	_	_	_	0	OK OR ERR
INPUT 1 ADJUSTMENT RESET	R	A	R	E	_	_	_	1	OK OR ERR
INPUT 2 PICTUR PSN : INPUT 2 POSITION	R	B	P	S	_	_	_	0	OK OR ERR
INPUT 2 PICTUR PSN : STANDARD	R	B	P	S	_	_	_	1	OK OR ERR
INPUT 2 PICTUR PSN : NATURAL	R	B	P	S	_	_	_	2	OK OR ERR
INPUT 2 PICTUR PSN : DYNAMIC	R	B	P	S	_	_	_	3	OK OR ERR
INPUT 2 PICTUR PSN : CUSTOM 1	R	B	P	S	_	_	_	4	OK OR ERR
INPUT 2 PICTUR PSN : CUSTOM 2	R	B	P	S	_	_	_	5	OK OR ERR
INPUT 2 CONTRAST (−30 − +30)	R	B	P	I	_	*	*	*	OK OR ERR
INPUT 2 BRIGHT (−30 − +30)	R	B	B	R	_	*	*	*	OK OR ERR
INPUT 2 COLOR (−30 − +30)	R	B	C	O	_	*	*	*	OK OR ERR
INPUT 2 TINT (−30 − +30)	R	B	T	I	_	*	*	*	OK OR ERR
INPUT 2 SHARP (−30 − +30)	R	B	S	H	_	*	*	*	OK OR ERR
INPUT 2 CLR TEMP (50 − 110)	R	B	C	T	_	*	*	*	OK OR ERR
INPUT 2 DISPLAY	R	B	R	E	_	_	_	0	OK OR ERR
INPUT 2 ADJUSTMENT RESET	R	B	R	E	_	_	_	1	OK OR ERR
INPUT 5 PICTUR PSN : INPUT 5 POSITION	R	C	P	S	_	_	_	0	OK OR ERR
INPUT 5 PICTUR PSN : STANDARD	R	C	P	S	_	_	_	1	OK OR ERR
INPUT 5 PICTUR PSN : NATURAL	R	C	P	S	_	_	_	2	OK OR ERR
INPUT 5 PICTUR PSN : DYNAMIC	R	C	P	S	_	_	_	3	OK OR ERR
INPUT 5 PICTUR PSN : CUSTOM 1	R	C	P	S	_	_	_	4	OK OR ERR
INPUT 5 PICTUR PSN : CUSTOM 2	R	C	P	S	_	_	_	5	OK OR ERR
INPUT 5 CONTRAST (−30 − +30)	R	C	P	I	_	*	*	*	OK OR ERR
INPUT 5 BRIGHT (−30 − +30)	R	C	B	R	_	*	*	*	OK OR ERR
INPUT 5 COLOR (−30 − +30)	R	C	C	O	_	*	*	*	OK OR ERR
INPUT 5 TINT (−30 − +30)	R	C	T	I	_	*	*	*	OK OR ERR
INPUT 5 SHARP (−30 − +30)	R	C	S	H	_	*	*	*	OK OR ERR
INPUT 5 CLR TEMP (50 − 110)	R	C	C	T	_	*	*	*	OK OR ERR
INPUT 5 DISPLAY	R	C	R	E	_	_	_	0	OK OR ERR
INPUT 5 ADJUSTMENT RESET	R	C	R	E	_	_	_	1	OK OR ERR
INPUT 1 IP MODE : 2D PROGRESSIVE	R	A	I	P	_	_	_	0	OK OR ERR
INPUT 1 IP MODE : 3D PROGRESSIVE	R	A	I	P	_	_	_	1	OK OR ERR
INPUT 1 IP MODE : Film MODE	R	A	I	P	_	_	_	2	OK OR ERR
INPUT 1 WHITE EMPH : OFF	R	A	W	E	_	_	_	0	OK OR ERR
INPUT 1 WHITE EMPH : ON	R	A	W	E	_	_	_	1	OK OR ERR
INPUT 1 DNR : OFF	R	A	N	R	_	_	_	0	OK OR ERR
INPUT 1 DNR : LEVEL 1	R	A	N	R	_	_	_	1	OK OR ERR
INPUT 1 DNR : LEVEL 2	R	A	N	R	_	_	_	2	OK OR ERR
INPUT 1 DNR : LEVEL 3	R	A	N	R	_	_	_	3	OK OR ERR
INPUT 1 DFC : OFF	R	A	D	F	_	_	_	0	OK OR ERR
INPUT 1 DFC : LEVEL 1	R	A	D	F	_	_	_	1	OK OR ERR
INPUT 1 DFC : LEVEL2	R	A	D	F	_	_	_	2	OK OR ERR
INPUT 1 DFC : LEVEL 3	R	A	D	F	_	_	_	3	OK OR ERR
INPUT 2 IP MODE : 2D PROGRESSIVE	R	B	I	P	_	_	_	0	OK OR ERR
INPUT 2 IP MODE : 3D PROGRESSIVE	R	B	I	P	_	_	_	1	OK OR ERR
INPUT 2 IP MODE : Film MODE	R	B	I	P	_	_	_	2	OK OR ERR
INPUT 2 WHITE EMPH : OFF	R	B	W	E	_	_	_	0	OK OR ERR
INPUT 2 WHITE EMPH : ON	R	B	W	E	_	_	_	1	OK OR ERR
INPUT 2 DNR : OFF	R	B	N	R	_	_	_	0	OK OR ERR
INPUT 2 DNR : LEVEL 1	R	B	N	R	_	_	_	1	OK OR ERR
INPUT 2 DNR : LEVEL 2	R	B	N	R	_	_	_	2	OK OR ERR
INPUT 2 DNR : LEVEL 3	R	B	N	R	_	_	_	3	OK OR ERR
INPUT 2 DFC : OFF	R	B	D	F	_	_	_	0	OK OR ERR
INPUT 2 DFC : LEVEL 1	R	B	D	F	_	_	_	1	OK OR ERR
INPUT 2 DFC : LEVEL 2	R	B	D	F	_	_	_	2	OK OR ERR
INPUT 2 DFC : LEVEL 3	R	B	D	F	_	_	_	3	OK OR ERR
INPUT 5 IP MODE : 2D PROGRESSIVE	R	C	I	P	_	_	_	0	OK OR ERR
INPUT 5 IP MODE : 3D PROGRESSIVE	R	C	I	P	_	_	_	1	OK OR ERR
INPUT 5 IP MODE : Film MODE	R	C	I	P	_	_	_	2	OK OR ERR
INPUT 5 WHITE EMPH : OFF	R	C	W	E	_	_	_	0	OK OR ERR
INPUT 5 WHITE EMPH : ON	R	C	W	E	_	_	_	1	OK OR ERR
INPUT 5 DNR : OFF	R	C	N	R	_	_	_	0	OK OR ERR
INPUT 5 DNR : LEVEL 1	R	C	N	R	_	_	_	1	OK OR ERR
INPUT 5 DNR : LEVEL 2	R	C	N	R	_	_	_	2	OK OR ERR
INPUT 5 DNR : LEVEL 3	R	C	N	R	_	_	_	3	OK OR ERR
INPUT 5 DFC : OFF	R	C	D	F	_	_	_	0	OK OR ERR
INPUT 5 DFC : LEVEL 1	R	C	D	F	_	_	_	1	OK OR ERR
INPUT 5 DFC : LEVEL 2	R	C	D	F	_	_	_	2	OK OR ERR
INPUT 5 DFC : LEVEL 3	R	C	D	F	_	_	_	3	OK OR ERR

PICTURE

CONTROL CONTENTS	C1	C2	C3	C4	P1	P2	P3	P4	RETURN
INPUT 3 PICTUR PSN : INPUT 3 POSITION	V	B	P	S	_	_	_	0	OK OR ERR
INPUT 3 PICTUR PSN : STANDARD	V	B	P	S	_	_	_	1	OK OR ERR
INPUT 3 PICTUR PSN : NATURAL	V	B	P	S	_	_	_	2	OK OR ERR
INPUT 3 PICTUR PSN : DYNAMIC	V	B	P	S	_	_	_	3	OK OR ERR
INPUT 3 PICTUR PSN : CUSTOM 1	V	B	P	S	_	_	_	4	OK OR ERR
INPUT 3 PICTUR PSN : CUSTOM 2	V	B	P	S	_	_	_	5	OK OR ERR
INPUT 3 CONTRAST (−30 − +30)	V	B	P	I	_	*	*	*	OK OR ERR
INPUT 3 BRIGHT (−30 − +30)	V	B	B	R	_	*	*	*	OK OR ERR
INPUT 3 COLOR (−30 − +30)	V	B	C	O	_	*	*	*	OK OR ERR
INPUT 3 TINT (−30 − +30)	V	B	T	I	_	*	*	*	OK OR ERR
INPUT 3 SHARP (−30 − +30)	V	B	S	H	_	*	*	*	OK OR ERR
INPUT 3 CLR TEMP (50 − 110)	V	B	C	T	_	*	*	*	OK OR ERR
INPUT 3 DISPLAY	V	B	R	E	_	_	_	0	OK OR ERR
INPUT 3 ADJUSTMENT RESET	V	B	R	E	_	_	_	1	OK OR ERR
INPUT 4 PICTUR PSN : INPUT 4 POSITION	V	A	P	S	_	_	_	0	OK OR ERR
INPUT 4 PICTUR PSN : STANDARD	V	A	P	S	_	_	_	1	OK OR ERR
INPUT 4 PICTUR PSN : NATURAL	V	A	P	S	_	_	_	2	OK OR ERR
INPUT 4 PICTUR PSN : DYNAMIC	V	A	P	S	_	_	_	3	OK OR ERR
INPUT 4 PICTUR PSN : CUSTOM 1	V	A	P	S	_	_	_	4	OK OR ERR
INPUT 4 PICTUR PSN : CUSTOM 2	V	A	P	S	_	_	_	5	OK OR ERR
INPUT 4 CONTRAST (−30 − +30)	V	A	P	I	*	*	*	*	OK OR ERR
INPUT 4 BRIGHT (−30 − +30)	V	A	B	R	*	*	*	*	OK OR ERR
INPUT 4 COLOR (−30 − +30)	V	A	C	O	*	*	*	*	OK OR ERR
INPUT 4 TINT (−30 − +30)	V	A	T	I	*	*	*	*	OK OR ERR
INPUT 4 SHARP (−30 − +30)	V	A	S	H	*	*	*	*	OK OR ERR
INPUT 4 CLR TEMP (50 − 110)	V	A	C	T	*	*	*	*	OK OR ERR
INPUT 4 DISPLAY	V	A	R	E	_	_	_	0	OK OR ERR
INPUT 4 ADJUSTMENT RESET	V	A	R	E	_	_	_	1	OK OR ERR
INPUT 3 IP MODE : 2D PROGRESSIVE	V	B	I	P	_	_	_	0	OK OR ERR
INPUT 3 IP MODE : 3D PROGRESSIVE	V	B	I	P	_	_	_	1	OK OR ERR
INPUT 3 IP MODE : Film MODE	V	B	I	P	_	_	_	2	OK OR ERR
INPUT 3 WHITE EMPH : OFF	V	B	W	E	_	_	_	0	OK OR ERR
INPUT 3 WHITE EMPH : ON	V	B	W	E	_	_	_	1	OK OR ERR
INPUT 3 DNR : OFF	V	B	N	R	_	_	_	0	OK OR ERR
INPUT 3 DNR : LEVEL 1	V	B	N	R	_	_	_	1	OK OR ERR
INPUT 3 DNR : LEVEL 2	V	B	N	R	_	_	_	2	OK OR ERR
INPUT 3 DNR : LEVEL 3	V	B	N	R	_	_	_	3	OK OR ERR
INPUT 3 DFC : OFF	V	B	D	F	_	_	_	0	OK OR ERR
INPUT 3 DFC : LEVEL 1	V	B	D	F	_	_	_	1	OK OR ERR
INPUT 3 DFC : LEVEL 2	V	B	D	F	_	_	_	2	OK OR ERR
INPUT 3 DFC : LEVEL 3	V	B	D	F	_	_	_	3	OK OR ERR
INPUT 4 IP MODE : 2D PROGRESSIVE	V	A	I	P	_	_	_	0	OK OR ERR
INPUT 4 IP MODE : 3D PROGRESSIVE	V	A	I	P	_	_	_	1	OK OR ERR
INPUT 4 IP MODE : Film MODE	V	A	I	P	_	_	_	2	OK OR ERR
INPUT 4 WHITE EMPH : OFF	V	A	W	E	_	_	_	0	OK OR ERR
INPUT 4 WHITE EMPH : ON	V	A	W	E	_	_	_	1	OK OR ERR
INPUT 4 DNR : OFF	V	A	N	R	_	_	_	0	OK OR ERR
INPUT 4 DNR : LEVEL 1	V	A	N	R	_	_	_	1	OK OR ERR
INPUT 4 DNR : LEVEL 2	V	A	N	R	_	_	_	2	OK OR ERR
INPUT 4 DNR : LEVEL 3	V	A	N	R	_	_	_	3	OK OR ERR
INPUT 4 DFC : OFF	V	A	D	F	_	_	_	0	OK OR ERR
INPUT 4 DFC : LEVEL 1	V	A	D	F	_	_	_	1	OK OR ERR
INPUT 4 DFC : LEVEL 2	V	A	D	F	_	_	_	2	OK OR ERR
INPUT 4 DFC : LEVEL 3	V	A	D	F	_	_	_	3	OK OR ERR

GAMMA

CONTROL CONTENTS	C1	C2	C3	C4	P1	P2	P3	P4	RETURN
INPUT 1 GAMMA POSITION : STANDARD	G	M	R	A	_	_	_	0	OK OR ERR
INPUT 1 GAMMA POSITION : BLACK DETAIL	G	M	R	A	_	_	_	1	OK OR ERR
INPUT 1 GAMMA POSITION : DYNAMIC GAMMA	G	M	R	A	_	_	_	2	OK OR ERR
INPUT 1 GAMMA POSITION : CUSTOM 1	G	M	R	A	_	_	_	3	OK OR ERR
INPUT 1 GAMMA POSITION : CUSTOM 2	G	M	R	A	_	_	_	4	OK OR ERR
INPUT 1 GAMMA POSITION : SVM GAMMA	G	M	R	A	_	_	_	5	OK OR ERR
INPUT 2 GAMMA POSITION : STANDARD	G	M	R	B	_	_	_	0	OK OR ERR
INPUT 2 GAMMA POSITION : BLACK DETAIL	G	M	R	B	_	_	_	1	OK OR ERR
INPUT 2 GAMMA POSITION : DYNAMIC GAMMA	G	M	R	B	_	_	_	2	OK OR ERR
INPUT 2 GAMMA POSITION : CUSTOM 1	G	M	R	B	_	_	_	3	OK OR ERR
INPUT 2 GAMMA POSITION : CUSTOM 2	G	M	R	B	_	_	_	4	OK OR ERR
INPUT 2 GAMMA POSITION : SVM GAMMA	G	M	R	B	_	_	_	5	OK OR ERR
INPUT 3 GAMMA POSITION : STANDARD	G	M	V	B	_	_	_	0	OK OR ERR
INPUT 3 GAMMA POSITION : BLACK DETAIL	G	M	V	B	_	_	_	1	OK OR ERR
INPUT 3 GAMMA POSITION : DYNAMIC GAMMA	G	M	V	B	_	_	_	2	OK OR ERR
INPUT 3 GAMMA POSITION : CUSTOM 1	G	M	V	B	_	_	_	3	OK OR ERR
INPUT 3 GAMMA POSITION : CUSTOM 2	G	M	V	B	_	_	_	4	OK OR ERR
INPUT 3 GAMMA POSITION : SVM GAMMA	G	M	V	B	_	_	_	5	OK OR ERR

(RS-232C) Specifications and Command Settings

	CONTROL CONTENTS	COMMAND	PARAMETER	RETURN
GAMMA	INPUT 4 GAMMA POSITION : STANDARD	G M V A	_ _ _ 0	OK OR ERR
	INPUT 4 GAMMA POSITION : BLACK DETAIL	G M V A	_ _ _ 1	OK OR ERR
	INPUT 4 GAMMA POSITION : DYNAMIC GAMMA	G M V A	_ _ _ 2	OK OR ERR
	INPUT 4 GAMMA POSITION : CUSTOM 1	G M V A	_ _ _ 3	OK OR ERR
	INPUT 4 GAMMA POSITION : CUSTOM 2	G M V A	_ _ _ 4	OK OR ERR
	INPUT 4 GAMMA POSITION : SVM GAMMA	G M V A	_ _ _ 5	OK OR ERR
	INPUT 5 GAMMA POSITION : STANDARD	G M R C	_ _ _ 0	OK OR ERR
	INPUT 5 GAMMA POSITION : BLACK DETAIL	G M R C	_ _ _ 1	OK OR ERR
	INPUT 5 GAMMA POSITION : DYNAMIC GAMMA	G M R C	_ _ _ 2	OK OR ERR
	INPUT 5 GAMMA POSITION : CUSTOM 1	G M R C	_ _ _ 3	OK OR ERR
	INPUT 5 GAMMA POSITION : CUSTOM 2	G M R C	_ _ _ 4	OK OR ERR
	INPUT 5 GAMMA POSITION : SVM GAMMA	G M R C	_ _ _ 5	OK OR ERR
	R-GAMMA (−30 – +30)	G M E R	_ * * *	OK OR ERR
	G-GAMMA (−30 – +30)	G M E G	_ * * *	OK OR ERR
	B-GAMMA (−30 – +30)	G M E B	_ * * *	OK OR ERR
	R-GAIN (−30 – +30)	G M G R	_ * * *	OK OR ERR
	G-GAIN (−30 – +30)	G M G G	_ * * *	OK OR ERR
	B-GAIN (−30 – +30)	G M G B	_ * * *	OK OR ERR
	R-OFFSET (−30 – +30)	G M O R	_ * * *	OK OR ERR
	G-OFFSET (−30 – +30)	G M O G	_ * * *	OK OR ERR
	B-OFFSET (−30 – +30)	G M O B	_ * * *	OK OR ERR
	GAMMA RESET	G M R E	_ _ _ 1	OK OR ERR
C.M.S.	INPUT 1 CMS : STANDARD	C S R A	_ _ _ 0	OK OR ERR
	INPUT 1 CMS : FILM TONE	C S R A	_ _ 2 1	OK OR ERR
	INPUT 1 CMS : CUSTOM 1	C S R A	_ _ 1 1	OK OR ERR
	INPUT 1 CMS : CUSTOM 2	C S R A	_ _ 1 2	OK OR ERR
	INPUT 2 CMS : STANDARD	C S R B	_ _ _ 0	OK OR ERR
	INPUT 2 CMS : FILM TONE	C S R B	_ _ 2 1	OK OR ERR
	INPUT 2 CMS : CUSTOM 1	C S R B	_ _ 1 1	OK OR ERR
	INPUT 2 CMS : CUSTOM 2	C S R B	_ _ 1 2	OK OR ERR
	INPUT 3 CMS : STANDARD	C S V B	_ _ _ 0	OK OR ERR
	INPUT 3 CMS : FILM TONE	C S V B	_ _ 2 1	OK OR ERR
	INPUT 3 CMS : CUSTOM 1	C S V B	_ _ 1 1	OK OR ERR
	INPUT 3 CMS : CUSTOM 2	C S V B	_ _ 1 2	OK OR ERR
	INPUT 4 CMS : STANDARD	C S V A	_ _ _ 0	OK OR ERR
	INPUT 4 CMS : FILM TONE	C S V A	_ _ 2 1	OK OR ERR
	INPUT 4 CMS : CUSTOM 1	C S V A	_ _ 1 1	OK OR ERR
	INPUT 4 CMS : CUSTOM 2	C S V A	_ _ 1 2	OK OR ERR
	INPUT 5 CMS : STANDARD	C S R C	_ _ _ 0	OK OR ERR
	INPUT 5 CMS : FILM TONE	C S R C	_ _ 2 1	OK OR ERR
	INPUT 5 CMS : CUSTOM 1	C S R C	_ _ 1 1	OK OR ERR
	INPUT 5 CMS : CUSTOM 2	C S R C	_ _ 1 2	OK OR ERR
	TARGET : RED	C M T G	_ _ _ 1	OK OR ERR
	TARGET : YELLOW	C M T G	_ _ _ 2	OK OR ERR
	TARGET : GREEN	C M T G	_ _ _ 3	OK OR ERR
	TARGET : CYAN	C M T G	_ _ _ 4	OK OR ERR
	TARGET : BLUE	C M T G	_ _ _ 5	OK OR ERR
	TARGET : MAGENTA	C M T G	_ _ _ 6	OK OR ERR
	LIGHTNESS (−30 – +30)	C M S L	_ * * *	OK OR ERR
	CHROMA (−30 – +30)	C M S C	_ * * *	OK OR ERR
	HUE (−30 – +30)	C M S H	_ * * *	OK OR ERR
	RESET (THIS COLOR)	C M R E	_ _ _ 1	OK OR ERR
	RESET (ALL COLORS)	C M R E	_ _ _ 2	OK OR ERR
FINE SYNC*1	CLOCK (−150 – +150)	I N C L	* * * *	OK OR ERR
	PHASE (−60 – +60)	I N P H	_ * * *	OK OR ERR
	H-POSITION (−150 – +150)	I A H P	* * * *	OK OR ERR
	V-POSITION (−60 – +60)	I A V P	_ * * *	OK OR ERR

	CONTROL CONTENTS	COMMAND	PARAMETER	RETURN
FINE SYNC*1	RGB INPUT DISPLAY	I A R E	_ _ _ 0	OK OR ERR
	RGB ADJUSTMENT RESET	I A R E	_ _ _ 1	OK OR ERR
	SAVE SETTING (1 – 7)	M E M S	_ _ _ *	OK OR ERR
	SELECT SETTING (1 – 7)	M E M L	_ _ _ *	OK OR ERR
	RGB HORIZONTAL FREQUENCY CHECK	T F R Q	_ _ _ 1	kHz (***. *OR_)
	RGB VERTICAL FREQUENCY CHECK	T F R Q	_ _ _ 2	Hz (***. *OR_)
	AUTO SYNC : ON (NORMAL)	A A D J	_ _ _ 1	OK OR ERR
	AUTO SYNC : ON (HIGH SPEED)	A A D J	_ _ _ 2	OK OR ERR
	AUTO SYNC : OFF	A A D J	_ _ _ 0	OK OR ERR
	AUTO SYNC DISPLAY ON	I M A S	_ _ _ 1	OK OR ERR
	AUTO SYNC DISPLAY OFF	I M A S	_ _ _ 0	OK OR ERR
Options	DIGITAL SHIFT (−30 – +30)	S T S H	_ * * *	OK OR ERR
	SUBTITLE (−30 – +30)	S T S Z	_ * * *	OK OR ERR
	POWER SAVE MODE : ON	T H M D	_ _ _ 1	OK OR ERR
	POWER SAVE MODE : OFF	T H M D	_ _ _ 0	OK OR ERR
	LED : ON	L E D S	_ _ _ 1	OK OR ERR
	LED : OFF	L E D S	_ _ _ 0	OK OR ERR
	OSD DISPLAY : NORMAL	I M D I	_ _ _ 1	OK OR ERR
	OSD DISPLAY : LEVEL A	I M D I	_ _ _ 2	OK OR ERR
	OSD DISPLAY : LEVEL B	I M D I	_ _ _ 0	OK OR ERR
	INPUT 1 SIGNAL TYPE : RGB	I A S I	_ _ _ 1	OK OR ERR
	INPUT 1 SIGNAL TYPE : COMPONENT	I A S I	_ _ _ 2	OK OR ERR
	INPUT 2 SIGNAL TYPE : RGB	I B S I	_ _ _ 1	OK OR ERR
	INPUT 2 SIGNAL TYPE : COMPONENT	I B S I	_ _ _ 2	OK OR ERR
	VIDEO SYSTEM SELECTION : AUTO	M E S Y	_ _ _ 1	OK OR ERR
	VIDEO SYSTEM SELECTION : PAL	M E S Y	_ _ _ 2	OK OR ERR
	VIDEO SYSTEM SELECTION : SECAM	M E S Y	_ _ _ 3	OK OR ERR
	VIDEO SYSTEM SELECTION : NTSC4.43	M E S Y	_ _ _ 4	OK OR ERR
	VIDEO SYSTEM SELECTION : NTSC3.58	M E S Y	_ _ _ 5	OK OR ERR
	VIDEO SYSTEM SELECTION : PAL-M	M E S Y	_ _ _ 6	OK OR ERR
	VIDEO SYSTEM SELECTION : PAL-N	M E S Y	_ _ _ 7	OK OR ERR
	INPUT 5 SIGNAL TYPE : ANALOG RGB	I C S I	_ _ _ 1	OK OR ERR
	INPUT 5 SIGNAL TYPE : ANALOG COMPONENT	I C S I	_ _ _ 2	OK OR ERR
	INPUT 5 SIGNAL TYPE : DIGITAL COMPUTER (RGB)	I C S I	_ _ _ 3	OK OR ERR
	INPUT 5 SIGNAL TYPE : DIGITAL COMPUTER (COMPONENT)	I C S I	_ _ _ 4	OK OR ERR
	INPUT 5 SIGNAL TYPE : DIGITAL VIDEO (RGB)	I C S I	_ _ _ 5	OK OR ERR
	INPUT 5 SIGNAL TYPE : DIGITAL VIDEO (COMPONENT)	I C S I	_ _ _ 6	OK OR ERR
	BACKGROUND SELECTION : BLUE	I M B G	_ _ _ 1	OK OR ERR
	BACKGROUND SELECTION : NONE	I M B G	_ _ _ 2	OK OR ERR
	AUTO POWER OFF : NO USE	A P O W	_ _ _ 0	OK OR ERR
	AUTO POWER OFF : USE	A P O W	_ _ _ 1	OK OR ERR
	LAMP USAGE TIME	T L T T	_ _ _ 1	0–9999 (INTEGER)
	PROJECTION MODE : FRONT	I M P J	_ _ _ 0	OK OR ERR
	PROJECTION MODE : CEILING + FRONT	I M P J	_ _ _ 1	OK OR ERR
	PROJECTION MODE : REAR	I M P J	_ _ _ 2	OK OR ERR
	PROJECTION MODE : CEILING + REAR	I M P J	_ _ _ 3	OK OR ERR
LANGUAGE	LANGUAGE SELECTION : ENGLISH	M E L A	_ _ _ 1	OK OR ERR
	LANGUAGE SELECTION : DEUTSCH	M E L A	_ _ _ 2	OK OR ERR
	LANGUAGE SELECTION : ESPAÑOL	M E L A	_ _ _ 3	OK OR ERR
	LANGUAGE SELECTION : NEDERLANDS	M E L A	_ _ _ 4	OK OR ERR
	LANGUAGE SELECTION : FRANÇAIS	M E L A	_ _ _ 5	OK OR ERR
	LANGUAGE SELECTION : ITALIANO	M E L A	_ _ _ 6	OK OR ERR
	LANGUAGE SELECTION : SVENSKA	M E L A	_ _ _ 7	OK OR ERR
	LANGUAGE SELECTION : 日本語	M E L A	_ _ _ 8	OK OR ERR
	LANGUAGE SELECTION : PORTUGUÊS	M E L A	_ _ _ 9	OK OR ERR
	LANGUAGE SELECTION : 汉语	M E L A	_ _ 1 0	OK OR ERR
	LANGUAGE SELECTION : 한국어	M E L A	_ _ 1 1	OK OR ERR

✎ **Note**

- If an underbar (_) appears in the parameter column, enter a space. If an asterisk (*) appears, enter a value in the range indicated in brackets under CONTROL CONTENTS.
- *1 FINE SYNC can only be set in the displayed RGB mode.
- The return value of "TLTT___1" becomes "0" when the projector is in the standby mode.

Wired Remote Control Terminal Specifications

Specifications of wired remote control input
- ø3.5 mm minijack
- External: GND
- Internal: +3.3V

Function and transmission codes

CONTROL ITEM	SYSTEM CODE					DATA CODE								JUDGEMENT CODE	
	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15
ON	1	0	1	1	0	0	1	1	0	1	0	1	0	1	0
STANDBY	1	0	1	1	0	0	1	1	0	1	0	0	1	1	0
MENU	1	0	1	1	0	0	0	1	0	0	0	1	1	1	0
▲	1	0	1	1	0	0	0	1	1	1	0	0	1	1	0
▼	1	0	1	1	0	1	0	1	1	1	0	0	1	1	0
◄	1	0	1	1	0	0	0	0	0	1	0	1	0	1	0
►	1	0	1	1	0	1	1	1	1	0	0	1	0	1	0
ENTER	1	0	1	1	0	1	1	1	0	1	0	1	0	1	0
UNDO	1	0	1	1	0	1	0	0	1	1	0	1	0	1	0
RGB/COMP.	1	0	1	1	0	1	0	0	0	1	1	1	1	1	0

CONTROL ITEM	SYSTEM CODE					DATA CODE								JUDGEMENT CODE	
	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15
RESIZE	1	0	1	1	0	0	1	1	1	1	0	1	0	1	0
PICTURE POSITION	1	0	1	1	0	1	0	0	1	1	1	0	0	1	0
IRIS	1	0	1	1	0	0	1	0	1	0	1	0	1	1	0
AUTO SYNC	1	0	1	1	0	0	1	0	1	1	1	1	1	1	0
KEYSTONE	1	0	1	1	0	1	1	1	1	1	1	0	1	1	0
INPUT 1	1	0	1	1	0	0	1	0	1	1	0	0	0	1	0
INPUT 2	1	0	1	1	0	0	1	0	1	1	1	0	0	1	0
INPUT 3	1	0	1	1	0	1	1	1	0	1	1	0	0	1	0
INPUT 4	1	0	1	1	0	0	1	0	0	1	1	0	0	1	0
INPUT 5	1	0	1	1	0	1	0	1	0	1	1	0	0	1	0

Wired remote control function code

LSB   MSB

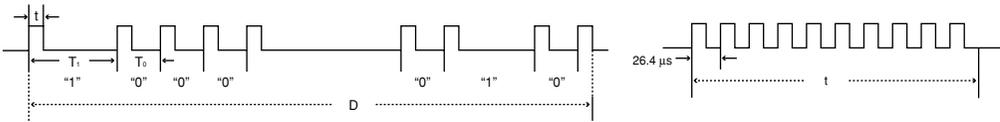| C1	← System Code →			C5	C6	←		Data Code				→	C13	C14	C15
1	0	1	1	0	*	*	*	*	*	*	*	*	*	1	0

- System codes C1 to C5 are fixed at "10110".
- Codes C14 and C15 are reverse confirmation bits, with "10" indicating "Front" and "01" indicating "Rear".

Sharp remote control signal format

Transmission format: 15-bit format

67.5 ms   67.5 ms
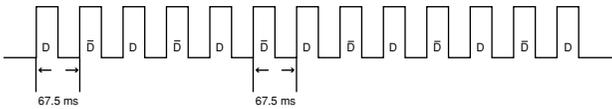
Wave form of output signal: Output using Pulse Position Modulation

T_1 T_0 "1" "0" "0" "0"   "0" "1" "0"   D   26.4 μs   t

- t = 264 μs
- T_0 = 1.05 ms
- T_1 = 2.10 ms
- Pulse carrier frequency = 37.917 kHz
- Duty ratio = 1:1

Transmission control code

15 bit

C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15
System Address					Function Key Data Bit						Data Expansion		Mask	Data Determination
D to D̄ Common Data Bit			←				Reverse in D̄							

Example of Reverse D to D̄

D	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15
	1	0	1	1	0	1	0	0	0	0	0	0	0	1	0

D̄	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15
	1	0	1	1	0	0	1	1	1	1	1	1	1	0	1

Computer Compatibility Chart

Computer

- Multiple signal support
  Horizontal Frequency: 15–81 kHz, Vertical Frequency: 43–100 Hz, Pixel Clock: 12–120 MHz
- Compatible with sync on green and composite sync signals
- SXGA compatible in advanced intelligent compression
- AICS (Advanced Intelligent Compression and Expansion System) resizing technology

The following is a list of modes that conform to VESA. However, this projector supports other signals that are not VESA standards.

PC/MAC/WS	Resolution		Horizontal Frequency (kHz)	Vertical Frequency (Hz)	VESA Standard	DVI Support	Display
PC	VGA	640 × 350	27.0	60			Upscale
			31.5	70			
			37.9	85	✔		
		720 × 350	27.0	60			
			31.5	70			
		640 × 400	27.0	60		✔	
			31.5	70		✔	
			37.9	85	✔	✔	
		720 × 400	27.0	60		✔	
			31.5	70		✔	
			37.9	85	✔	✔	
		640 × 480	26.2	50		✔	
			31.5	60		✔	
			36.8	70		✔	
			37.9	72	✔	✔	
			37.5	75	✔	✔	
			43.3	85	✔	✔	
			47.9	90		✔	
			53.0	100		✔	
	SVGA	800 × 600	31.4	50		✔	
			35.1	56	✔	✔	
			37.9	60	✔	✔	
			44.5	70		✔	
			48.1	72	✔	✔	
			46.9	75	✔	✔	
			53.7	85	✔	✔	
			56.8	90		✔	
			64.0	100		✔	
	XGA	1,024 × 768	35.5	43		✔	Advanced Intelligent Compression
			40.3	50		✔	
			48.4	60	✔	✔	
			56.5	70	✔	✔	
			60.0	75	✔	✔	
			68.7	85	✔	✔	
			73.5	90		✔	
			77.2	96		✔	
			80.6	100		✔	

PC/MAC/WS	Resolution		Horizontal Frequency (kHz)	Vertical Frequency (Hz)	VESA Standard	DVI Support	Display
PC	SXGA	1,152 × 864	54.3	60		✔	Advanced Intelligent Compression
			64.0	70		✔	
			64.1	85		✔	
			67.5	60	✔	✔	
			75.7	70		✔	
		1,152 × 882	54.8	60		✔	
			65.9	72		✔	
			67.4	74		✔	
		1,280 ×1,024	64.0	60	✔	✔	
MAC 13"	VGA	640 × 480	34.9	67			Upscale
MAC 16"	SVGA	832 × 624	49.6	75			
MAC 19"	XGA	1,024 × 768	48.4	60	✔		Advanced Intelligent Compression
MAC 21"	SXGA	1,152 × 870	68.5	75			
PC (WS)		1,280 × 960	60.0	60	✔	✔	
SGI (WS)	SXGA	1,280×1,024	53.5	50			
SUN (WS)		1,152 × 900	60.9	66			
			71.9	76			

✎ **Note**

- This projector may not be able to display images from notebook computers in simultaneous (CRT/LCD) mode. Should this occur, turn off the LCD display on the notebook computer and output the display data in "CRT only" mode. Details on how to change display modes can be found in your notebook computer's operation manual.
- When this projector receives 640 × 350 VESA format VGA signals, "640 × 400" appears on the screen.
- When projecting moving image of interlace signals using RGB input, the intended image may not be projected depending on the signal types. In such cases, use the component, S-video or video input.

DTV

Signal	Horizontal Frequency (kHz)	Vertical Frequency (Hz)	DVI Support
480I	15.8	60	
480P	31.5	60	✔
576I	15.6	50	
576P	31.3	50	✔
720P	45.0	60	✔
720P	37.5	50	✔
1080I	33.8	60	✔
1080I	28.1	50	✔

Troubleshooting

Problem	Check	Page
No picture and no sound or projector does not start.	• Projector power cord is not plugged into the wall outlet.	16
	• Power to the external connected devices is off.	–
	• The selected input mode is wrong.	35
	• Cables incorrectly connected to rear panel of the projector.	17-26
	• Remote control batteries have run out.	13
	• External output has not been set when connecting notebook computer.	–
	• The cover of the lamp unit is not installed correctly.	81
	• The selected "Signal Type" is wrong.	69
	• The video signal format of the video equipment is not set correctly.	70
	• "Bright" is set to minimum position.	47
Colour is faded or poor.	• Picture adjustments are incorrectly set.	47
	(Video Input only) • Video input system is incorrectly set. (INPUT 1, 2 and 5 only) • Input signal type is incorrectly set.	70 69
Picture is blurred; noise appears.	• Adjust the focus.	28
	• The projection distance exceeds the focus range.	30-31
	(Computer Input only) • Perform "Fine Sync" Adjustments ("Clock" Adjustment) • Perform "Fine Sync" Adjustments ("Phase" Adjustment) • Noise will appear depending on the computer.	57 57 –
	• The "DNR" (Digital Noise Reduction) setting is not correct.	50
An unusual sound is occasionally heard from the cabinet.	• If the picture is normal, the sound is due to cabinet shrinkage caused by a room temperature changes. This will not affect operation or performance.	–
Maintenance indicator illuminates.	• See "Maintenance Indicators".	78
Power indicator and lamp indicator do not come on while projecting.	• "LED" is set to "OFF".	67

Troubleshooting

Problem	Check	Page
Picture is green on INPUT 1 or 2 COMPO-NENT.	• Change the input signal type setting.	69
Picture is pink (no green) on INPUT 1 or 2 RGB.		
Picture is dark.	• The lamp indicator is blinking in red. Replace the lamp.	78
Picture is too bright and whitish.	• Picture adjustments are incorrectly set.	47
A response code cannot be received when the projector was attempted to be controlled using RS-232C commands from a computer during standby.	• In the case of transmitting RS-232C commands from a computer during standby, it takes a maximum of 30 seconds for the computer to receive the response code. Set the response code waiting time of the computer to 30 seconds or more.	84

Specifications

Product type	Projector
Model	XV-Z12000
Video system	NTSC 3.58/NTSC 4.43/PAL/PAL-M/PAL-N/PAL 60/SECAM DTV480I/DTV480P/DTV720P/DTV1080I
Display method	DLP chip, RGB optical shutter method
DLP panel	Panel size: 0.8" Display method: Single Panel Digital Micromirror Device (DMD™) by Texas Instruments Drive method: Digital Light Processing (DLP™) No. of dots: 921,600 dots (1,280 [H] × 720 [V])
Lens	1–1.35 × zoom lens, F2.5–8, f = 32.5–44.0 mm
Projection lamp	270 W SHP lamp
S-video input signal	4-pin Mini DIN connector (INPUT 3) Y (luminance signal): 1.0 Vp-p, sync negative, 75 Ω terminated C (chrominance signal): Burst 0.286 Vp-p, 75 Ω terminated
Component input signal	RCA Connector (INPUT 1, 2) Y: 1.0 Vp-p, sync negative, 75 Ω terminated P$_B$: 0.7 Vp-p, 75 Ω terminated P$_R$: 0.7 Vp-p, 75 Ω terminated
Horizontal resolution	520 TV lines (NTSC 3.58 input), 750 TV lines (DTV 720P input)

RGB input signal	DVI-I terminal: (INPUT 5)/RCA connector: INPUT 1/2
	<Digital>
	Input impedance 50 Ω
	Input level 250-1000 mV
	<Analog>
	Input Impedance 75 Ω
	Input level 0.7 Vp-p
	<Synchronization signal>
	• Separate sync / Composite sync
	   Input level TTL level
	   Input impedance 1 KΩ
	• Green on sync
	   Input level (Synchronizing input) 0.286 Vp-p
	   Input Impedance 75 Ω

Video input signal	RCA Connector: VIDEO (INPUT 4), composite video, 1.0 Vp-p, sync negative, 75 Ω terminated
Computer control signal	9-pin D-sub connector (RS-232C Port)
Pixel clock	12–120 MHz
Vertical frequency	43–100 Hz
Horizontal frequency	15–81 kHz
Rated voltage	AC 100–240 V (HONG KONG: 220 V)
Input current	3.7 A (When using AC 100 V) / (HONG KONG: 1.6 A)
Rated frequency	50/60 Hz (HONG KONG: 50 Hz)
Power consumption (normal)	365 W (HONG KONG: 345 W)
Power consumption (standby)	About 0.1 W (When using 100 V)
Heat dissipation	1,400 BTU/hour
Operating temperature	+5°C to +35°C
Storage temperature	−20°C to +60°C
Cabinet	Plastic
I/R carrier frequency	38 kHz
Dimensions (approx.)	475 (W) × 178 (H) × 406 (D) mm (main body only) 475 (W) × 178 (H) × 496 (D) mm (including terminal cover)
Weight (approx.)	9.4 kg
Supplied accessories	Remote control, Two AA size batteries, Power cord, DVI to 15-pin D-sub adaptor, 21-pin RCA conversion adaptor, Video cable, Terminal cover, Lens cap (attached), SharpVision Manager Software CD-ROM, Projector operation manual, SharpVision Manager operation manual
Replacement parts	Lamp unit (Lamp/cage module) (BQC-XVZ100005), Remote control (RRMCGA216WJSA), AA size batteries, Power cord for Europe (except U.K.) and Korea: QACCVA011WJPZ, Power cord for U.K., Hong Kong and Singapore: QACCBA036WJPZ, Power cord for Australia and New Zealand: QACCLA018WJPZ, DVI to 15-pin D-sub adaptor (QCNWGA010WJZZ), 21-pin RCA conversion adaptor (QSOCZ0361CEZZ), Video cable (QCNWGA001WJPZ), Lens cap (PCAPH1056CESA), Terminal cover (CCOVA1985CE03), SharpVision Manager Software CD-ROM (UDSKAA040WJZZ), Projector operation manuals; for European 7 languages (TINS-A972WJZZ (this manual)) / for Chinese, Korean and Arabic (TINS-A973WJZZ), SharpVision Manager operation manual (TINS-B097WJZZ)

This SHARP projector uses a DMD Chip. This very sophisticated panel contains 921,600 pixels. As with any high technology electronic equipment such as large screen TVs, video systems and video cameras, there are certain acceptable tolerances that the equipment must conform to.
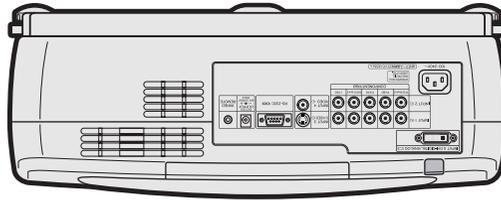
This unit has some inactive pixels within acceptable tolerances which may result in inactive dots on the picture screen. This will not affect the picture quality or the life expectancy of the unit.

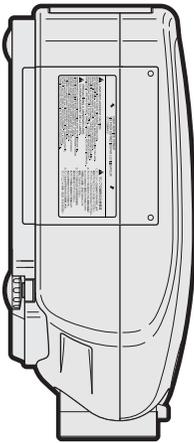*Specifications are subject to change without notice.*
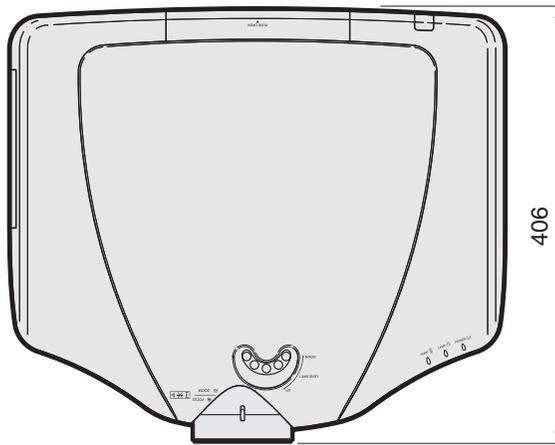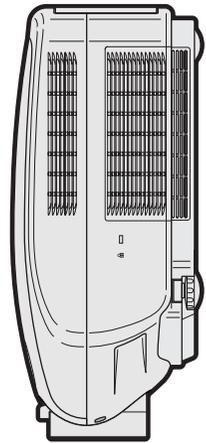
Dimensions

Units: mm

Rear View

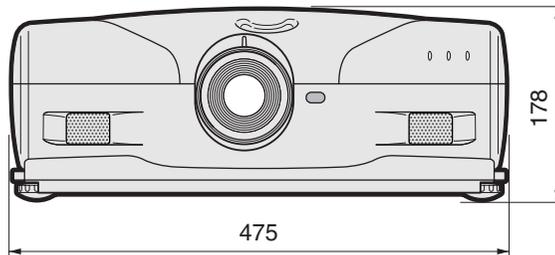**Side View**
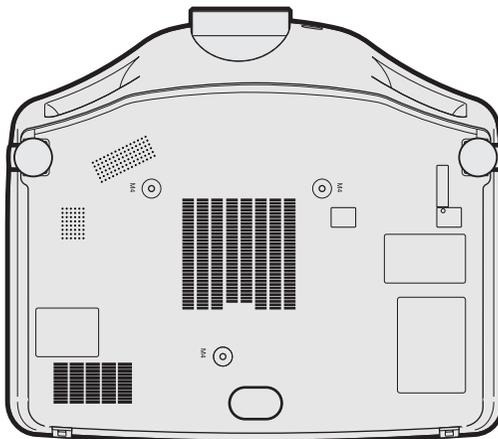
Top View

Side View

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Front View

178

475

Bottom View

Glossary

Advanced intelligent compression
High quality resizing of lower and higher resolution images to fit the projector's native resolution.

Aspect Ratio
Width and height ratio of an image. The normal aspect ratio of a computer and video image is 4:3. There are also wide images with an aspect ratio of 16:9 and 21:9.

Auto Sync
Optimizes projected computer images by automatically adjusting certain characteristics.

Background
Initial setting image projected when no signal is being output.

Clock
Clock adjustment is used to adjust vertical noise when clock level is incorrect.

CLR Temp (Colour temperature)
Function that can be used to adjust the colour temperature to suit the type of image input to the projector. Decrease the colour temperature to create warmer, reddish images for natural flesh tones, or increase to create cooler, bluish images for a brighter picture.

C.M.S. (Colour Management System)
Function allows you individually adjust the display characteristics of six colours (R: Red, Y: Yellow, G: Green, C: Cyan, B: Blue, M: Magenta)

Digital Shift Setting
The image can be moved vertically when the image display mode is set to SMART STRETCH or CINEMA ZOOM during input of video or DTV signals.

Dot by dot
Mode that projects images in their native resolution.

Gamma
Image quality enhancement function that offers a richer image by brightening the darker portions of the image without altering the brightness of the brighter portions.

IP Mode
The progressive display projects a smoother video image. You can select three different modes: 2D Progressive, 3D Progressive and Film Mode.

Keystone correction
Function to digitally correct a distorted image when the projector is set up at an angle, smoothens out jaggies on keystone images and compresses the image not only horizontally but vertically keeping the 4:3 aspect ratio.

Phase
Phase shift is a timing shift between isomorphic signals with the same resolution. When phase level is incorrect, the projected image typically displays horizontal flicker.

Resize
Allows you to modify or customize the picture display mode to enhance the input image. You can select six different modes: SIDE BAR, SMART STRETCH, CINEMA ZOOM, STRETCH, DOT BY DOT or NORMAL.

Smart Stretch
Mode that stretches the right and left sides of the 4:3 image horizontally while maintaining the aspect ratio around the centre of the image to display it on the WIDE screen.

Stretch
Mode that stretches the 4:3 image horizontally to display it fully on a 16:9 screen.

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