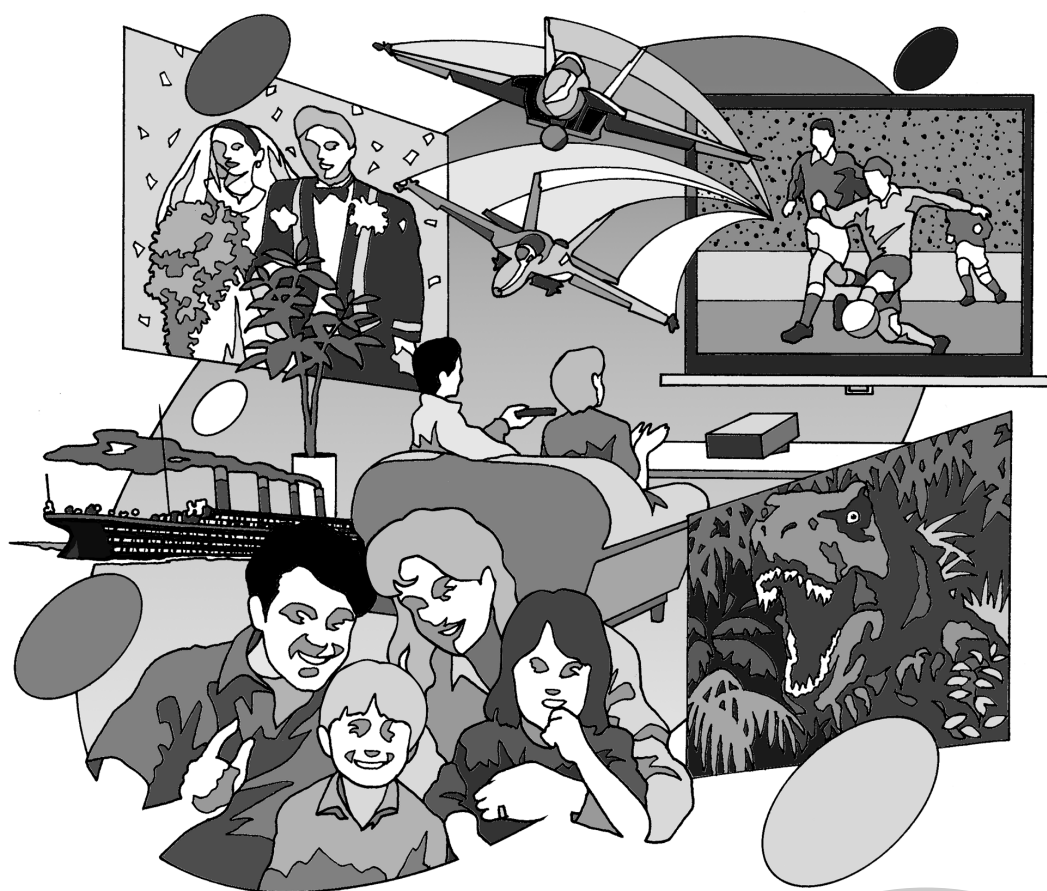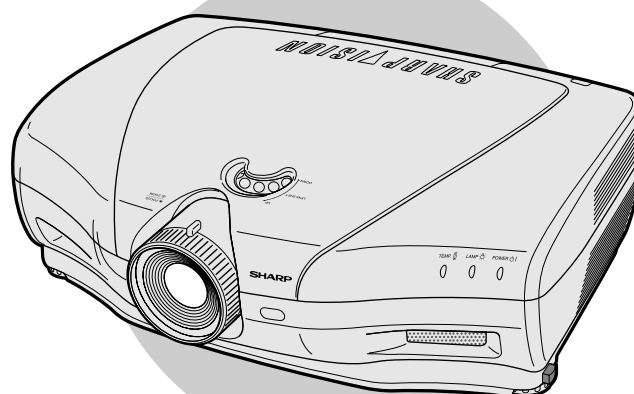# SHARP®

XV-Z9000E

PROJECTOR
PROJEKTOR
PROJECTEUR
PROJEKTOR
PROYECTOR
PROIETTORE
PROJECTOR

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

DLP™
A TEXAS INSTRUMENTS TECHNOLOGY

香港電器安全規格
（國際電工委員會規格適合）

This equipment complies with the requirements of Directive 89/336/EEC and 73/23/EEC as amended by 93/68/EEC.

Dieses Gerät entspricht den Anforderungen der EG-Richtlinien 89/336/EWG und 73/23/EWG mit Änderung 93/68/EWG.

Ce matériel répond aux exigences contenues dans les directives 89/336/CEE et 73/23/CEE modifiées par la directive 93/68/CEE.

Dit apparaat voldoet aan de eisen van de richtlijnen 89/336/EEG en 73/23/EEG, gewijzigd door 93/68/EEG.

Dette udstyr overholder kravene i direktiv nr. 89/336/EEC og 73/23/EEC med tillæg nr. 93/68/EEC.

Quest' apparecchio è conforme ai requisiti delle direttive 89/336/EEC e 73/23/EEC come emendata dalla direttiva 93/68/EEC.

Η εγκατάσταση αυτή ανταποκρίνεται στις απαιτήσεις των οδηγιών της Ευρωπαϊκής Ενωσης 89/336/ΕΟΚ και 73/23/ΕΟΚ, όπως οι κανονισμοί αυτοί συμπληρώθηκαν από την οδηγία 93/68/ΕΟΚ.

Este equipamento obedece às exigências das directivas 89/336/CEE e 73/23/CEE, na sua versão corrigida pela directiva 93/68/CEE.

Este aparato satisface las exigencias de las Directivas 89/336/CEE y 73/23/CEE, modificadas por medio de la 93/68/CEE.

Denna utrustning uppfyller kraven enligt riktlinjerna 89/336/EEC och 73/23/EEC så som kompletteras av 93/68/EEC.

Dette produktet oppfyller betingelsene i direktivene 89/336/EEC og 73/23/EEC i endringen 93/68/EEC.

Tämä laite täyttää direktiivien 89/336/EEC ja 73/23/EEC vaatimukset, joita on muutettu direktiivillä 93/68/EEC.

ENGLISH

OPERATION MANUAL

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 12.

Model No.: XV-Z9000E

Serial No.:

WARNING:

Intense light source. Do not look into the beam or view it directly. Be especially careful that children do not look directly into the beam.


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 is turned off. During normal operation, when turning the power off always use the **OFF** 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.
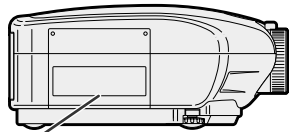
Caution Concerning the Lamp Replacement

See "Replacing the Lamp" on page 47.

USER SERVICE SCREWS
VIS POUR ENTRETIEN PAR L'UTILISATEUR

⚠ 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-XVZ9000/1 ONLY.
UV RADIATION : CAN CAUSE EYE DAMAGE.
TURN OFF LAMP BEFORE SERVICING.
MEDIUM 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-XVZ9000/1.
RAYONS ULTRAVIOLETS : PEUVENT ENDOMMAGER LES YEUX.
ETEINDRE LA LAMPE AVANT DE PROCEDER A L'ENTRETIEN.
LAMPE A MOYENNE PRESSION : RISQUE D'EXPLOSION. DANGER POTENTIEL
DE PARTICULES DE VERRE EN CAS D'ECLATEMENT DE LA LAMPE.
A MANIPULER AVEC PRECAUTION, SE REPORTER AU MODE D'EMPLOI.

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.

⬛ 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.
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.
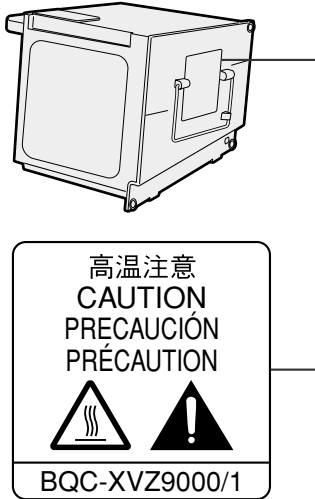   This plug will only fit into a grounding type power outlet.

IMPORTANT SAFEGUARDS

Caution Concerning the Lamp Unit

There is a potential hazard of glass particles if the lamp ruptures. In case of lamp rupture, contact your nearest Sharp Authorised Projector Dealer or Service Centre for a replacement.
See "Replacing the Lamp" on page 47.

高温注意
CAUTION
PRECAUCIÓN
PRÉCAUTION

BQC-XVZ9000/1

This label is pasted the side of the projector.

USER SERVICE SCREWS
VIS POUR ENTRETIEN PAR L'UTILISATEUR

⚠ 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-XVZ9000/1 ONLY.
UV RADIATION : CAN CAUSE EYE DAMAGE.
TURN OFF LAMP BEFORE SERVICING.
MEDIUM 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-XVZ9000/1.
RAYONS ULTRAVIOLETS : PEUVENT ENDOMMAGER LES YEUX.
ETEINDRE LA LAMPE AVANT DE PROCEDER A L'ENTRETIEN.
LAMPE A MOYENNE PRESSION : RISQUE D'EXPLOSION. DANGER POTENTIEL DE PARTICULES DE VERRE EN CAS D'ECLATEMENT DE LA LAMPE.
A MANIPULER AVEC PRECAUTION, SE REPORTER AU MODE D'EMPLOI.

Cautions Concerning the Setup of the Projector

+35°C
+5°C

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 and part of filter must be cleaned more often than usual. As long as the projector is properly maintained in this manner, use in these environments will not reduce the overall operation life. Please note that all internal cleaning must be performed by a Sharp Authorised Projector Dealer or Service Centre.
• Do not expose the projector to extreme heat or cold.
  Operating temperature: +5°C to 35°C
 Storage temperature: –20°C to +60°C
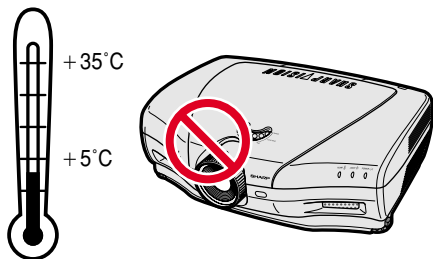
Notes on Operation

• The exhaust ventilative hole, the lamp cage cover and adjacent areas may get extremely hot during projector operation. To prevent injury, do not touch these areas until they have sufficiently cooled down.
• Allow at least 30 cm of space between the exhaust ventilative hole and the nearest wall or obstruction.
• If the cooling fan becomes obstructed, a protection device will automatically turn off the projector lamp. This does not indicate a malfunction. Remove the projector power cord from the wall outlet and wait at least 10 minutes. Then turn on the power by plugging the power cord back in. This will return the projector to the normal operating condition.
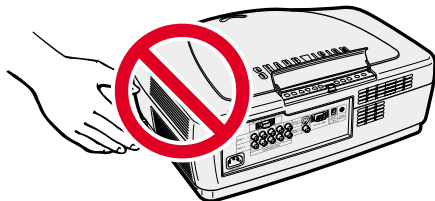
IMPORTANT SAFEGUARDS
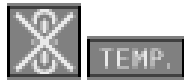
Temperature Monitor Function

If the projector starts to overheat due to setup problems or a dirty air filter, "TEMP." and "☒" will flash 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 flash, and after a 90-second cooling-off period the power will shut off. Refer to "Lamp/Maintenance Indicators" on page 45, for details.

NOTE ►

• 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.
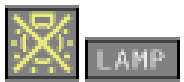
Lamp Monitor Function

When the projector is turned on after the lamp has been used for 1,900 hours, "LAMP" and "☒" will flash in the lower-left corner of the picture to advise you to replace the lamp. See page 47 for lamp replacement. If the lamp has been used for 2,000 hours, the projector power will automatically turn off and the projector will enter standby mode. Refer to "Lamp/Maintenance Indicators" on page 45, for details.

Using the Terminal Cover

• When ceiling-mounting the projector, attach the terminal cover (supplied) to hide the connecting cables.
• Use the terminal cover to hide the connecting cables when the projector is used on a desktop or high mounted.
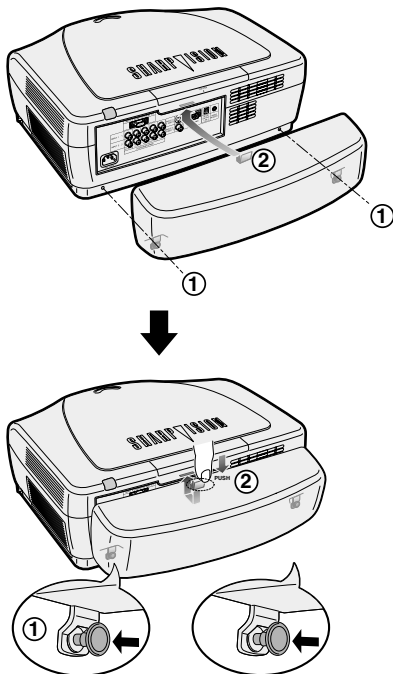
① Install the terminal cover using the two attached clips.

② Attach the terminal cover by aligning with the tab on the projector.

Outstanding Features

1. Wide DMD™*1 (Digital Micromirror Device) Chip

The DMD Chip allows for a higher contrast image. Also, as it has an aspect ratio of 16:9, it is possible to view, in the best possible picture frame, software recorded on 16:9 from DVD or DTV.

*1 Digital Light Processing, DLP, Digital Micromirror Device and DMD are trademarks of Texas Instruments.

2. Full 720P Resolution

The high resolution panel of 921,600 pixels (1280 × 720 dots) allows for viewing high image quality just as the original as well as HDTV 720P signals.

3. Low Fan Noise

A new optical engine has been developed for this product resulting in minimized fan noise for undisturbed viewing.

4. For Use with DTV*2

Allows projection of DTV images and 16:9 wide-screen images when connected to a DTV decoder or similar video systems.

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

5. New Progressive Mode and Film Mode

Optimizes the image by converting the interlaced signal to the progressive. Useful for displaying slow-moving images or still images. Three modes are available.

6. Advanced Video Circuitry

Provides high quality images with minimal dot crawl and cross colour noise.

7. Easy-to-use Graphical User Interface (GUI)

A multi-colour, icon-based menu system allows for simple image adjustments.

8. Colour Temperature Adjustment

The function can be used to adjust the colour temperature to suit the type of image input to the projector.

9. Gamma Correction Function

The gamma value setting can be adjusted according to the input source for optimal image contrast.

10. Brightness Switchover Function

Function with toggle switch to control the quantity of projected light. Select "NORMAL" or "BRIGHT" to decrease or increase brightness, power consumption and fan noise.

11. Component Video Input

Utilizes a component video input signal (Y, C_B, C_R). The video signal is input as separate components to provide superior colour and image quality.

12. Direct Computer Compatibility

A multi-scan RGB input accepts signals from VGA (640 dots × 480 lines) to SXGA (1,280 dots × 1,024 lines) and Macintosh (from 13" to 21") without the need for any additional hardware.

How to Access the PDF Operation Manuals of SharpVision Manager

PDF operation manuals of supplied GAMMA control software "SharpVision Manager" in several languages are included in the CD-ROM. To utilize these manuals, you need to install Adobe Acrobat Reader on your PC (Windows or Macintosh). If you have not installed Acrobat Reader yet, you can download it from the Internet (http://www.adobe.com) or 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 Double click on the "My Computer" icon.
③ Double click on the "CD-ROM" drive.
④ Double click on the "acrobat" folder.
⑤ Double click on the "windows" folder.
⑥ Double click on the desired installation programme and follow the instructions on the screen.

For Macintosh:
① Insert the CD-ROM in the CD-ROM drive.
② Double click on the "CD-ROM" icon.
③ Double click on the "acrobat" folder.
④ Double click on the "mac" folder.
⑤ Double click on the desired 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 Double click on the "My Computer" icon.
③ Double click on the "CD-ROM" drive.
④ Double click on the "MANUALS" folder.
⑤ Double click on the "SVM_E" folder.
⑥ Double click on the language (name of the folder) that you want to view.
⑦ Double click on the "SVM_EE" pdf file to access the SharpVision Manager manual.

For Macintosh:
① Insert the CD-ROM in the CD-ROM drive.
② Double click on the "CD-ROM" icon.
③ Double click on the "MANUALS" folder.
④ Double click on the "SVM_E" folder.
⑤ Double click on the language (name of the folder) that you want to view.
⑥ Double click on the "SVM_EE" pdf file to access the SharpVision Manager manual.

NOTE
• 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 on the CD-ROM not included in this operation manual.

Contents

Important
Information

Setup & Connections

Operation Buttons

Basic Operation

Maintenance & Troubleshooting

Appendix

Part Names

Numbers next to the part names refer to the main pages in this manual where the topic is explained.

Projector

Front and Top View

Lens shift dial **18**

Zoom knob **17**

Focus ring **17**

Adjuster **18**

45 TEMPERATURE WARNING indicator

45 LAMP REPLACEMENT indicator

45 POWER indicator

4 Intake ventilative hole

18 Adjuster

16 Remote control sensor

12 Lens cap

26 MENU button

23 RESIZE button

23 INPUT button

17 POWER buttons (ON/OFF)

ADJUSTMENT buttons **26**
(▲/▼/◄/►)

ENTER button **26**

UNDO button **26**

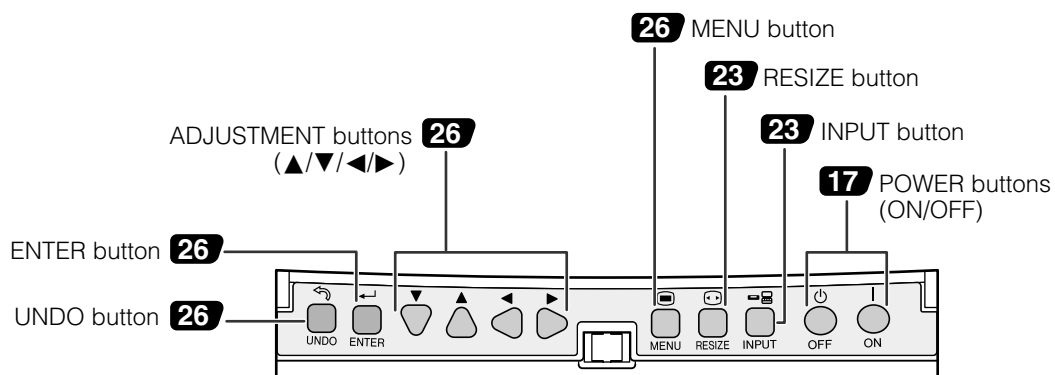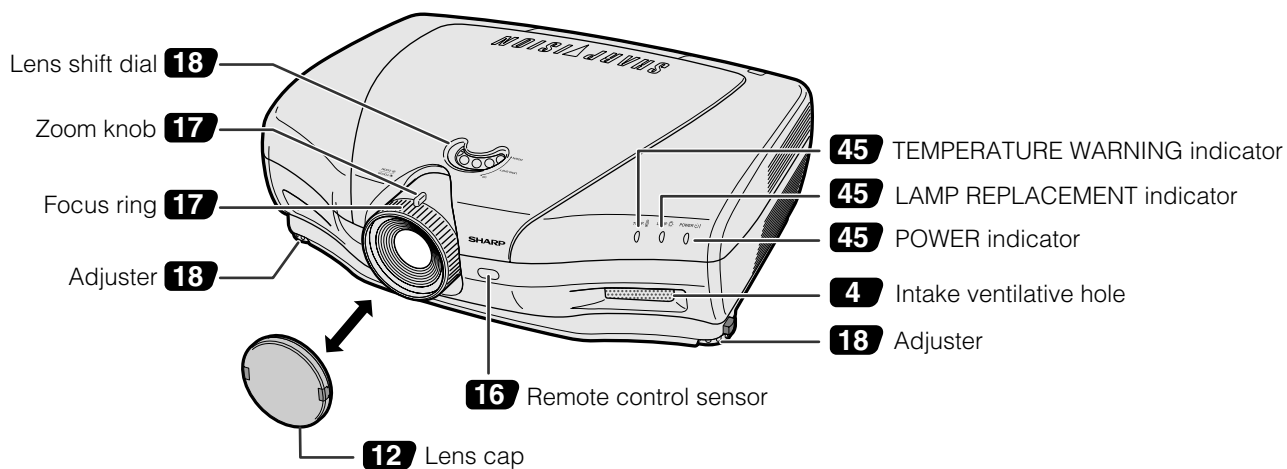UNDO ENTER ▼ ▲ ◄ ► MENU RESIZE INPUT OFF ON

Side and Rear View

Part Names
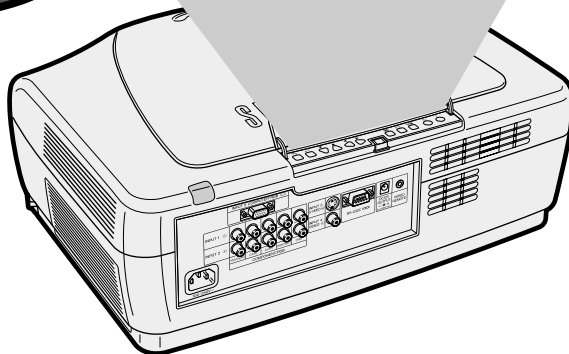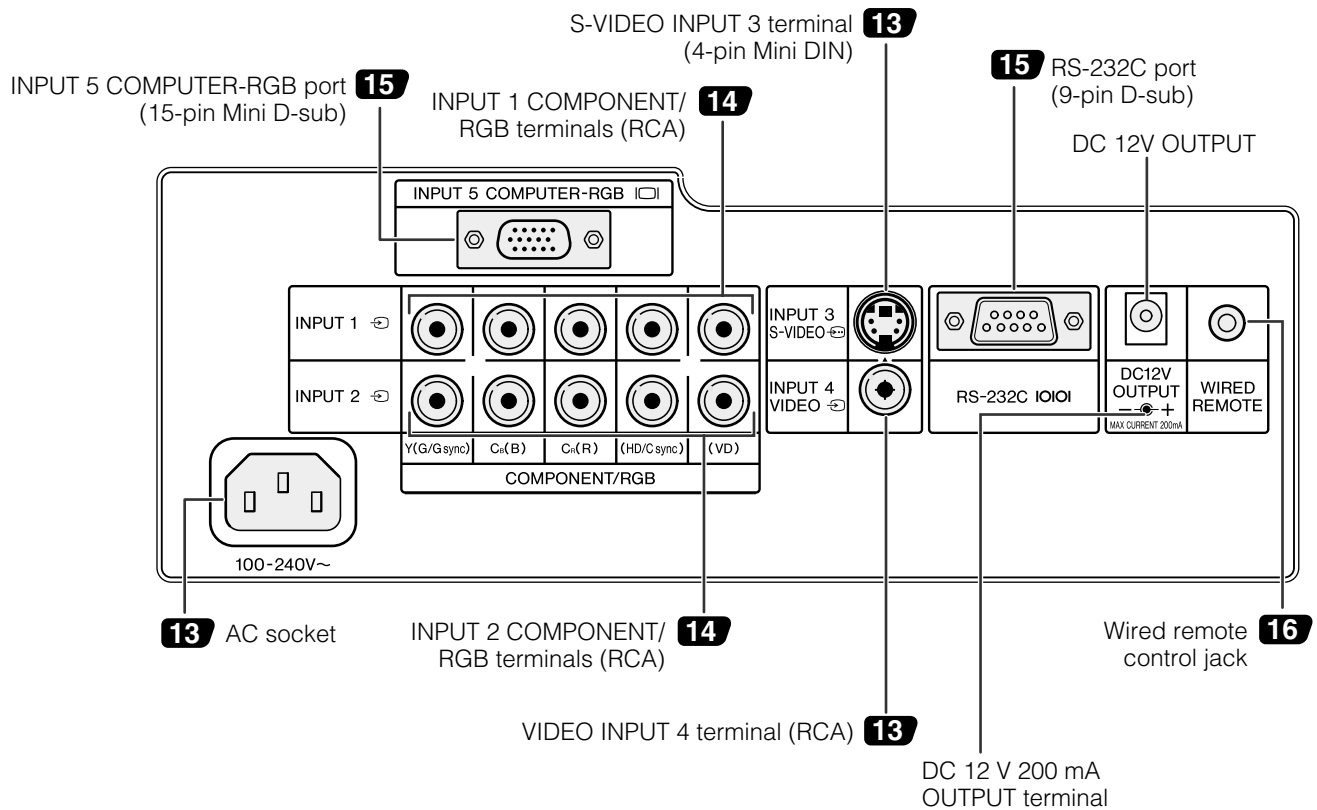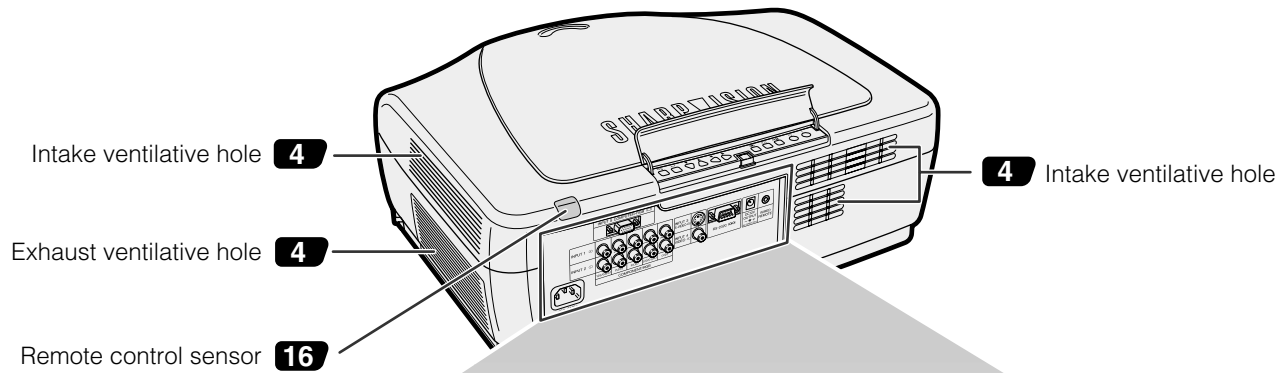
Numbers next to the part names refer to the main pages in this manual where the topic is explained.

Projector

Side and Rear View

Intake ventilative hole **4**

Exhaust ventilative hole **4**

Remote control sensor **16**

4 Intake ventilative hole

S-VIDEO INPUT 3 terminal **13**
(4-pin Mini DIN)

INPUT 5 COMPUTER-RGB port **15**
(15-pin Mini D-sub)

INPUT 1 COMPONENT/ **14**
RGB terminals (RCA)

15 RS-232C port
(9-pin D-sub)

DC 12V OUTPUT

INPUT 5 COMPUTER-RGB

INPUT 1

INPUT 2

INPUT 3
S-VIDEO

INPUT 4
VIDEO

RS-232C

DC12V
OUTPUT
MAX CURRENT 200mA

WIRED
REMOTE

Y(G/G sync)   C$_B$(B)   C$_R$(R)   (HD/C sync)   (VD)

COMPONENT/RGB

100-240V~

13 AC socket

INPUT 2 COMPONENT/ **14**
RGB terminals (RCA)

Wired remote **16**
control jack

VIDEO INPUT 4 terminal (RCA) **13**

DC 12 V 200 mA
OUTPUT terminal

(GB) **-10**

Part Names

Remote Control

Front View

Top View

Remote control signal transmitter

WIRED R/C JACK

POWER buttons (ON/OFF) **17**

ENTER button **26**

26 MENU button

26 ADJUSTMENT buttons
(▲/▼/◄/►)

16 Wired remote control jack

UNDO button **26**

INPUT 1 button **23**

INPUT 2 button **23**

23 INPUT 3 button

INPUT 4 button **23**

23 INPUT 5 button

THEATRE MODE button **38**

23 RESIZE button

GAMMA button **25**

30 CLR TEMP buttons

AUTO SYNC button **35**

19 KEYSTONE button

16 BACKLIGHT button
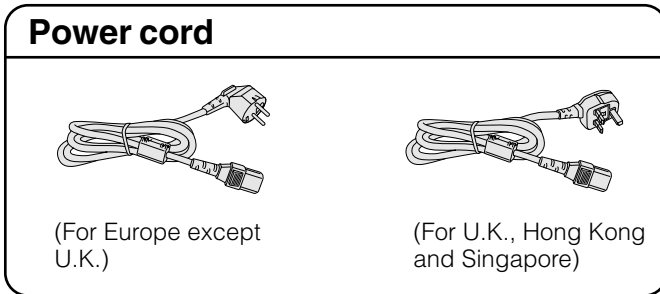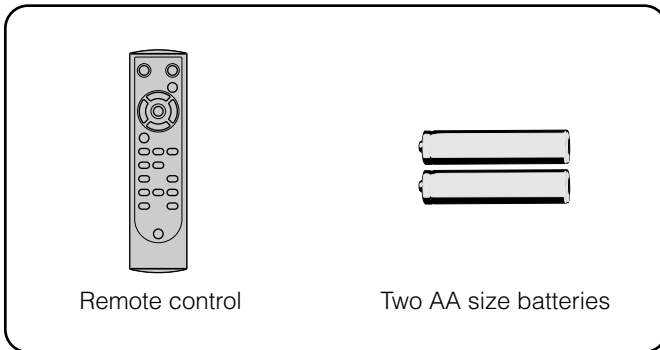
SHARP
PROJECTOR

Inserting the batteries

1 Pull down the tab on the battery cover and remove the cover towards the direction of the arrow.	**2** Insert two AA size batteries, making sure the polarities match the + and − marks inside the battery compartment.	**3** Insert the lower tab of the battery cover into the opening, and press the cover until it clicks in place.
Battery cover	Battery compartment	Battery cover

NOTE

- If the remote control gets wet, wipe it dry immediately.
- Avoid excessive heat and humidity.
- If you will not be using the remote control for a long time, remove the batteries.
- Do not mix new and old or different types of batteries.
- There are operations that can only be carried out by remote control. Handle the remote control carefully.
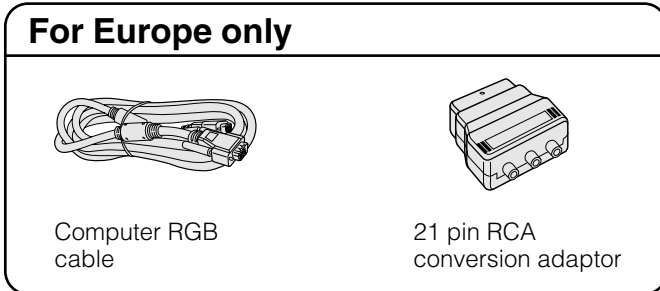
Supplied Accessories

Remote control

Two AA size batteries

Power cord

(For Europe except U.K.)

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

NOTE ▶

• The configuration of wall outlets differs from country to country. Use the power cord that corresponds to the wall outlet in your country.

For Europe only

Computer RGB cable

21 pin RCA conversion adaptor

NOTE ▶

• The RGB cable and 21 pin conversion adaptor are only supplied with European models.
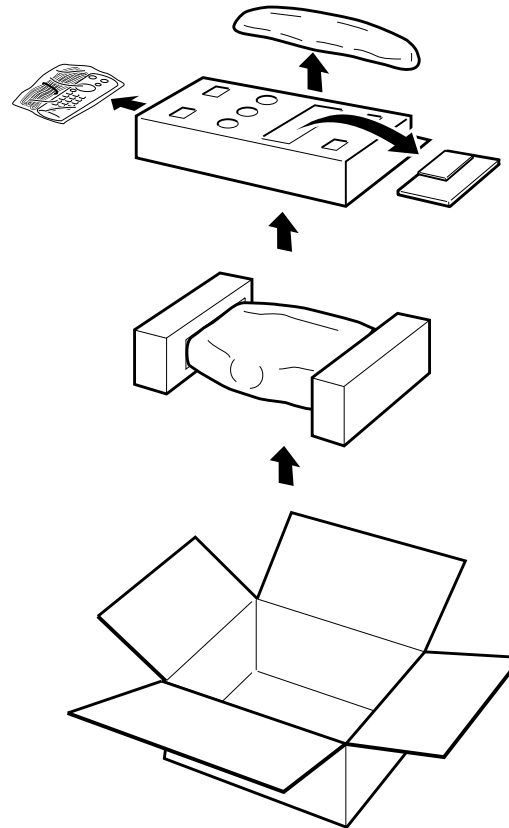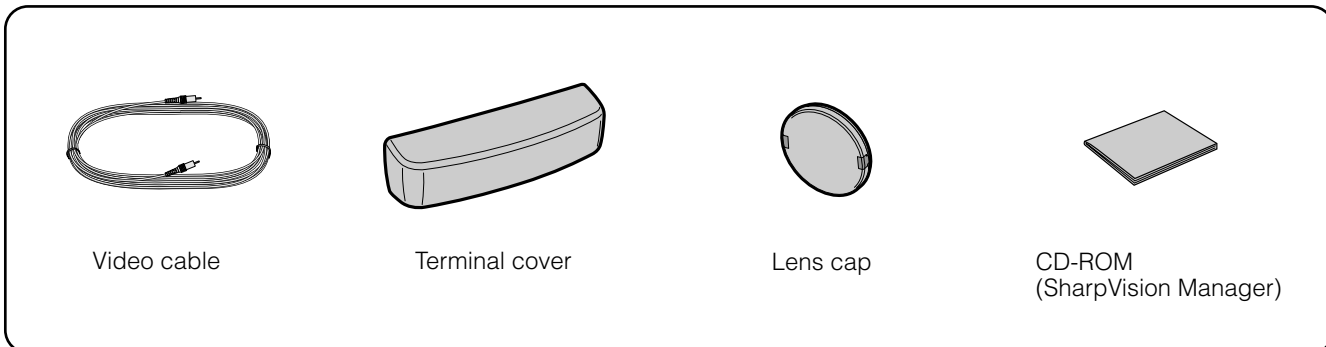
Video cable

Terminal cover

Lens cap

CD-ROM (SharpVision Manager)

Two projector operation manuals
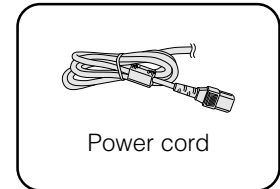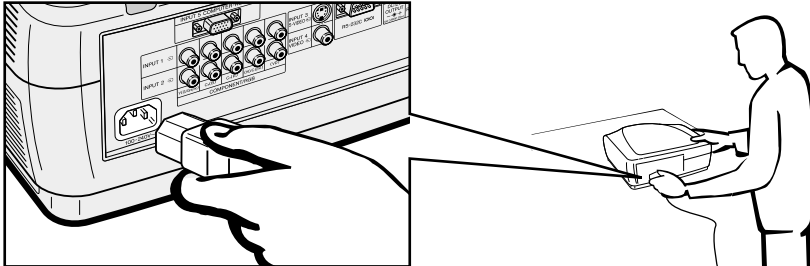
SharpVision Manager operation manual

Power Supply

Connecting the Power Cord
Plug the supplied power cord into the AC socket on the back of the projector.

Power cord

⚠ CAUTION

• Make sure the power cord is firmly connected into the AC socket.

NOTE ▶

• The configuration of wall outlets differs from country to country. Use the power cord that corresponds to the wall outlet in your country.
• The projector will enter the stand-by mode after turning the power off and then re-plugging the power cord into the AC socket. However, if you turned off the power by disconnecting the power cord or because of a power failure, the projector will automatically turn on without pressing the **POWER ON** button.

Connecting to Video Equipment

You can connect your projector to a VCR, laser disc player, DVD player, DTV* decoder and other video equipment.
* DTV is the umbrella term used to describe the new digital television system in the United States.

⚠ CAUTION

• Make sure to turn both the projector and the video equipment off, before connecting.

NOTE ▶

• As this projector is not equipped with audio input terminals, commercially available audio equipment or your own equipment (such as speakers or amplifiers) should be used.

Connecting a video source (VCR, laser disc player, DVD player or DTV decoder) using the INPUT 3 S-VIDEO and INPUT 4 VIDEO terminals
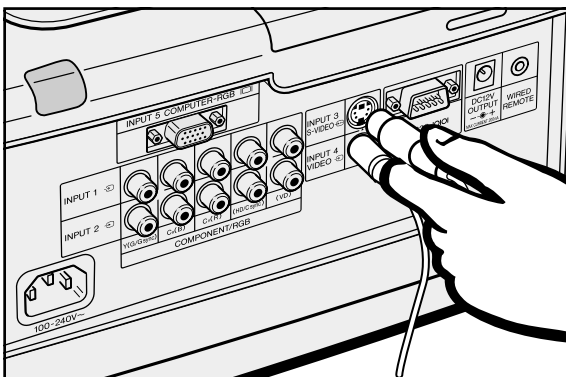

① Connect one end of the S-video cable (commercially available) to the **INPUT 3 S-VIDEO** terminal, or one end of the video cable to the **INPUT 4 VIDEO** terminal on the projector.
② Connect the other end of the S-video cable or the video cable to the S-video output or Video output terminal of the video source.

The S-video input terminal uses a video signal system where the picture is separated into a colour and luminance signal to realise a higher-quality image.

NOTE ▶

• For higher quality video, you may use the S-video input terminal on the projector. S-video cable is commercially available.
• If your video equipment does not have an S-video output terminal, use the composite video output terminal.

Projector

S-video cable (commercially available)

② To S-video output terminal

Video cable

② To video output terminal

**VCR,
Laser disc player,
DVD player or
DTV decoder**
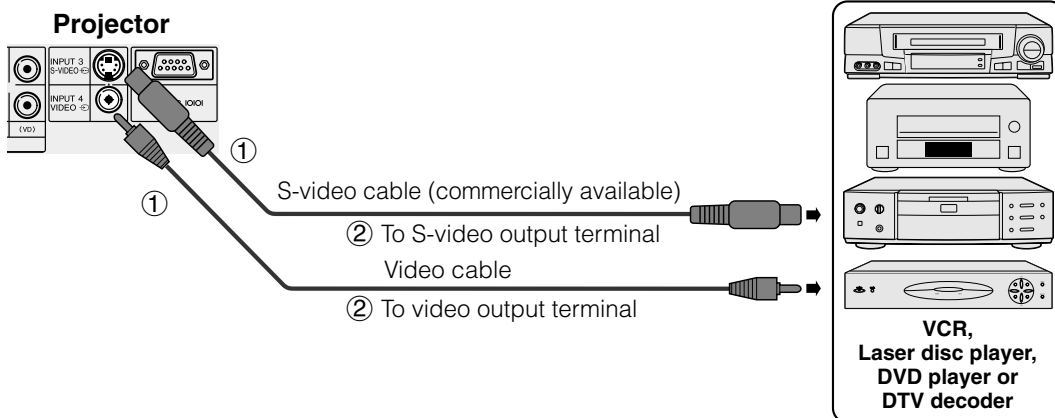
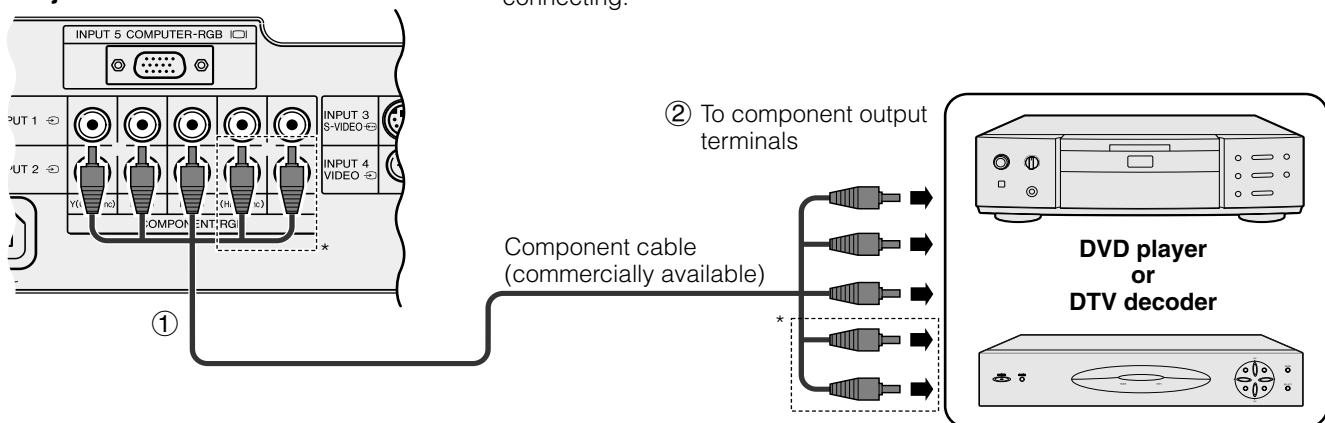## Connecting a video source (DVD player or DTV decoder) using the RCA INPUT 1 or 2 terminals
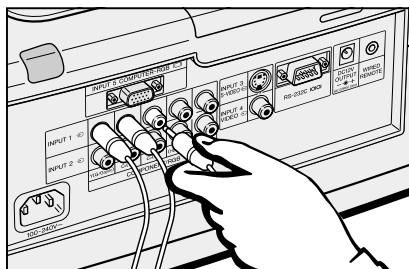
① Connect each RCA connector of a component cable to the corresponding RCA INPUT 1 or 2 terminals on the projector.
② Connect the other end of the cable to the corresponding terminals on a DVD player or DTV decoder.

When connecting this projector to a DVD player or DTV decoder, select "Component" for "Signal Type" on the GUI menu. (See page 31.)

⚠ CAUTION
• Make sure to turn both the projector and the video equipment off, before connecting.

Projector

② To component output terminals

Component cable
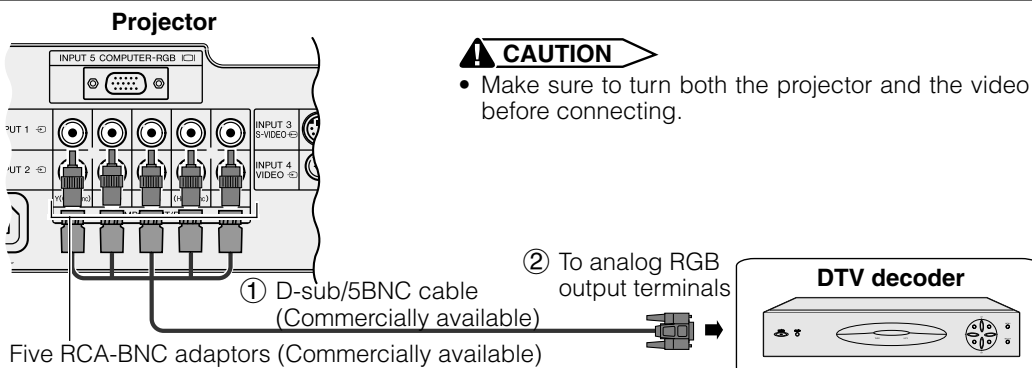(commercially available)

**DVD player
or
DTV decoder**

* 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.

Connecting to a DTV decoder with analog RGB output
① Connect each RCA connector to the corresponding RCA INPUT 1 or 2 terminals on the projector.
② Connect the other end of cable to the corresponding terminals on a DTV decoder.

When connecting this projector to analog RGB output of the DTV decoder, select "RGB" for "Signal Type" on the GUI menu. (See page 31).

Projector

⚠ CAUTION
• Make sure to turn both the projector and the video equipment off, before connecting.

② To analog RGB output terminals

① D-sub/5BNC cable
(Commercially available)

DTV decoder

Five RCA-BNC adaptors (Commercially available)

Connecting to a Computer

You can connect your projector to a computer for projection of full colour computer images.

Connecting to a computer using the INPUT 5 COMPUTER-RGB port

1 Connect one end of the COMPUTER-RGB cable to the INPUT 5 COMPUTER-RGB port on the projector.
2 Connect the other end of the corresponding port on a computer.

⚠ CAUTION
• Before connecting, be sure to turn both the projector and the computer off. After making all connections, turn the projector on first. The computer should always be turned on last.

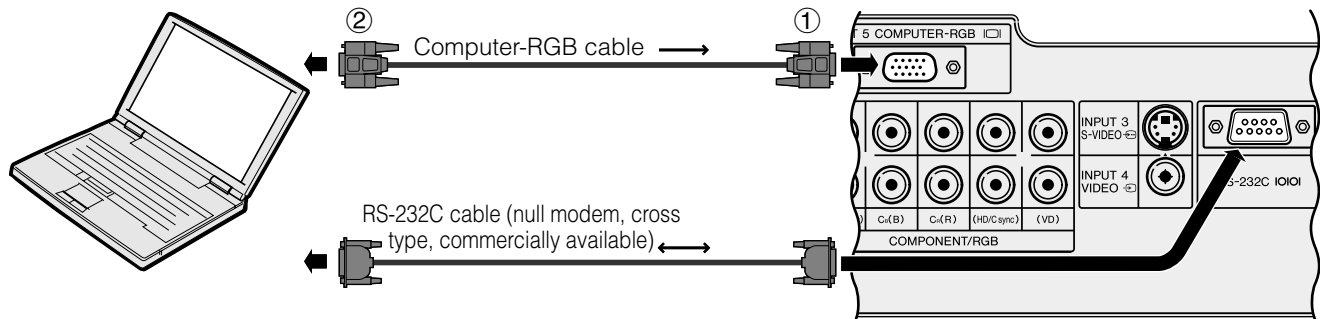| When connecting this projector to a computer, select "RGB" for "Signal Type" on the GUI menu. (See page 31) |
|---|

Connecting other compatible computers

When connecting the projector to a compatible computer other than an IBM-PC (VGA/SVGA/XGA/SXGA) or Macintosh (i.e. Workstation), a separate cable may be needed. Please contact your dealer for more information.

When connecting this projector to a computer, select "RGB" for "Signal Type" on the GUI menu. (See page 31)

NOTE
• Connecting computers other than the recommended types may result in damage to the projector, the computer, or both.

Connecting RS-232C port

When the RS-232C port 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 52, 53 and 54 for details.

Connect an RS-232C cable (null modem, cross type, commercially available) to the serial port on the computer.

⚠ CAUTION
• Do not connect or disconnect an RS-232C cable to or from the computer while it is on. This may damage your computer.

NOTE
• Please read the computer's operation manual carefully.
• Refer to "Computer Compatibility Chart" on page 56 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.
• The RS-232C function may not operate if your computer port is not correctly set up. Please refer to the operation manual of the computer for details.
• The arrows (→, ↔) in the configuration above indicate the direction of the signals.
• A Macintosh adaptor may be required for use with some Macintosh computers. Contact your nearest Sharp Authorised Projector Dealer or Service Centre.
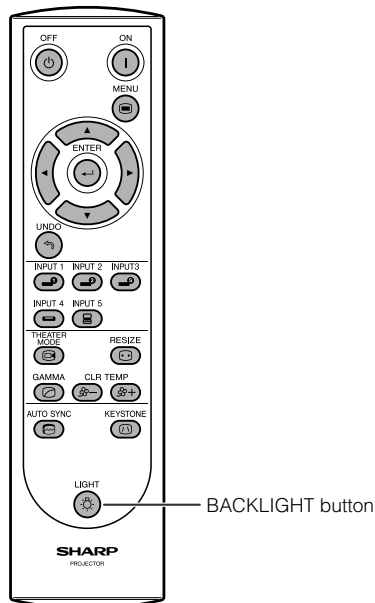
🔧 Operating the Remote Control

Remote Control

7 m   30°

45°   30°

45°

30°
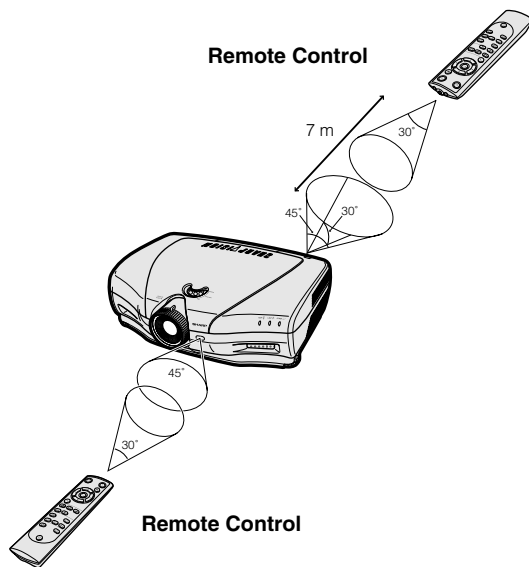
Remote Control

The remote control can be used to control the projector within the range shown on the left.

| 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.

OFF ON

MENU

ENTER

UNDO

INPUT 1 INPUT 2 INPUT3

INPUT 4 INPUT 5

THEATER
MODE   RESIZE

GAMMA   CLR TEMP

AUTO SYNC   KEYSTONE

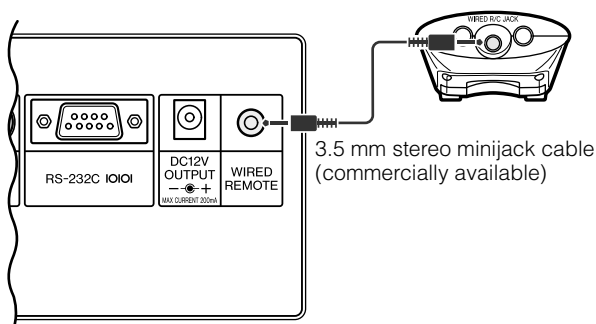LIGHT
———— BACKLIGHT button

SHARP
PROJECTOR

Using the remote control in a dark room

The backlights of the operation buttons can be turned on for five seconds and off by pressing **BACKLIGHT**. If you want to turn off the backlights while they are on, press **BACKLIGHT** again.

🔧 Using as a Wired Remote Control

WIRED R/C JACK

RS-232C ▐○▌○▐

DC12V
OUTPUT   WIRED
          REMOTE
MAX CURRENT 200mA

3.5 mm stereo minijack cable
(commercially available)

When the remote control cannot be used due to the range or positioning of the projector (rear projection, etc.), connect a 3.5 mm stereo minijack cable (commercially available) from the wired remote control jack on the top of the remote control to the Wired remote control jack on the back of the projector.
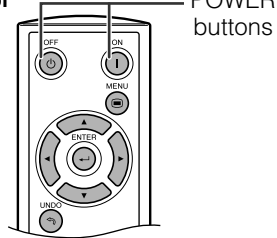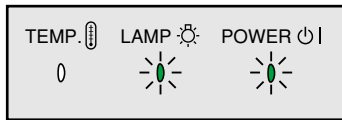
GB -16

Power ON/OFF

Projector

Remote control POWER buttons
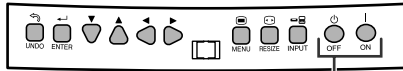
Maintenance indicator

TEMP. LAMP POWER

Press **POWER ON**.

- The flashing blue LAMP REPLACEMENT indicator shows that the lamp is warming up. Wait until the indicator stops flashing before operating the projector.
- If the power is turned off and then immediately turned on again, it may take a short while before the lamp turns on.

NOTE

- After the projector is unpacked and turned on for the first time, a slight odour may be emitted from the exhaust ventilative hole. This odour will soon disappear with use.

When the power is on, the LAMP REPLACEMENT indicator lights, indicating the status of the lamp.
Blue: Lamp is ready.
Flashing blue: Warming up.
Red: Change the lamp.

Press **POWER OFF**.

Press **POWER OFF** again while the message is displayed.

NOTE

- If you accidentally pressed **POWER OFF** and do not want to turn off the power, wait until the message disappears.
- When **POWER OFF** is pressed twice, the POWER indicator will light up red and the cooling fan will run for about 90 seconds. The projector will then enter standby mode.
- Wait until the cooling fan stops running before disconnecting the power cord.
- The power can be turned on again by pressing **POWER ON**. When the power is turned on, the POWER indicator and the LAMP REPLACEMENT indicators light blue.

Zooming and Focusing

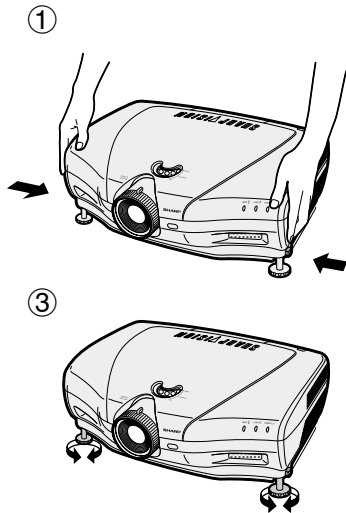The picture can be zoomed in or out, and focused by the Zoom knob and the Focus ring.
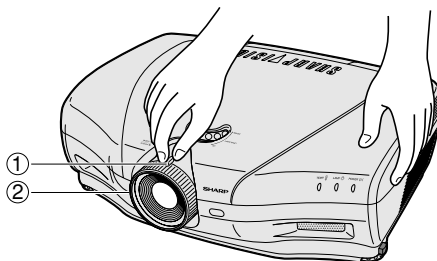
① Slide the Zoom knob. The image can be adjusted to the desired size within the zoom range.

② Rotate the Focus ring until the image on the screen becomes clear.

Using the Adjustment Feet

①

③

You can adjust the height of the image by raising the projector with the foot releases.

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.
③ If the screen is at an angle, the adjusters can be used to adjust the angle of the image.

Returning the projector to its original position
While holding the projector, press the foot releases and slowly lower the projector to its original position.

⚠ CAUTION

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

NOTE

• The projector is adjustable up to approximately 5° 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 19 for details on the keystone correction.

Using the Lens Shift

The picture can be adjusted within the shift range of the lens by rotating the lens shift dial on the top of the projector using your finger.

Projector

Lens shift dial

DOWN   UP

SHARP▽ISION

Projected Image

UP

DOWN

Keystone Correction

③

④b

②

①,④a
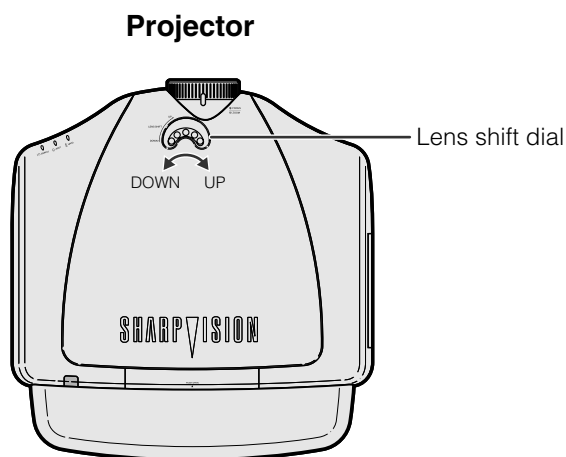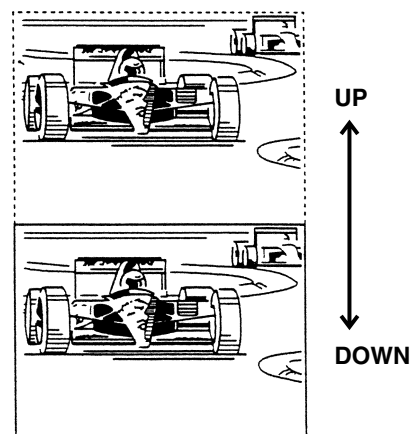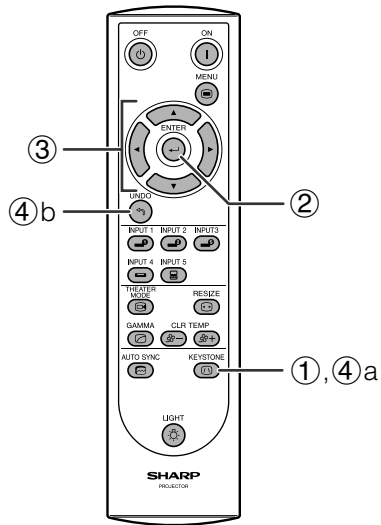
This function can be used to adjust the Keystone settings.
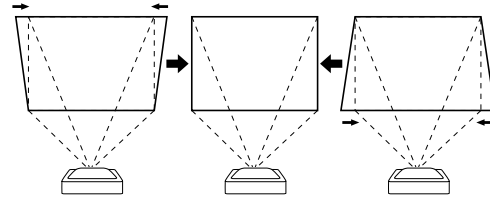
① Press **KEYSTONE** on the remote control.

② Press **ENTER** to display the test pattern.

③ Press ▲/▼/◄/► to make adjustments.

④ a. Press **KEYSTONE** to return to the normal screen.
b. To reset the Keystone setting, press **UNDO**.

NOTE ►
• Straight lines and the edges of the displayed image may appear jagged, when adjusting the Keystone setting.

Adjusting the Projection Distance

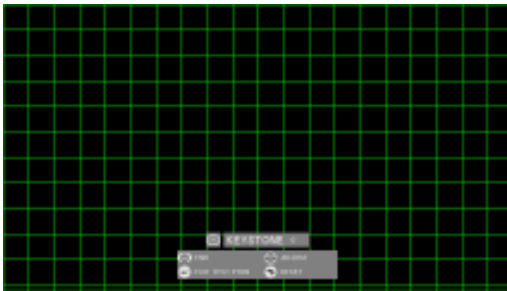Position the projector perpendicular to the screen with all feet flat and leveled to achieve an optimal image. Move the projector forward or backward if the edges of the image are distorted.

NOTE
- The projector lens should be centred in the middle of the screen. If the lens centre is not perpendicular to the screen, the image will be distorted, making viewing difficult.
- Position the screen so that it is not in direct sunlight or room light. Light falling directly onto the screen washes out colours, making viewing difficult. Close the curtains and dim the lights when setting up the screen in a sunny or bright room.
- A polarising 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 screen size. (See the tables below.) The figures in the tables are based upon projecting an image so that it occupies the entire screen.
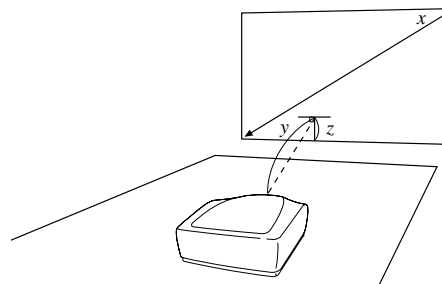
When using a normal screen (4:3)
In case of setting the 16:9 picture to the full horizontal width of the 4:3 screen.

☐ : Screen area
▨ : Picture area
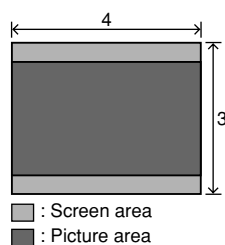
Screen size (4:3)			Projection Distance (y)		Distance from the lens centre to the lower edge of the image (z)	
Diag. (x)	Width	Height	Maximum (y_1)	Minimum (y_2)	Upper (z_1)	Lower (z_2)
635 cm (250")	508 cm (200")	381 cm (150")	12.6 m (41'4")	9.3 m (30'6")	0 cm (0")	−286 cm (−12'6")
508 cm (200")	406 cm (160")	305 cm (120")	10.1 m (33')	7.4 m (24'4")	0 cm (0")	−229 cm (−10')
381 cm (150")	305 cm (120")	229 cm (90")	7.5 m (24'9")	5.6 m (18'3")	0 cm (0")	−171 cm (−7'6")
254 cm (100")	203 cm (80")	152 cm (60")	5.0 m (16'5")	3.7 m (12'1")	0 cm (0")	−114 cm (−5')
213 cm (84")	170 cm (67")	127 cm (50")	4.2 m (13'9")	3.1 m (10'2")	0 cm (0")	−96 cm (−4'2")
183 cm (72")	147 cm (58")	109 cm (43")	3.6 m (11'10")	2.6 m (8'8")	0 cm (0")	−82 cm (−3'7")
152 cm (60")	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.) = $(0.05058x - 0.0447) \times 3.28$
y_2 (Min.) = $(0.03734x - 0.0447) \times 3.28$
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.

▨ : Picture area

Screen size (16:9)			Projection Distance (y)		Distance from the lens centre to the lower edge of the image (z)	
Diag. (x)	Width	Height	Maximum (y_1)	Minimum (y_2)	Upper (z_1)	Lower (z_2)
762 cm (300")	663 cm (261")	373 cm (147")	16.5 m (54'1")	12.2 m (39'11")	0 cm (0")	−374 cm (−12'3")
635 cm (250")	554 cm (218")	312 cm (123")	13.7 m (45'1")	10.1 m (33'3")	0 cm (0")	−311 cm (−10'3")
508 cm (200")	442 cm (174")	249 cm (98")	11.0 m (36')	8.1 m (26'7")	0 cm (0")	−249 cm (−8'2")
381 cm (150")	333 cm (131")	188 cm (74")	8.2 m (26'12")	6.1 m (19'11")	0 cm (0")	−187 cm (−6'2")
338 cm (133")	295 cm (116")	165 cm (65")	7.3 m (23'11")	5.4 m (17'7")	0 cm (0")	−166 cm (−5'5")
269 cm (106")	234 cm (92")	132 cm (52")	5.8 m (18'11")	4.3 m (13'11")	0 cm (0")	−131 cm (−4'4")
254 cm (100")	221 cm (87")	125 cm (49")	5.5 m (17'11")	4.0 m (13'2")	0 cm (0")	−125 cm (−4'1")
234 cm (92")	203 cm (80")	114 cm (45")	5.0 m (16'5")	3.7 m (12'1")	0 cm (0")	−114 cm (−3'9")
213 cm (84")	185 cm (73")	104 cm (41")	4.6 m (15')	3.4 m (11'1")	0 cm (0")	−105 cm (−3'5")
183 cm (72")	160 cm (63")	89 cm (35")	3.9 m (12'10")	2.9 m (9'6")	0 cm (0")	−90 cm (−2'11")
152 cm (60")	132 cm (52")	74 cm (29")	3.3 m (10'8")	2.4 m (7'10")	0 cm (0")	−75 cm (−2'5")
102 cm (40")	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.) = $(0.05510x - 0.04593) \times 3.28$
y_2 (Min.) = $(0.04068x - 0.04369) \times 3.28$
z_1 (Upper) = 0
z_2 (Lower) = $-0.4904x$

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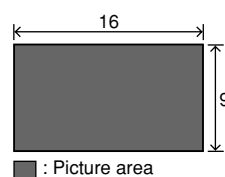z : Distance from the lens centre to the lower edge of the screen

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.
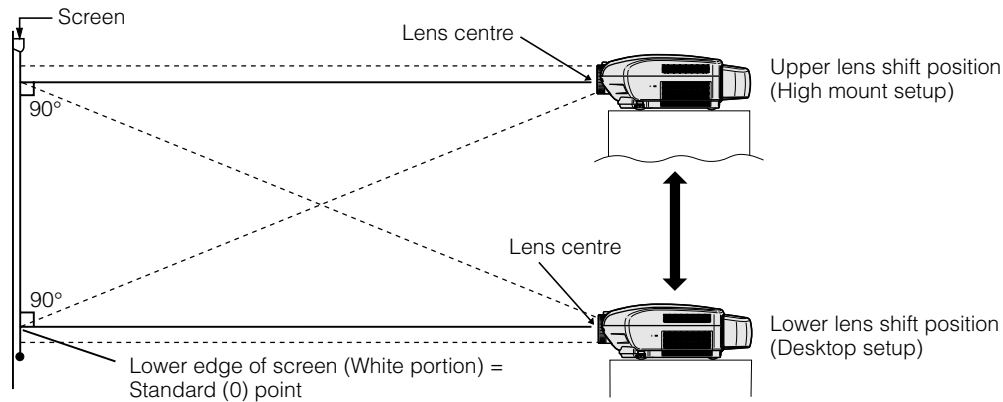
Ⓖ -20

Upper and Lower Lens Shift Position

- This projector is equipped with a lens shift function that lets you adjust the projection height.
- Adjust it to match the setup configuration.
- The screen can be moved maximum the length of one screen vertically using the lens shift.

NOTE ▶
- Optimal image quality is produced with the projector positioned perpendicular to the screen with all feet flat and level. Tilting or angling the projector will reduce the effectiveness of the lens shift function.

Screen size: 254 cm (100 inches)
Aspect ratio: 16:9

Screen
Lens centre
Upper lens shift position
(High mount setup)
90°
Lens centre
90°
Lower lens shift position
(Desktop setup)
Lower edge of screen (White portion) =
Standard (0) point

Upper and Lower Lens Shift Position (Ceiling Mount)

When the projector is in the inverted position, use the upper edge of the screen as the base line, and exchange the lower and upper lens shift values.

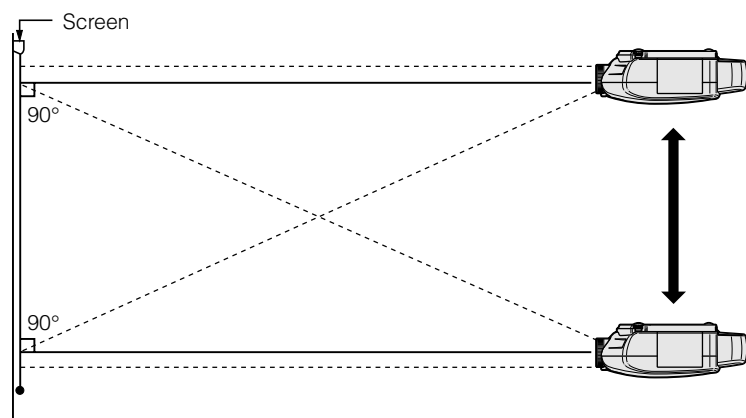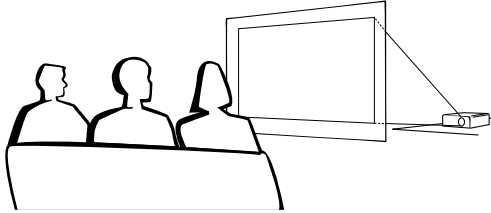Screen size: 254 cm (100 inches)
Aspect ratio: 16:9

Screen
90°
90°

Image Projection

Rear Projection

- Place a translucent screen between the projector and the audience.
- Use the projector's menu system to reverse the projected image. (See page 43 for use of this function.)

NOTE

- Optimal image quality can be achieved when the projector is positioned perpendicular to the screen with all feet flat and leveled.

Projection Using a Mirror
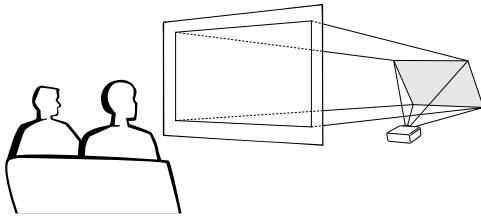
- When the distance between the projector and screen is not sufficient for normal rear projection, you can use a mirror to reflect the image onto the screen.
- Place a mirror (normal flat type) in front of the lens.
- Project the normal image onto the mirror.
- The image reflected from the mirror is projected onto the translucent screen.

⚠ CAUTION

- 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 Projection
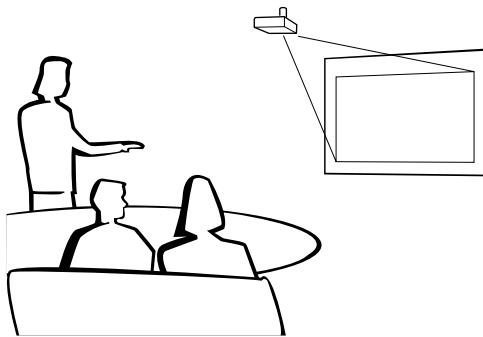
- It is recommended that you use the optional Sharp ceiling-mount bracket for this installation.
- Before mounting the projector, contact your nearest Sharp Authorised Projector Dealer or Service Centre to obtain the recommended ceiling-mount bracket (sold separately). (AN-TK202 ceiling-mount bracket, AN-TK201 extension tube, AN-NV6T ceiling adaptors for AN-TK202 or AN-TK201)
- When the projector is in the inverted position, use the upper edge of the screen as the base line.
- Use the projector's menu system to select the appropriate projection mode. (See page 43 for use of this function.)

Setup & Connections

Selecting the Input Signal Source

INPUT buttons
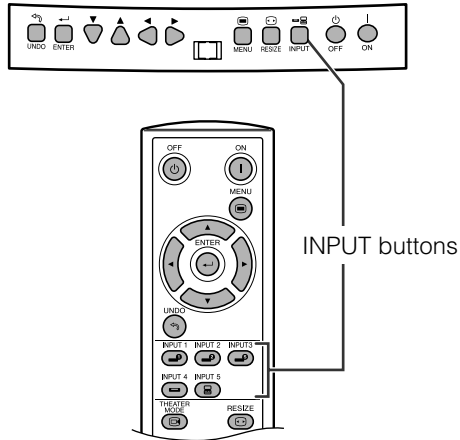
Press **INPUT** on the projector, **INPUT 1**, **INPUT 2**, **INPUT 3**, **INPUT 4** or **INPUT 5** on the remote control to select the desired input mode.

NOTE ▶
• When no signal is received, "NO SIGNAL" will be displayed. When a signal that the projector is not preset to receive is received, "NOT REG." will be displayed.

On-screen Display

INPUT 1 Mode → INPUT 2 Mode → INPUT 3 Mode

INPUT 5 Mode ← INPUT 4 Mode
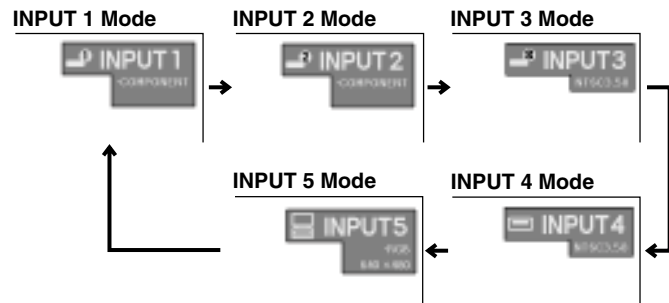
Adjusting the Picture Aspect Ratio
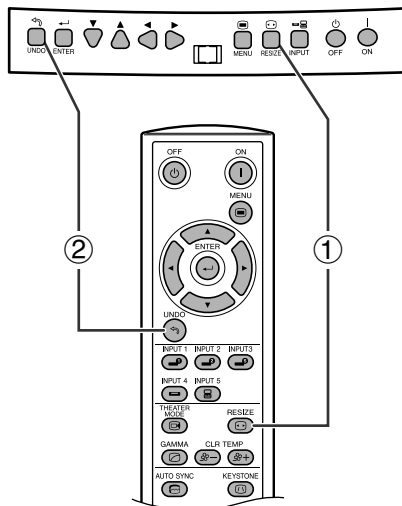
This function allows you to modify or customize the picture display mode to enhance the input image. Depending on the input signal, you can choose SIDE BAR, SMART STRETCH, CINEMA ZOOM, STRETCH, NORMAL, or DOT BY DOT image.

① Press **RESIZE**. Each time **RESIZE** is pressed, the picture mode changes as shown on the next page.

② To return to the standard image, press **UNDO** while "RESIZE" is displayed on the screen.

Operation Buttons

VIDEO/DVD/DTV

Input Signal	Output screen image			
	SIDE BAR	SMART STRETCH	CINEMA ZOOM	STRETCH
For 4:3 aspect ratio				
480i 480P NTSC PAL SECAM / Letter box image				
With squeeze				
720P 1080i / For 16:9 aspect ratio				

EXAMPLE

		SIDE BAR	SMART STRETCH	CINEMA ZOOM	STRETCH
For 4:3 aspect ratio	480i 480P 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
	1080i	–	–	–	1280 × 720

COMPUTER

Input Signal	Output screen image	
	NORMAL	DOT BY DOT
VGA / For 4:3 aspect ratio (640 × 480)		
SVGA / For 4:3 aspect ratio (800 × 600)		
XGA / For 4:3 aspect ratio (1024 × 768)		
SXGA / For 5:4 aspect ratio (1280 × 1024)		
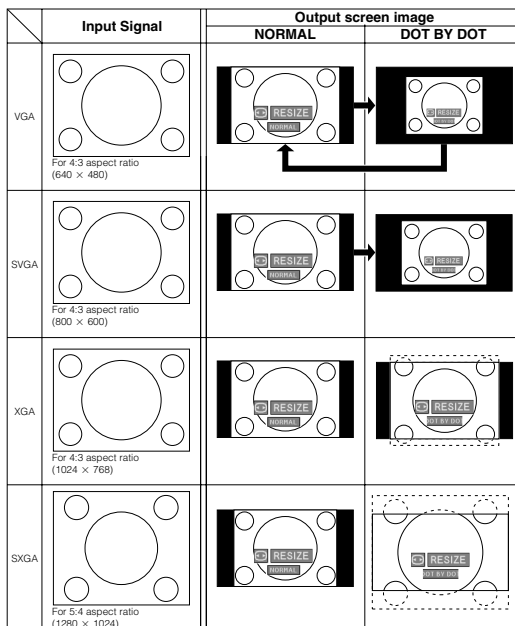
EXAMPLE

		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

Operation Buttons

Gamma Correction Function
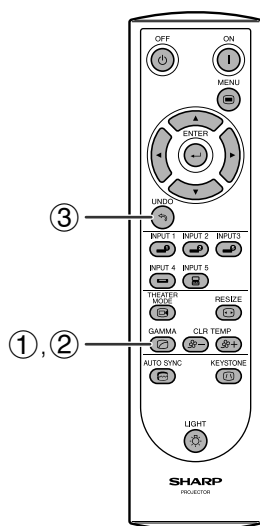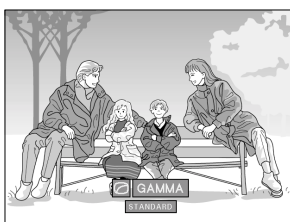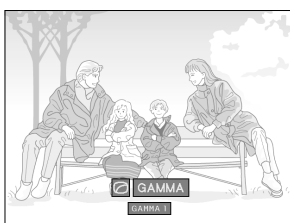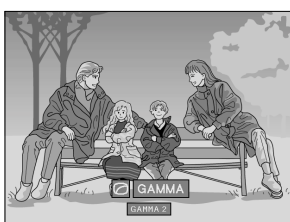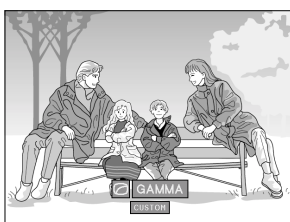
- Gamma is an image quality enhancement function that offers a richer image by brightening the darker portions of the image without altering the brightness of the brighter portions.
- Four gamma settings are available to allow for differences in the images displayed and in the brightness of the room.
- When you are displaying images with frequent, dark scenes, such as a film or concert, or when you are displaying images in a bright room, this feature makes the dark scenes easier to see and gives the impression of greater depth in the image.

Gamma Modes

Selected Mode	Gamma mode
STANDARD	Standard picture without gamma correction.
GAMMA 1	Brightens darker portions of images for more enhanced presentations.
GAMMA 2	Gives greater depth to darker portions of images for a more exciting theatre experience.
CUSTOM	Allows you to adjust gamma value using SharpVision Manager (supplied).

① Press **GAMMA** to display "GAMMA".

② Then, the present Gamma mode is displayed. Each time **GAMMA** is pressed, the gamma level toggles as shown on the left.

③ To return to the standard image, press **UNDO** while "GAMMA" is displayed on the screen.

NOTE ▶

- The CUSTOM setting of VIDEO mode optimizes the video source to reproduce the image more beautifully. It darkens bright portions of the image and gives greater depth to darker portions of the image.
  Select CUSTOM as your default setting if you prefer a smooth textured image to a sharply contrasted one.
- STANDARD and GAMMA 2 settings of VIDEO mode (except COMPONENT 480P/720P/1080i) incorporate a DYNAMIC GAMMA function for optimizing GAMMA correction frame by frame in real time, thus providing a more beautiful image.
- GAMMA 1 settings are the same for both RGB and VIDEO modes.

On-screen Display

STANDARD

GAMMA 1

GAMMA 2

CUSTOM

 Basic Operations
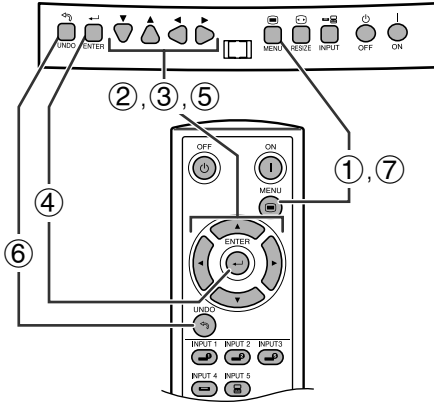
This projector has two sets of menu screens that allow you to adjust the image and various projector settings. These menu screens can be operated from the projector or the remote control with the following procedure.

(GUI) On-screen Display

INPUT 3, 4 (VIDEO) mode

Main menu

Sub menu
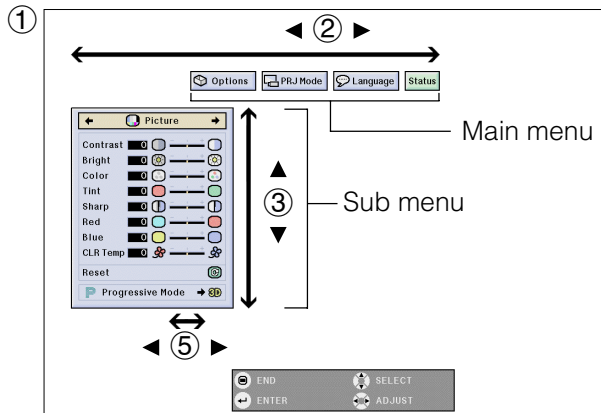
INPUT 1, 2 (COMPONENT) or 5 (RGB) mode
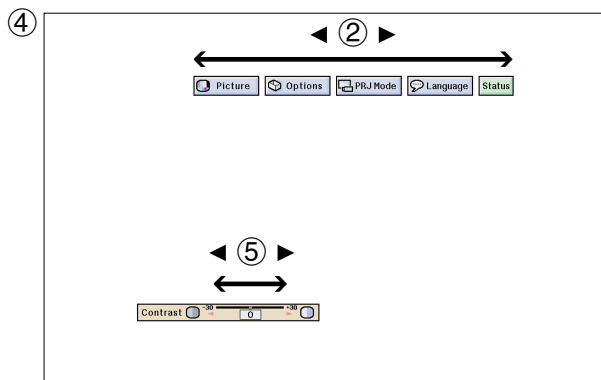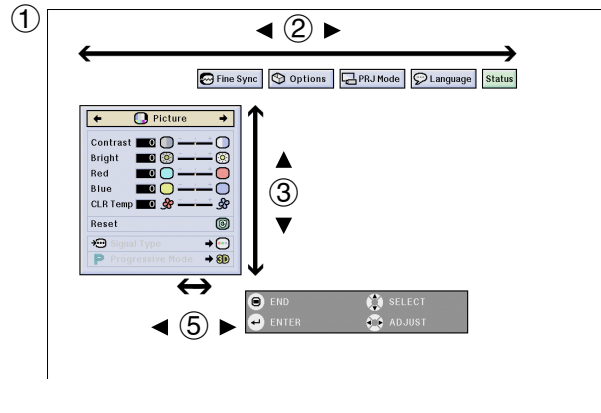
① Press **MENU** to display the INPUT 1, 2, 3, 4 or 5 mode menu bar.

② Press ◀/▶ to select an adjustment main menu on the menu bar.

③ Press ▲/▼ to select a specific adjustment item.

④ To display a single adjustment item, press **ENTER** after selecting the item. Only the menu bar and the selected adjustment item will appear.

⑤ Press ◀/▶ to adjust the item.

⑥ Press **UNDO** to return to the previous screen.

⑦ To exit the GUI, press **MENU**.

NOTE ▶

• For details on items on the menu screen, see the tree charts on pages 27 and 28.

Basic Operation

GB -26

Items on the INPUT 3 or 4 Mode Menu Bar

Main menu	**Sub menu**	
Picture	Contrast $-30 \leftrightarrow +30$	
	Brightness $-30 \leftrightarrow +30$	
	Color $-30 \leftrightarrow +30$	
	Tint $-30 \leftrightarrow +30$	
	Sharp $-30 \leftrightarrow +30$	
	Red $-30 \leftrightarrow +30$	
	Blue $-30 \leftrightarrow +30$	
	CLR Temp $-3 \leftrightarrow +3$	
	Reset	
	Progressive Mode	2D Progressive
		3D Progressive
		Film Mode
Options	3D DNR [ON/OFF]	
	Theater Mode [NORMAL/BRIGHT]	
	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	
	RS232C Port [ON/OFF]	
	Auto Power Off [ON/OFF]	
	RS-232C	9600bps
		38400bps
		115200bps *
	Subtitle $-30 \leftrightarrow +30$	

Main menu	**Sub menu**
PRJ Mode	Front
	Ceiling + Front
	Rear
	Ceiling + Rear
Language	English
	Deutsch
	Español
	Nederlands
	Français
	Italiano
	Svenska
	Português
	汉语
	한국어
	日本語
Status	

* These values may be changed using the RESIZE mode.

NOTE
• Only the items highlighted in the tree charts above can be adjusted.
• To adjust the items under the sub menu, press ► after selecting the sub menu.

Basic Operation

Ⓖ -27

Items on the INPUT 1, 2 or 5 Mode Menu Bar

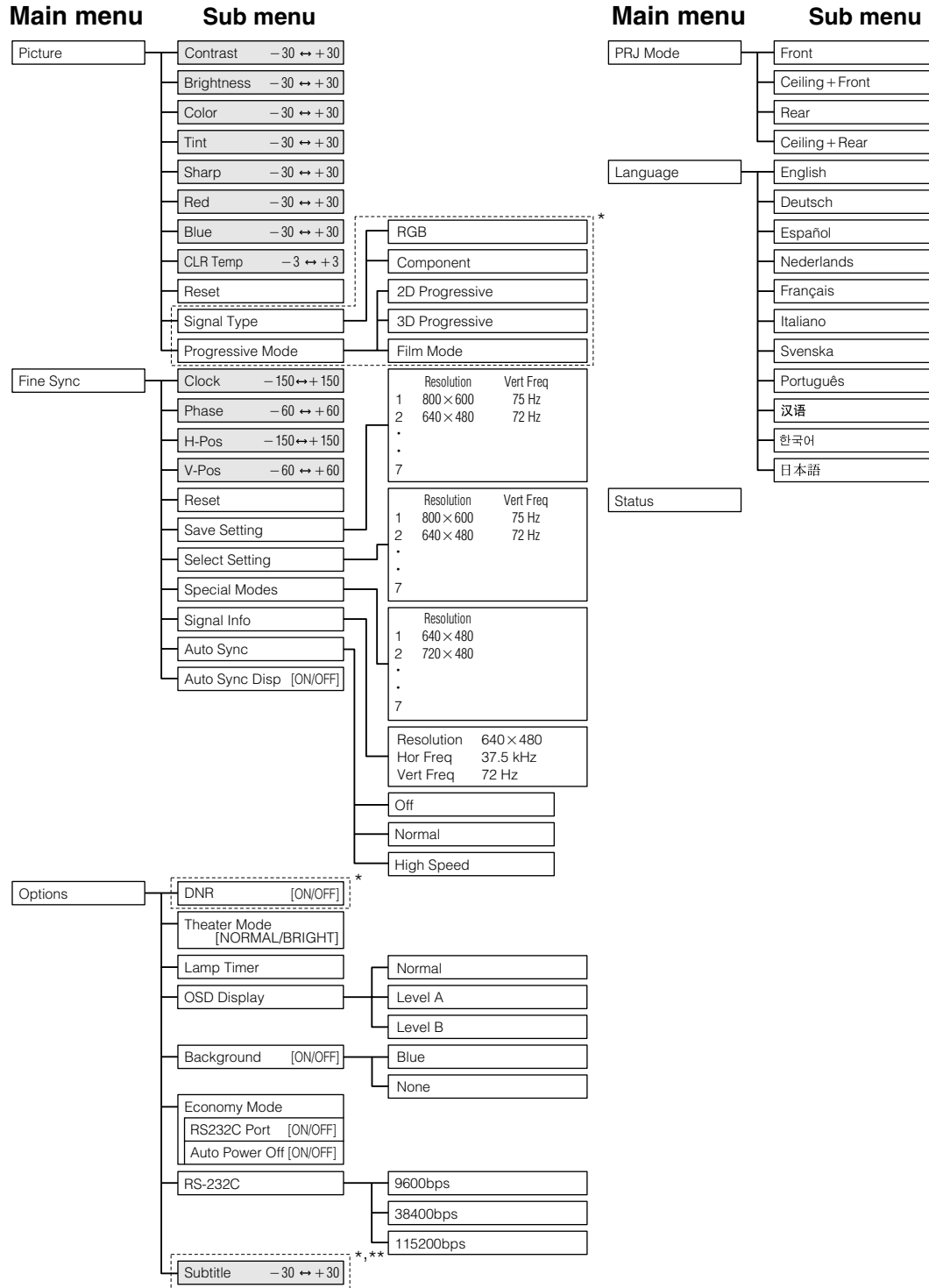| Main menu	Sub menu		Main menu	Sub menu
Picture	Contrast $-30 \leftrightarrow +30$		**PRJ Mode**	Front
	Brightness $-30 \leftrightarrow +30$			Ceiling + Front
	Color $-30 \leftrightarrow +30$			Rear
	Tint $-30 \leftrightarrow +30$			Ceiling + Rear
	Sharp $-30 \leftrightarrow +30$		**Language**	English
	Red $-30 \leftrightarrow +30$			Deutsch
	Blue $-30 \leftrightarrow +30$	RGB *		Español
	CLR Temp $-3 \leftrightarrow +3$	Component		Nederlands
	Reset	2D Progressive		Français
	Signal Type	3D Progressive		Italiano
	Progressive Mode	Film Mode		Svenska
				Português
				汉语
				한국어
				日本語

Fine Sync

Clock $-150 \leftrightarrow +150$
Phase $-60 \leftrightarrow +60$
H-Pos $-150 \leftrightarrow +150$
V-Pos $-60 \leftrightarrow +60$
Reset
Save Setting
Select Setting
Special Modes
Signal Info
Auto Sync
Auto Sync Disp [ON/OFF]

	Resolution	Vert Freq
1	800 × 600	75 Hz
2	640 × 480	72 Hz
.		
.		
7		

	Resolution	Vert Freq
1	800 × 600	75 Hz
2	640 × 480	72 Hz
.		
.		
7		

	Resolution
1	640 × 480
2	720 × 480
.	
.	
7	

Resolution	640 × 480
Hor Freq	37.5 kHz
Vert Freq	72 Hz

Off
Normal
High Speed

Status

Options

DNR [ON/OFF] *
Theater Mode [NORMAL/BRIGHT]
Lamp Timer
OSD Display → Normal / Level A / Level B
Background [ON/OFF] → Blue / None
Economy Mode
RS232C Port [ON/OFF]
Auto Power Off [ON/OFF]
RS-232C → 9600bps / 38400bps / 115200bps
Subtitle $-30 \leftrightarrow +30$ *,**

* Not displayed in the INPUT 5 mode. The "3D" function is not available in INPUT 1, 2 or 5. (Therefore, "DNR" is displayed on the On-screen Display of INPUT 1, 2 or 5.)

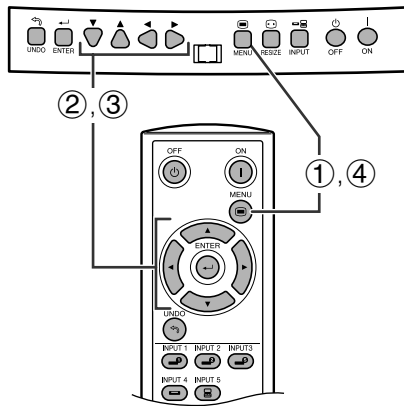** These values may be changed using the RESIZE mode.

NOTE
- The resolution, vertical frequency and horizontal frequency figures displayed above are for example purposes only.
- "Color", "Tint", and "Sharp" appear only when Component is selected in INPUT 1 or 2 mode.
- Only the items highlighted in the tree charts above can be adjusted.
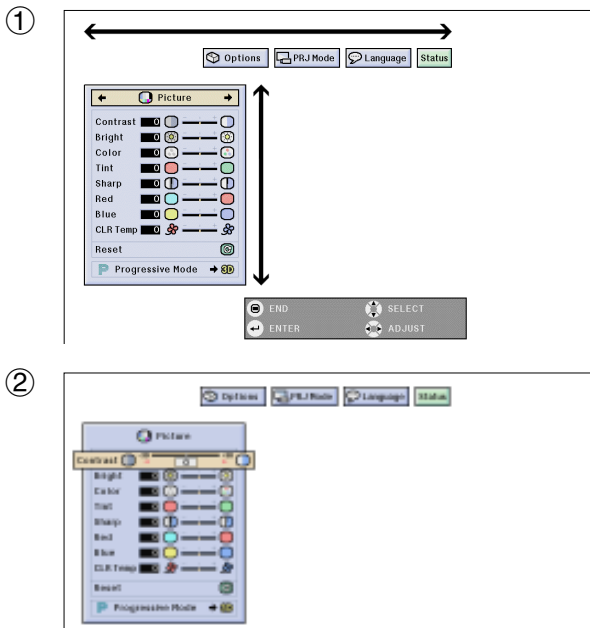- To adjust the items under the sub menu, press ► after selecting the sub menu.

Basic Operation

GB -28

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

Description of Adjustment Items

Selected item	◄ button	► button
Contrast	For less contrast	For more contrast
Brightness	For less brightness	For more brightness
Color	For less colour intensity	For more colour intensity
Tint	Skin tones become purplish	Skin tones become greenish
Sharp	For less sharpness	For more sharpness
Red	For weaker red	For stronger red
Blue	For weaker blue	For stronger blue
Reset	All image adjustment items are returned to the factory preset settings.	

**(GUI) On-screen Display
e. g. (VIDEO input in INPUT 3 or 4 mode)**

NOTE
* "Color", "Tint" and "Sharp" do not appear for RGB input in INPUT 5 mode.

① Press **MENU**. Menu bar and "Picture" menu screen appear. GUI operation guide is also displayed.

② Press ▲/▼ to select a specific adjustment item.

③ Press ◄/► to move the ■ mark of the selected adjustment item to the desired setting.
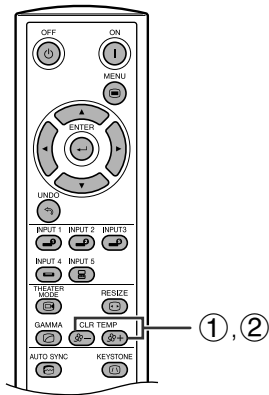
④ To exit the GUI, press **MENU**.

NOTE
* To reset all adjustment items, select "Reset" on the "Picture" menu screen and press **ENTER**.
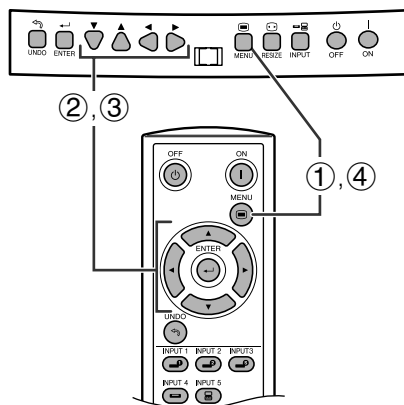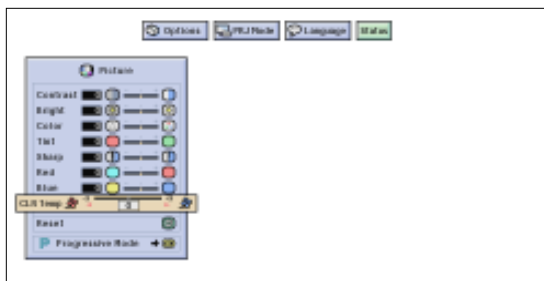* The adjustments can be stored separately in the INPUT 1 to 5 modes.

Basic Operation

Adjusting the Colour Temperature

This function can be used to adjust the colour temperature to suit the type of image input to the projector (DVD, video, computer image, TV broadcast, etc.).

This function can be operated using the **CLR TEMP** buttons on the remote control, as well as the GUI menu screen.

On-screen Display

Adjusting the Colour Temperature with the Remote Control

① Press **CLR TEMP** (–/+) on the remote control. Then, the present colour temperature level is displayed.

② Press **CLR TEMP** (–/+) to change the colour temperature level.

NOTE ▶

- The descriptions of each of the button operations are shown on the table below.
- " CLR TEMP " disappears after four-seconds of no-operation.

Adjusting the Colour Temperature using the GUI Menu Screen

Description of Colour Temperature

–3 (Red) ◀ button	▶ button (Blue) +3
Decreases colour temperature for warmer, reddish, incandescent-like images. (Low colour temperature)	Increases colour temperature for cooler, bluish, florescent-like images. (High colour temperature)

① Press **MENU**. Menu bar and "Picture" menu screen appear. GUI operation guide is also displayed.

② Press ▲/▼ to select "CLR Temp".

③ Press ◀/▶ to move the ■ mark of the colour temperature setting to the desired setting.

④ To exit the GUI, press **MENU**.

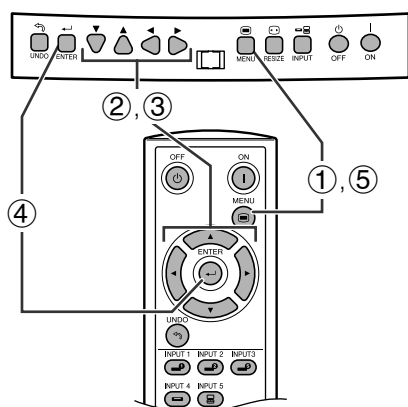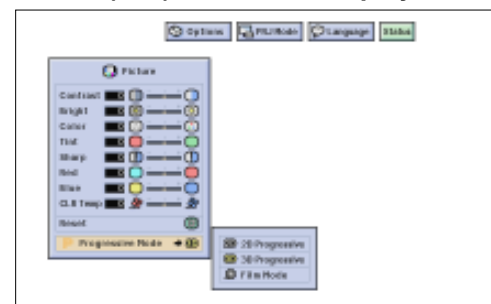**(GUI) On-screen Display**

Basic Operation
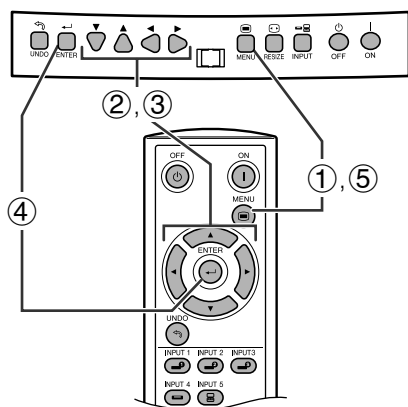
(GUI) On-screen Display

Selecting the Signal Type

This function allows you to select the input signal type COMPONENT or RGB for INPUT 1 or 2.

① Press **MENU**. Menu bar and "Picture" menu screen appear. GUI operation guide is also displayed.

② Press ▲/▼ to select "Signal Type", and then press ▶.

③ Press ▲/▼ to select "RGB" or "Component".

④ Press **ENTER** to save the setting.

⑤ To exit the GUI, press **MENU**.

(GUI) On-screen Display

Progressive Mode

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

① Press **MENU**. Menu bar and "Picture" menu screen appear. GUI operation guide is also displayed.

② Press ▲/▼ to select "Progressive Mode", and then press ▶.

③ Press ▲/▼ to select "2D Progressive", "3D Progressive" or "Film Mode".

④ Press **ENTER** to save the setting.

⑤ To exit the GUI, press **MENU**.

Selects the following progressive conversion mode.

2D Progressive
This function is useful to display fast-moving images such as sports and action films. This mode optimizes the image in a displayed frame.

3D Progressive
This function is 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 software clearly. Displays the optimized image of film transformed with three-two pull down enhancement to progressive mode images.
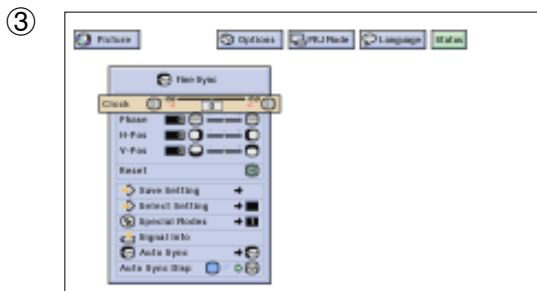
NOTE

• Film Mode cannot work with PAL 50 Hz.
• 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 to play back a high-definition image.

Basic Operation

Ⓖ -31

Adjusting the Computer Images (RGB menu only)

①,⑤

(GUI) On-screen Display

②

③
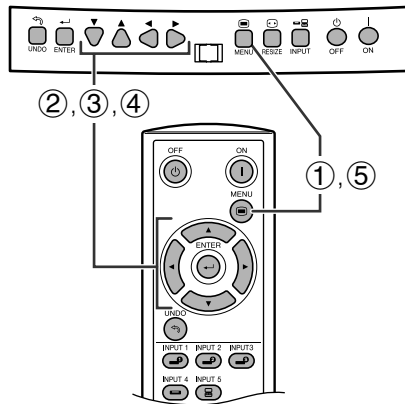
When displaying computer patterns which are very detailed (tiling, vertical stripes, etc.), interference may occur between the DMD pixels, causing flickering, vertical stripes, or contrast irregularities in portions of the screen. Should this occur, adjust "Clock", "Phase", "H-Pos" and "V-Pos" for the optimum computer image.

Description of Adjustment Items

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.
Reset	All computer image adjustment items are returned to the factory preset settings.

NOTE
• Computer image adjustments can be made easily by pressing **AUTO SYNC** (⌣) on the remote control. See page 35 for details.

(Select the desired computer input mode with **INPUT 1** or **2**.)

① Press **MENU**.

② Press ◄/► to select "Fine Sync".

③ Press ▲/▼ to select a specific adjustment item.

④ Press ◄/► to move the ■ mark of the selected adjustment item to the desired setting.
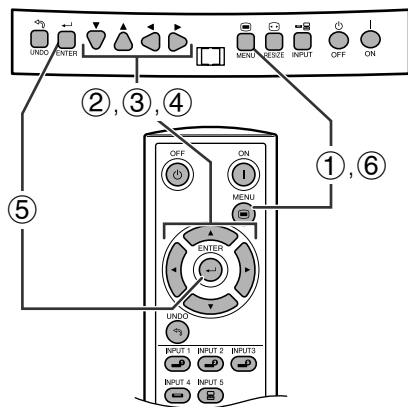
⑤ To exit the GUI, press **MENU**.

NOTE
• To reset all adjustment items, select "Reset" on the "Fine Sync" menu screen and press **ENTER**.
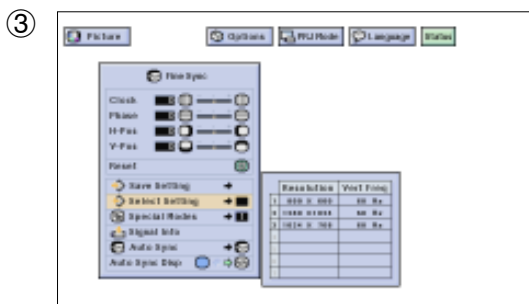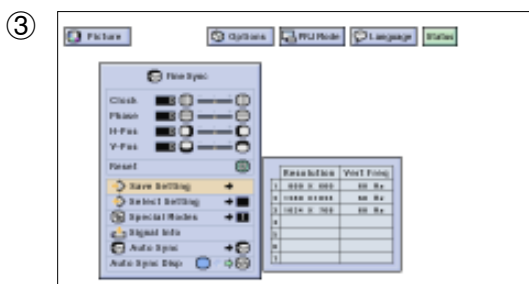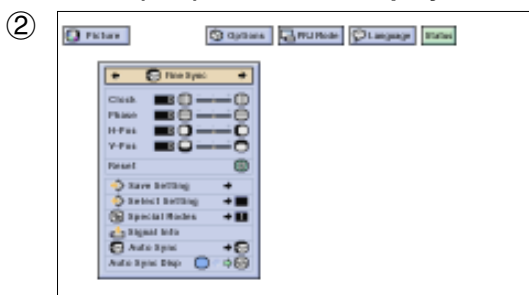• The adjustable area of each item may be changed using the input signal.

Basic Operation

Saving and Selecting Adjustment Settings

This projector allows you to store up to seven adjustment settings for use with various computers. Once these settings are stored, they can be easily selected each time you connect a computer to the projector.

Saving the adjustment setting

① Press **MENU**.

② Press ◄/► to select "Fine Sync".

③ Press ▲/▼ to select "Save Setting", and then press ►.

④ Press ▲/▼ to select the desired memory location of the setting.

⑤ Press **ENTER** to save the setting.

⑥ To exit the GUI, press **MENU**.

(GUI) On-screen Display

Selecting a saved setting

① Press **MENU**.

② Press ◄/► to select "Fine Sync".

③ Press ▲/▼ to select "Select Setting", and then press ►.

④ Press ▲/▼ to select the desired memory setting.

⑤ Press **ENTER** to select the setting.
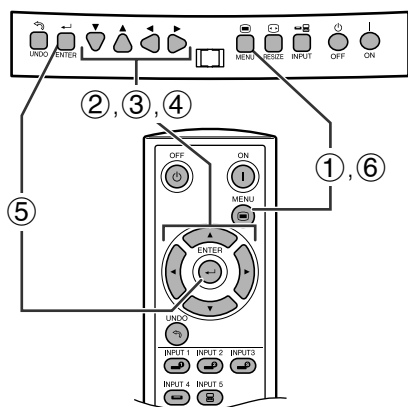
⑥ To exit from the GUI, press **MENU**.

NOTE ►

• If a memory position has not been set, the resolution and frequency setting will not be displayed.
• When selecting the stored adjustment setting with "Select Setting", the computer system should match the stored setting.
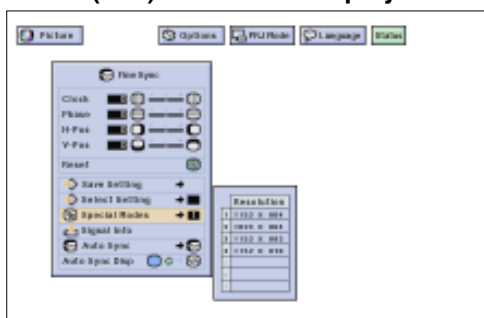
Basic Operation
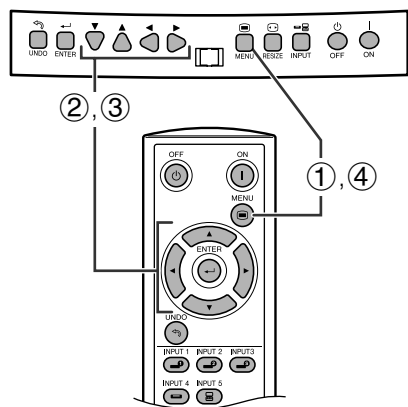
(GUI) On-screen Display

Special Mode Adjustment

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.
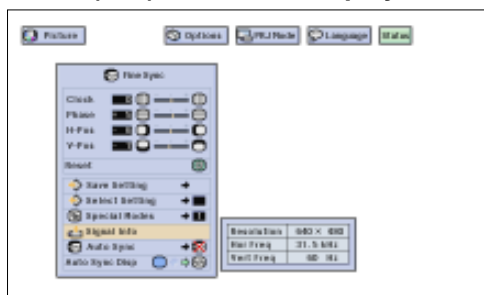
① Press **MENU**.

② Press ◄/► to select "Fine Sync".

③ Press ▲/▼ to select "Special Modes", and then press ►.

④ Press ▲/▼ to select the optimal resolution.

⑤ Press **ENTER** to save the setting.

⑥ To exit the GUI, press **MENU**.

NOTE ▷
• Avoid displaying computer patterns which repeat every other line (horizontal stripes). (Flickering may occur, making the image hard to see.)
• When inputting DTV 1080i signal, select the corresponding type of signal in step 4 above.
• When inputting 720P RGB signal, select the corresponding type of signal in step 4.
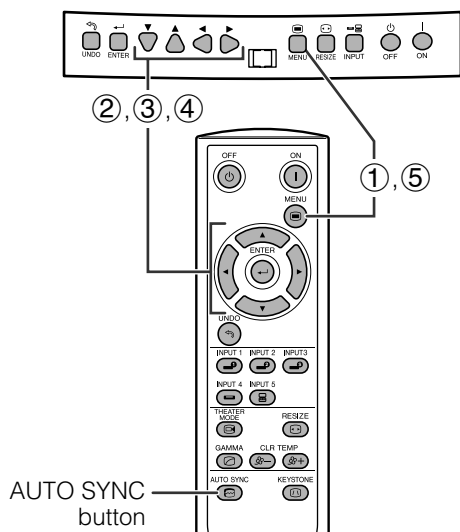
Checking the Input Signal

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

① Press **MENU**.

② Press ◄/► to select "Fine Sync".

③ Press ▲/▼ to select "Signal Info" to display the current input signal.
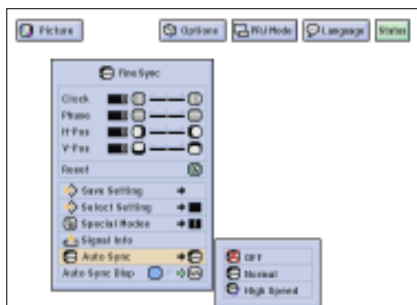
④ To exit the GUI, press **MENU**.

(GUI) On-screen Display

Basic Operation
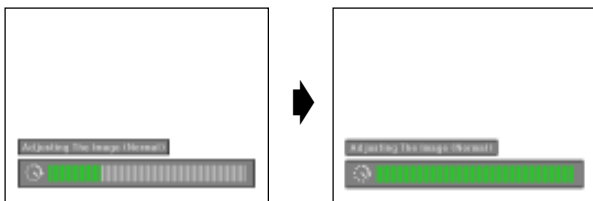
②,③,④

①,⑤

AUTO SYNC button
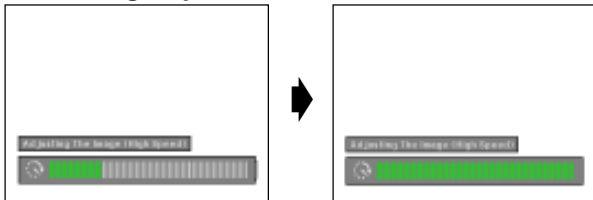
(GUI) On-screen Display

On-screen Display

When "Normal" is selected

When "High Speed" is selected

Auto Sync Adjustment

- Used to automatically adjust a computer image.
- Auto Sync adjustment can be made manually by pressing the **AUTO SYNC** button on the remote control, or automatically by setting "Auto Sync" to "Normal" or "High Speed" in the projector's GUI menu.

Off
- Synchronized adjustment is not automatically performed.
- Press **AUTO SYNC** to perform manual adjustment.

Normal
- Synchronized adjustment is automatically performed the same as the "High Speed" setting.
- Adjustment using the "Normal" setting takes longer to perform than using the "High Speed" setting, but it is more accurate.

High Speed
- The sync adjustment is automatically made each time the projector is turned on while connected to a computer or the input selection is changed.
- The Auto Sync adjustment setting previously made is cleared when the projector's setting is changed.

① Press **MENU**.

② Press ◄/► to select "Fine Sync".

③ Press ▲/▼ to select "Auto Sync", and then press ►.

④ Press ▲/▼ to select "Normal" or "High Speed".

⑤ To exit the GUI, press **MENU**.

NOTE ▶
- When the optimum image cannot be achieved with Auto Sync adjustment, use manual adjustments. (See page 32.)
- When performing AUTO SYNC in off or High Speed mode, if you press **AUTO SYNC** once, then press it again within one minute, AUTO SYNC will be executed in Normal mode.

During Auto Sync adjustment, the On-screen Display changes as shown on the left.

NOTE ▶
- The Auto Sync adjustment may take some time to complete, depending on the image of the computer connected to the projector.

Basic Operation

②,③,④

①,⑤
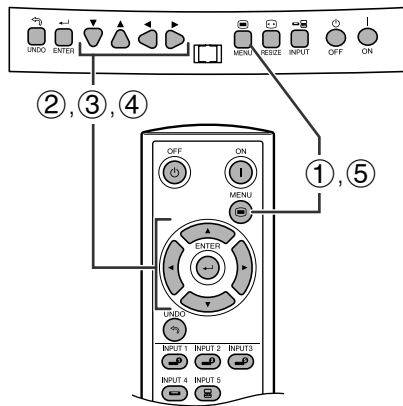
(GUI) On-screen Display
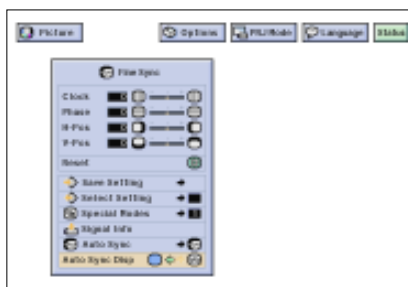
Auto Sync Display Function

Normally, an image is not superimposed during Auto Sync adjustment. You can, however, choose to superimpose a background image during Auto Sync adjustment.

① Press **MENU**.

② Press ◄/► to select "Fine Sync".

③ Press ▲/▼ to select "Auto Sync Disp".

④ Press ◄/► to select "⬤" to superimpose a background image or "〰" to remove the background image during Auto Sync adjustment.

⑤ To exit the GUI, press **MENU**.

Reducing Image Noise (VIDEO menu only)

②,③,④

①,⑤

(GUI) On-screen Display

Basic Operation
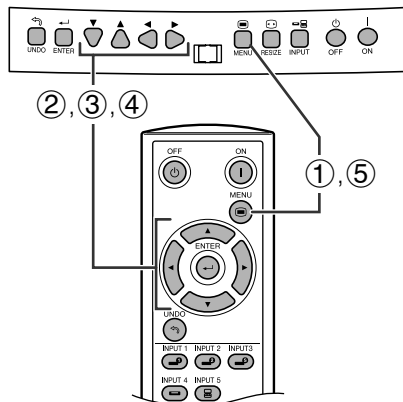
3D Digital Noise Reduction (3D DNR) provides high quality images with minimal background.

① Press **MENU**.

② Press ◄/► to select "Options".

③ Press ▲/▼ to select "3D DNR".

④ Press ◄/► to select "☐" (ON).

⑤ To exit the GUI, press **MENU**.

 NOTE

• If the image is clear, select "▨" (OFF) to prevent any blurring.
• The "3D" function is not available in INPUT 1, 2 or 5. (Therefore, "DNR" is displayed on the On-screen Display of INPUT 1, 2 or 5.)

Turning On/Off the On-screen Display

②,③,④
①,⑥
⑤

(GUI) On-screen Display
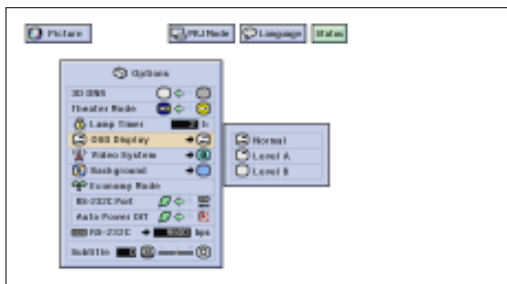
This function allows you to turn on or off the on-screen messages that appear during input select.

Description of OSD Display

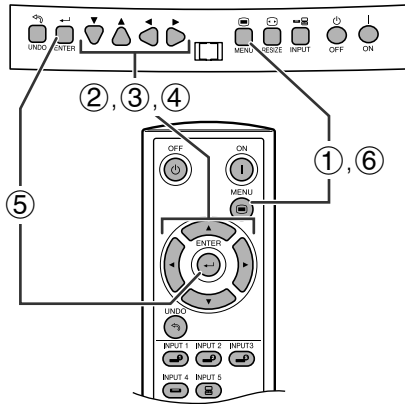| Selected item	Description
Normal	All On-screen Display are displayed.
Level A	**INPUT** and **AUTO SYNC** are not displayed.
Level B	All On-screen Display are not displayed (except **MENU**, **KEYSTONE** and warning display (**Power off**, **Temp.**, **Lamp** etc.)).

① Press **MENU**.

② Press ◄/► to select "Options".

③ Press ▲/▼ to select "OSD Display", and then press ►.

④ Press ▲/▼ to select the desired On-screen Display.

⑤ Press **ENTER** to save the setting.

⑥ To exit the GUI, press **MENU**.

Setting the Video Signal (VIDEO menu only)

②,③,④
①,⑥
⑤
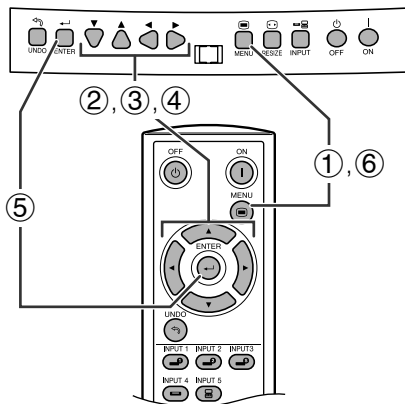
(GUI) On-screen Display
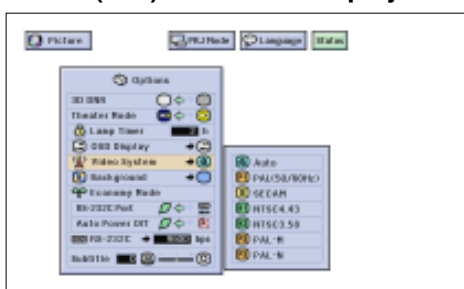
The video input system mode is preset to "Auto"; however, it can be changed to a specific system mode if the selected system mode is not compatible with the connected audiovisual equipment.

① Press **MENU**.

② Press ◄/► to select "Options".

③ Press ▲/▼ to select "Video Systems", and then press ►.

④ Press ▲/▼ to select the desired video system mode.

⑤ Press **ENTER** to save the setting.

⑥ To exit the GUI, press **MENU**.

NOTE ►
- When the system mode is set to "Auto", you may not receive a clear picture due to signal differences. Should this occur, switch to the video system of the source signal.
- AUTO cannot be set for PAL-M and PAL-N input signals. Select "PAL-M" or "PAL-N" in "Video System" menu for PAL-M and PAL-N input signals.
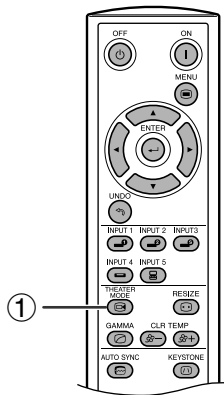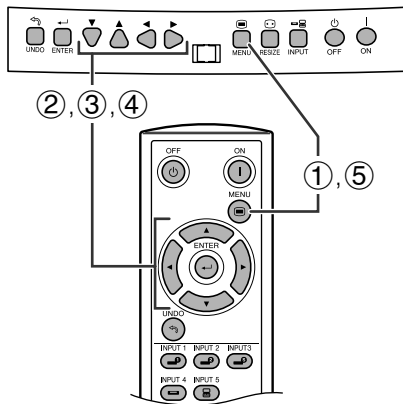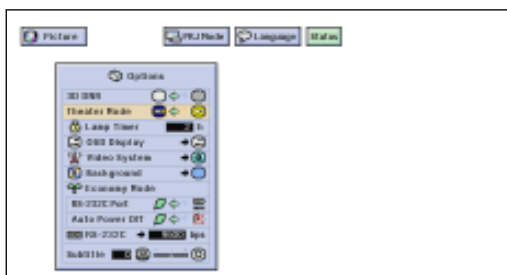
Function as a toggle switch for controlling the quantity of projected light. Select "NORMAL" or "BRIGHT" to decrease or increase brightness, power consumption and fan noise. This function can be operated using the **THEATER MODE** button on the remote control, as well as the GUI menu screen.

On-screen Display

Description of Theatre Modes

Selected item	Description
NORMAL (🔵)	Quantity of light is 70%. Power consumption is 310 W.
BRIGHT (🟡)	Quantity of light is 100%. Power consumption is 345 W.

Operating the Theatre Mode Function with the Remote Control

① Press **THEATER MODE** on the remote control. The present Theatre Mode is displayed. " 🔲 THEATER MODE " disappears after four-seconds of no-operation.

NOTE ▶

• "Theatre Mode" is factory preset to "NORMAL" .
• When selecting "BRIGHT" in "Theater Mode", the fan noise is increased.
• Even when selecting "NORMAL" in "Theater Mode", fan noise may increase if internal temperature rises enough to activate the cooling function.

Operating the Theatre Mode Function Using the GUI Menu Screen

① Press **MENU**.

② Press ◀/▶ to select "Options".

③ Press ▲/▼ to select "Theater Mode".

④ Press ◀/▶ to select "🔵" or "🟡".

⑤ To exit the GUI, press **MENU**.

(GUI) On-screen Display

Basic Operation

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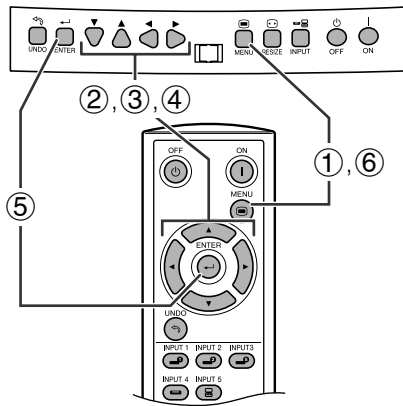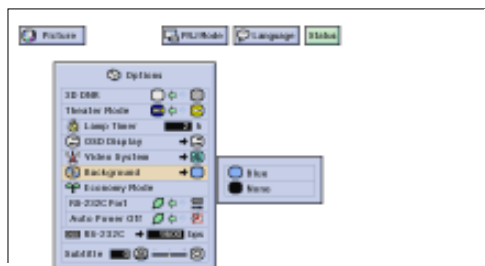
This function allows you to select the image displayed when no signal is being sent to the projector.

Description of Background Images

| Selected item	Description
Blue	Blue screen
None	Black screen

① Press **MENU**.

② Press ◄/► to select "Options".

③ Press ▲/▼ to select "Background", and then press ►.

④ Press ▲/▼ to select the background image you want to display on the screen.

⑤ Press **ENTER** to save the setting.

⑥ To exit the GUI, press **MENU**.

(GUI) On-screen Display

Subtitle Setting

② ③ ④

① ⑤
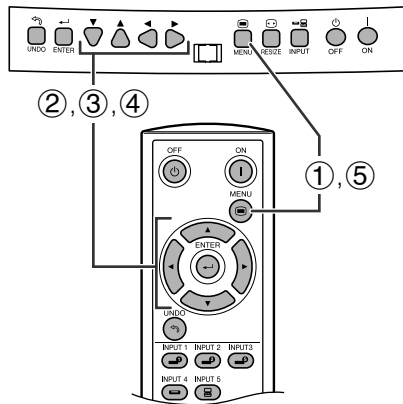
(GUI) On-screen Display

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

Description of Subtitle Setting

−30 ◄ button	+30 ► button
Compresses the image to adjust the vertical size of the display.	Enlarges the image to adjust the vertical size of the display.

① Press **MENU**.

② Press ◄/► to select "Options".

③ Press ▲/▼ to select "Subtitle".

④ Press ◄/► to move the ■ mark of the subtitle setting.

⑤ To exit the GUI, press **MENU**.

NOTE ►
- The RESIZE modes that are available for the Subtitle setting are SMART STRETCH and CINEMA ZOOM only. Please refer to the page 24 for details.
- The value of the Subtitle setting may be changed using the INPUT and RESIZE mode.
- When changing the screen with the Subtitle setting, not only the bottom of the screen rises up but also the upper side is changed to a certain point.

▲/▼
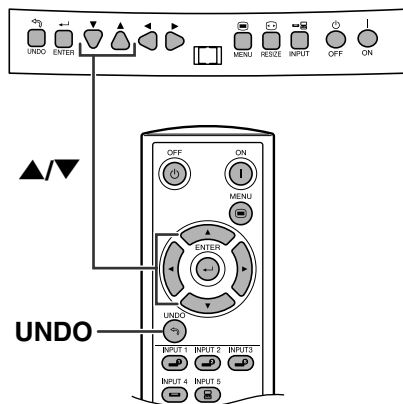
UNDO

Digital shift

When the normal image is projected (without the menu screen or most On-screen Displays* displayed), ▲/▼ can be used to shift the image down or up. Press **UNDO** to return the image center.

* This function does not work when most On-screen Displays are displayed. However, it can be used when "INPUT 1", "INPUT 2", "INPUT 3", "INPUT 4" or "INPUT 5" appears on the screen.

NOTE ►
- This function only works with certain picture mode displays.

Basic Operation

Press ▲.　　Press ▼.　　Press **UNDO.**

On the final hole.
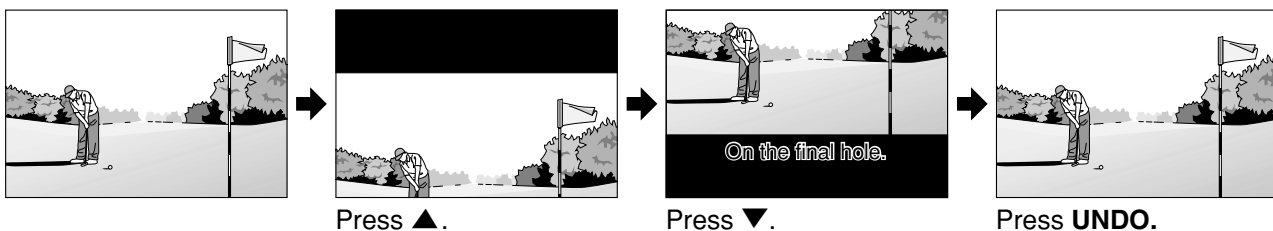
Selecting the Economy Mode

②,③,④

①,⑤

(GUI) On-screen Display

On-screen Display

Power OFF in 5 min.
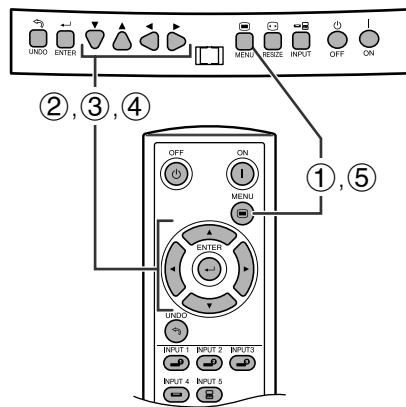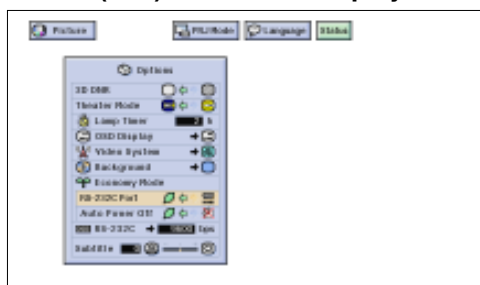
(GUI) On-screen Display
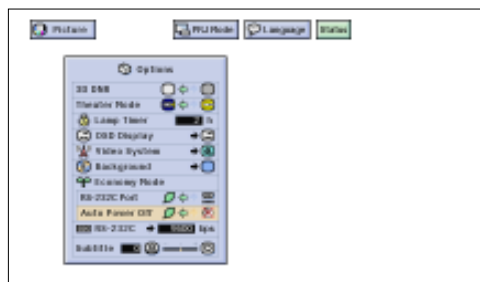
These functions allow you to reduce the power consumption when the projector is in stand-by mode.

RS-232C Off Function

This projector consumes power when using a computer connected to the RS-232C port. When not using this port, "RS-232C Port" can be set to "🍃" for reducing stand-by power consumption.

Description of RS-232C Off

🍃	Stand-by power for RS-232C connection turned off.
📟	RS-232C on

① Press **MENU**.

② Press ◄/► to select "Options".

③ Press ▲/▼ to select "RS-232C Port".

④ Press ◄/► to select "🍃" or "📟".

⑤ To exit the GUI, press **MENU**.

NOTE ►
• Set "RS-232C Port" to "📟" when using the SharpVision Manager (supplied).

Automatic Power Shut-off Function

When no input signal is detected for more than 15 minutes, the projector will automatically shut off. The on-screen message on the left will appear five minutes before the power is automatically turned off.

Description of Automatic Power Shut-off

🍃	Power automatically shuts off after 15 minutes without an input signal.
⏰	Automatic Power Shut-off disabled.

① Press **MENU**.

② Press ◄/► to select "Options".

③ Press ▲/▼ to select "Auto Power Off".

④ Press ◄/► to select "🍃" or "⏰".

⑤ To exit the GUI, press **MENU**.

NOTE ►
• "RS-232C Port" is factory preset to "📟", and "Auto Power Off" is factory preset to "🍃".

Selecting the Transmission Speed (RS-232C)
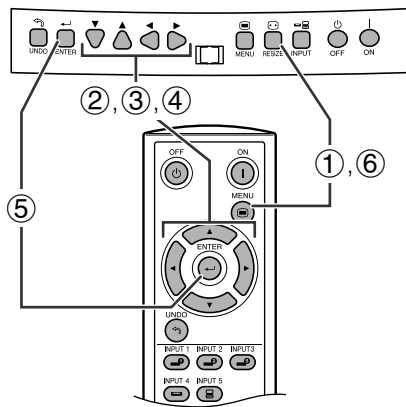
(GUI) On-screen Display
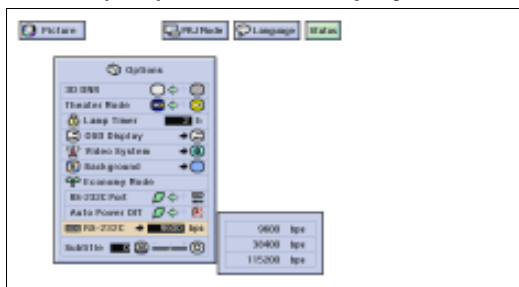
This menu allows you to adjust the transmission speed of the RS-232C connection by selecting the baud rate.

① Press **MENU**.

② Press ◄/► to select "Options".

③ Press ▲/▼ to select "RS-232C", and then press ►.

④ Press ▲/▼ to select the desired baud rate.

⑤ Press **ENTER** to save the setting.

⑥ To exit the GUI, press **MENU**.

| 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 baud rate.

Basic Operation

Reversing/Inverting Projected Images
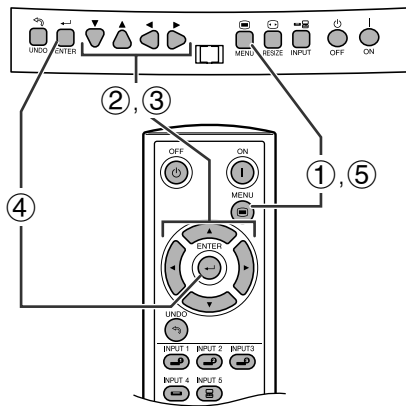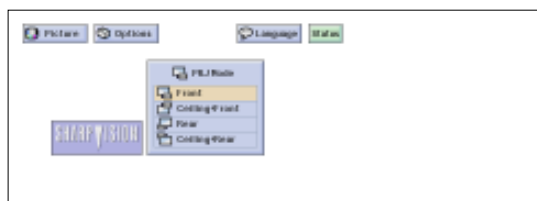
This projector is equipped with a reverse/invert image function which allows you to reverse or invert the projected image for various applications.

Description of Projected Images

Selected item	Description
Front	Normal image
Ceiling + **Front**	Inverted image
Rear	Reversed image
Ceiling + **Rear**	Reversed and inverted image

1 Press **MENU**.

2 Press ◄/► to select "PRJ Mode".

3 Press ▲/▼ to select the desired projection mode.

4 Press **ENTER** to save the setting.

5 To exit the GUI, press **MENU**.

NOTE
- This function is used for the reversed image and ceiling-mount setups. See page 22 for these setups.

(GUI) On-screen Display

Selecting the On-screen Display Language
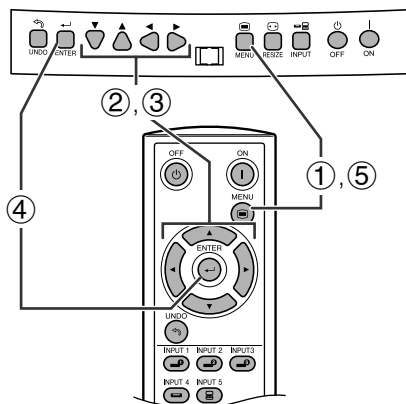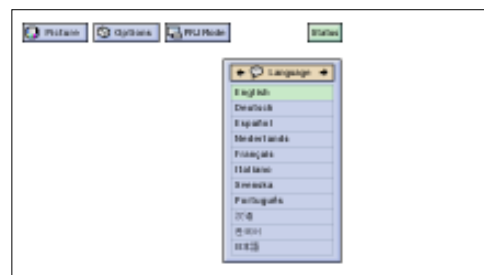
English is the preset language for the On-screen Display; however, this can be changed to German, Spanish, Dutch, French, Italian, Swedish, Portuguese, Chinese, Korean or Japanese.

1 Press **MENU**.

2 Press ◄/► to select "Language".

3 Press ▲/▼ to select the desired language.

4 Press **ENTER** to save the setting. The On-screen Display is now programmed to display in the language selected.

5 To exit the GUI, press **MENU**.

(GUI) On-screen Display

Displaying the Adjustment Settings
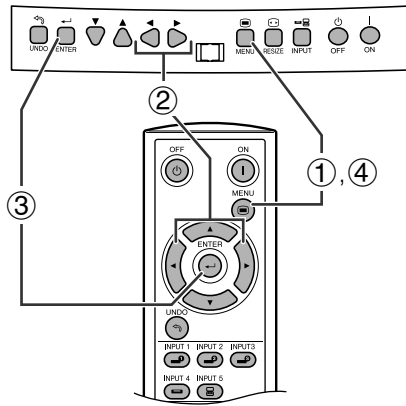
This function can be used to display all the adjusted settings on the screen simultaneously.

① Press **MENU**.

② Press ◀/▶ to select "Status".

③ Press **ENTER** to display all the adjustment settings.

④ To exit the GUI, press **MENU**.
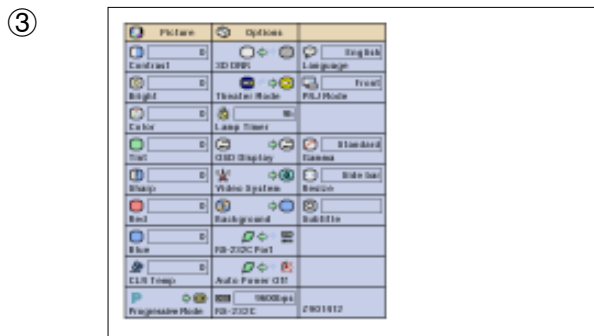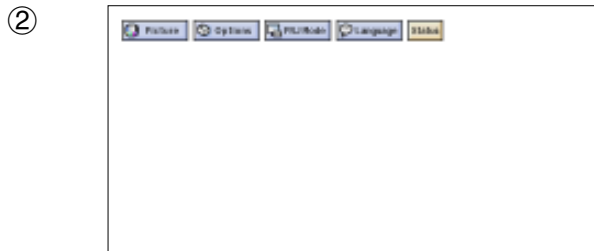
(GUI) On-screen Display

INPUT 3, 4 (VIDEO) mode

②

③

INPUT 1, 2 (COMPONENT) or 5 (RGB) mode

②

③

* The "3D" function is not available in INPUT 1, 2 or 5. (Therefore, "DNR" is displayed on the On-screen Display of INPUT 1, 2 or 5.)

Basic Operation
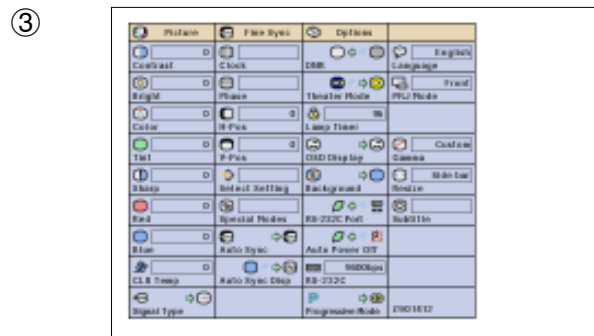
Lamp/Maintenance Indicators

Maintenance Indicators

TEMP. 🌡   LAMP ☼   POWER ⏻|

TEMPERATURE   LAMP   POWER
WARNING   REPLACEMENT   indicator
indicator   indicator
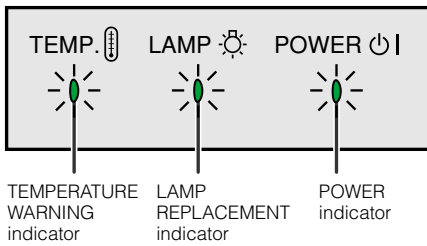
- The warning lights on the projector indicate problems inside the projector.
- There are two types of warning lights: a TEMPERATURE WARNING indicator that warns you when the projector is too hot, and a LAMP REPLACEMENT indicator that warns you when to change the lamp.
- If a problem occurs, either the TEMPERATURE WARNING indicator or the LAMP REPLACEMENT indicator will light up red. After turning off the power, follow the procedures given below.

Maintenance Indicator	Condition	Problem	Possible Solution
TEMPERATURE WARNING indicator	The internal temperature is abnormally high.	• Blocked air intake.	• Relocate the projector to an area with proper ventilation.
		• Clogged air filter.	• Clean the filters. (See page 49.)
		• Cooling fan breakdown. • Internal circuit failure.	• Take the projector to your nearest Sharp Authorised Projector Dealer or Service Centre for repair.
LAMP REPLACE-MENT indicator	The lamp does not light up.	• Burnt-out lamp. • Lamp circuit failure.	• Carefully replace the lamp. (See page 48.) • Take the projector to your nearest Sharp Authorised Projector Dealer or Service Centre for repair.
	The lamp requires replacement.	• Lamp has been used for over 1,900 hours.	

NOTE ▶

- If the TEMPERATURE WARNING indicator lights up, follow the above possible solutions and then wait until the projector has cooled down completely before turning the power back on. (At least 5 minutes.)
- If the power is turned off and then turned on again, for example during a brief rest, the LAMP REPLACEMENT indicator may be triggered, preventing the power from going on. Should this occur, unplug the power cord from the wall outlet and plug it back in again.

Maintenance & Troubleshooting

Lamp Maintenance

Confirming the Lamp Usage Time

The lamp in this projector operates for approximately 2,000 cumulative hours, depending on the usage environment. (As the usage environment can vary significantly, the projector lamp may not operate for 2,000 hours.) It is recommended that the lamp be replaced after approximately 1,900 cumulative hours of use or when you notice a significant deterioration of the picture and colour quality. The lamp usage time can be checked with the On-screen Display.

⚠ **CAUTION**
• Intense light hazard. Do not attempt to look into the aperture and lens while the projector is operating.
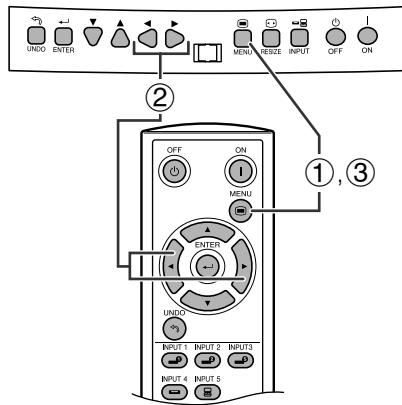
(GUI) On-screen Display
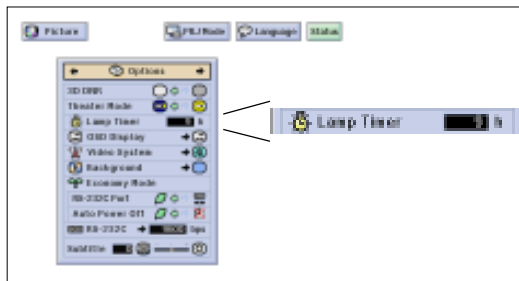
This function allows you to check the accumulated lamp usage time.

① Press **MENU**.

② Press ◄/► to select "Options". The lamp usage time will be displayed in the "Lamp Timer" of "Options".

③ To exit the GUI, press **MENU**.

NOTE
• It is recommended that the lamp be replaced after approximately 1,900 cumulative hours of use. See page 48 for lamp replacement.

Condition	Problem	Possible Solution
The LAMP REPLACEMENT indicator lights up red, and "LAMP" and "▨" will flash in yellow in the lower-left corner of the picture.	• Lamp has been used for over 1,900 hours.	• Purchase a replacement lamp unit (lamp/cage module) of the current type BQC-XVZ9000/1 from your nearest Sharp Authorised Projector Dealer or Service Centre.
A significant deterioration of the picture and colour quality occurs.		• Replace the lamp. (See page 48.) If you wish, you may have the lamp replaced at your nearest Sharp Authorised Projector Dealer or Service Centre.
The power will automatically turn off and the projector will enter stand-by mode.	• Lamp has been used for over 2,000 hours.	
"LAMP" and "▨" will flash in red in the lower-left corner of the picture, and the power will turn off.		

Maintenance & Troubleshooting

⊕ Replacing the Lamp

> **⚠ CAUTION**
> - **There is potential glass particles hazard if the lamp ruptures. In case of lamp rupture, contact your nearest Sharp Authorised Projector Dealer or Service Centre for replacement.**
> - **Do not remove the lamp cage directly after operation of the projector. The lamp may be extremely hot. Wait at least one hour after the power cord is disconnected to allow the surface of the lamp cage to fully cool down before removing the lamp cage.**

It is recommended that the lamp be replaced after approximately 1,900 cumulative hours of use or when you notice a significant deterioration of the picture and colour quality. Carefully change the lamp by following the steps on the next page.

If the new lamp does not light after replacement, take your projector to the nearest Sharp Authorised Projector Dealer or Service Centre for repair. Purchase a replacement lamp unit (lamp/cage module) of the current type BQC-XVZ9000/1 from your nearest Sharp Authorised Projector Dealer or Service Centre. Then carefully change the lamp by following the instructions on the next page. If you wish, you may have the lamp replaced at your nearest Sharp Authorised Projector Dealer or Service Centre.

Maintenance & Troubleshooting
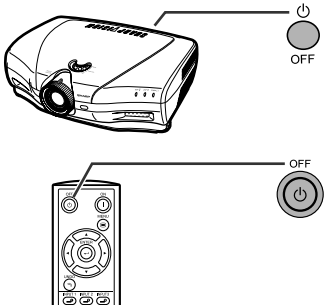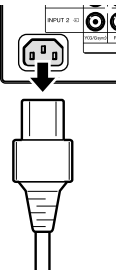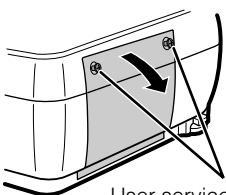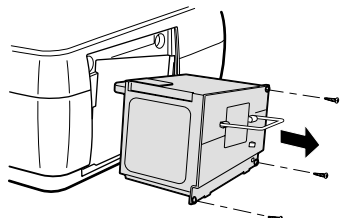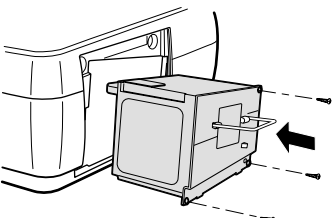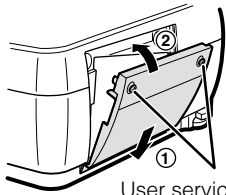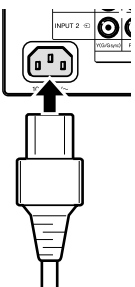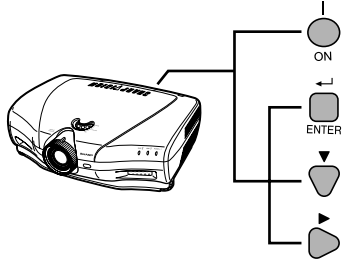
Removing and installing the lamp unit

⚠ **CAUTION**

- Be sure to remove the lamp cage by the handle. Do not touch the glass surface of the lamp cage or the inside of the projector.
- To avoid injury to yourself and damage to the lamp, carefully follow the steps below.
- Replace the lamp after turning off the power and unplugging the power cord.

1 Turn off the power.	**2** Unplug the power cord.	**3** Remove the lamp cage cover.
Press **POWER OFF**. Wait until the cooling fan stops running.		Loosen the user service screw that secures the lamp cage cover on the side of the projector. Then lower the cover in the direction of the arrow (to the open mark).
		User service screws
4 Remove the lamp cage.	**5** Insert the new lamp cage.	**6** Attach the lamp cage cover.
Remove the three-securing screws from the lamp cage. Hold the lamp cage by the handle and pull it horizontally towards you.	Press the lamp cage firmly into the lamp cage compartment. Fasten the three-securing screws.	Close the lamp cage cover in the direction of the arrow (to the close mark) on the side of the projector. Then tighten the user service screw.
		User service screws
7 Plug in the power cord.	**8** Press POWER ON on projector to reset lamp timer.	
	While holding down **ENTER**, ▼ and ▶, press **POWER ON**.	

Maintenance & Troubleshooting

NOTE ▶
- You need to reset lamp timer every time when replacing the lamp and confirm it to be reset on "Lamp Timer" menu.

Ⓖ **-48**

Cleaning the Air Filters

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

Side and Rear view

Air filter
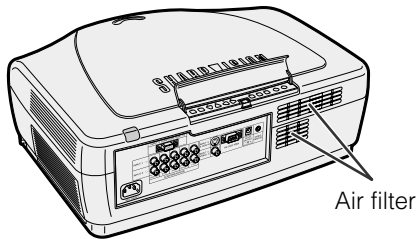
Bottom view
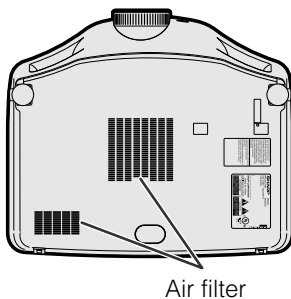
Air filter

How to clean the air filters
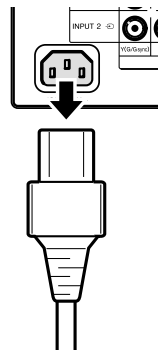
1 Unplug the power cord.	**2** Clean the air filters.
	Clean the dust off by putting the cleaner hose on the intake ventilative hole of the air filters.
INPUT 2	Cleaner hose
	Cleaner hose
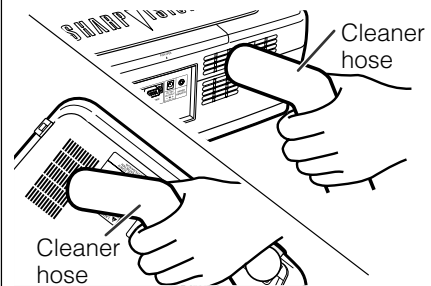
Using the Kensington Lock

Side view

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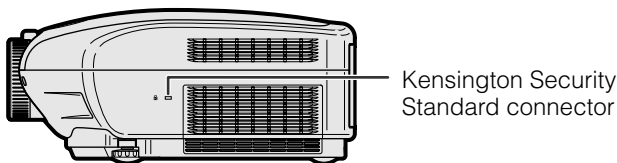
This projector has a Kensington Security Standard connector for use with a Kensington MicroSaver Security System. Refer to the information that came with the system for instructions on how to use it to secure the projector.

Problem	Check
No picture appears.	• Projector power cord is not plugged into the wall outlet. • Selected input is wrong. (See page 23.) • Cables incorrectly connected to back panel of the projector. (See pages 13–15.) • Remote control batteries have run down. (See page 11.) • "Contrast" and "Brightness" adjustments are set to minimum position. (See page 29.)
Colour is faded or poor.	• "Color" and "Tint" adjustments are not correct. (See page 29.)
Picture is blurred.	• Adjust the focus. (See page 17.) • Projection distance is too long or too short to allow for proper focus. (See pages 20 and 21.)
No OSD appears.	• OSD Display is set to "Level A" or "Level B", preventing to display some or all On-screen Displays. (See page 37.)
An unusual sound is occasionally heard from the cabinet.	• If the picture is normal, the sound is due to cabinet shrinkage caused by temperature changes. This will not affect operation or performance.
Maintenance indicator lights up.	• Refer to "Lamp/Maintenance Indicators" on page 45.
Picture noise appears.	• Adjust the "Phase" setting. (See page 32.) • Noise may appear when used with certain computers. Set the NOISE FILTER to ON using the RS-232C command. (See pages 52–54.)
Image is green on INPUT 1 or 2 COMPONENT. Image is pink (no green) on INPUT 1, 2 RGB.	• Change the input signal type. (See page 31.)

Maintenance & Troubleshooting

Connecting Pin Assignments

INPUT 5 RGB Signal Input Port: 15-pin Mini D-sub female connector
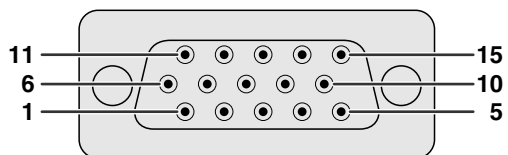
RGB Input
Analog

1. Video input (red)
2. Video input
   (green/sync on green)
3. Video input (blue)
4. Not connected
5. Composite sync
6. Earth (red)
7. Earth (green/sync on green)

8. Earth (blue)
9. Not connected
10. GND
11. GND
12. Bi-directional data
13. Horizontal sync signal
14. Vertical sync signal
15. Data clock

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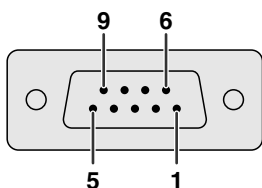
Pin No.	Signal	Name	I/O	Reference
1				Not connected
2	RD	Receive Data	Input	Connected to internal circuit
3	SD	Send Data	Output	Connected to internal circuit
4		Reserved		Connected to internal circuit
5	SG	Signal Ground		Connected to internal circuit
6		Reserved		Connected to internal circuit
7		Reserved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

Appendix

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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 15 for connection.)

Communication conditions

Set the serial port settings of the computer to match those of the table on the next page.
Signal format: Conforms to RS-232C standard.
Baud rate: 9,600 bps
Data length: 8 bits
Parity bit: NONE
Stop bit: 1 bit
Flow control: None

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-digits   Parameter 4-digits
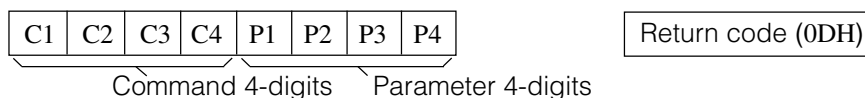
Response code format
Normal response

O	K		Return code (0DH)

Problem response (communication error or incorrect command)

E	R	R		Return code (0DH)

When more than one code is being sent, send each command only after the OK response code for the previous command from the projector is verified.

NOTE ►

• When using the computer control function of the projector, the projector operating status cannot be read to 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 "Brightness" of INPUT 1 Picture Adjustment is set to −10.

Computer   Projector

R	A	B	R	_	−	1	0	↵	→ ←	O	K	↵

Appendix

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(RS-232C) Specifications and Command Settings

BUTTONS & REMOTE CONTROL KEY
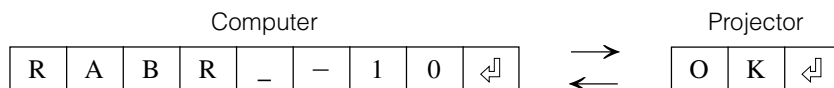
CONTROL CONTENTS	COMMAND	PARAMETER	RETURN
POWER ON	POWR	_ _ _ 1	OK OR ERR
POWER OFF	POWR	_ _ _ 0	OK OR ERR
KEYSTONE (−127 — +127)	KEYS	* * * *	OK OR ERR
INPUT 1 (COMPONENT 1)	IRGB	_ _ _ 1	OK OR ERR
INPUT 2 (COMPONENT 2)	IRGB	_ _ _ 2	OK OR ERR
INPUT 3 (S-VIDEO)	IVED	_ _ _ 2	OK OR ERR
INPUT 4 (VIDEO)	IVED	_ _ _ 1	OK OR ERR
INPUT 5 (COMPUTER-RGB)	IRGB	_ _ _ 3	OK OR ERR
AUTO SYNC START	ADJS	_ _ _ 1	OK OR ERR
INPUT 1 (COMPONENT 1) RESIZE : SIDE BAR	RASR	_ _ _ 3	OK OR ERR
INPUT 1 (COMPONENT 1) RESIZE : SMART STRETCH	RASR	_ _ _ 4	OK OR ERR
INPUT 1 (COMPONENT 1) RESIZE : CINEMA ZOOM	RASR	_ _ _ 1	OK OR ERR
INPUT 1 (COMPONENT 1) RESIZE : STRETCH	RASR	_ _ _ 2	OK OR ERR
INPUT 2 (COMPONENT 2) RESIZE : SIDE BAR	RBSR	_ _ _ 3	OK OR ERR
INPUT 2 (COMPONENT 2) RESIZE : SMART STRETCH	RBSR	_ _ _ 4	OK OR ERR
INPUT 2 (COMPONENT 2) RESIZE : CINEMA ZOOM	RBSR	_ _ _ 1	OK OR ERR
INPUT 2 (COMPONENT 2) RESIZE : STRETCH	RBSR	_ _ _ 2	OK OR ERR
INPUT 3 (S-VIDEO) RESIZE : SIDE BAR	RBSV	_ _ _ 3	OK OR ERR
INPUT 3 (S-VIDEO) RESIZE : SMART STRETCH	RBSV	_ _ _ 4	OK OR ERR
INPUT 3 (S-VIDEO) RESIZE : CINEMA ZOOM	RBSV	_ _ _ 1	OK OR ERR
INPUT 3 (S-VIDEO) RESIZE : STRETCH	RBSV	_ _ _ 2	OK OR ERR
INPUT 4 (VIDEO) RESIZE : SIDE BAR	RASV	_ _ _ 3	OK OR ERR
INPUT 4 (VIDEO) RESIZE : SMART STRETCH	RASV	_ _ _ 4	OK OR ERR
INPUT 4 (VIDEO) RESIZE : CINEMA ZOOM	RASV	_ _ _ 1	OK OR ERR
INPUT 4 (VIDEO) RESIZE : STRETCH	RASV	_ _ _ 2	OK OR ERR
INPUT 5 (COMPUTER-RGB) RESIZE : NORMAL	RCSR	_ _ _ 1	OK OR ERR
INPUT 5 (COMPUTER-RGB) RESIZE : DOT BY DOT	RCSR	_ _ _ 3	OK OR ERR
RGB GAMMA : STANDARD	GAMR	_ _ _ 1	OK OR ERR
RGB GAMMA : GAMMA1	GAMR	_ _ _ 2	OK OR ERR
RGB GAMMA : GAMMA2	GAMR	_ _ _ 3	OK OR ERR
RGB GAMMA : CUSTOM	GAMR	_ _ _ 4	OK OR ERR
VIDEO GAMMA : STANDARD	GAMV	_ _ _ 1	OK OR ERR
VIDEO GAMMA : GAMMA1	GAMV	_ _ _ 2	OK OR ERR
VIDEO GAMMA : GAMMA2	GAMV	_ _ _ 3	OK OR ERR
VIDEO GAMMA : CUSTOM	GAMV	_ _ _ 4	OK OR ERR

PICTURE

CONTROL CONTENTS	COMMAND	PARAMETER	RETURN
INPUT 1 (COMPONENT 1) CONTRAST (−30 — +30)	RAPI	_ * * *	OK OR ERR
INPUT 1 (COMPONENT 1) BRIGHTNESS (−30 — +30)	RABR	_ * * *	OK OR ERR
INPUT 1 (COMPONENT 1) RED (−30 — +30)	RARD	_ * * *	OK OR ERR
INPUT 1 (COMPONENT 1) BLUE (−30 — +30)	RABE	_ * * *	OK OR ERR
INPUT 1 (COMPONENT 1) COLOUR (−30 — +30)	RACO	_ * * *	OK OR ERR
INPUT 1 (COMPONENT 1) TINT (−30 — +30)	RATI	_ * * *	OK OR ERR
INPUT 1 (COMPONENT 1) SHARP (−30 — +30)	RASH	_ * * *	OK OR ERR
INPUT 1 (COMPONENT 1) CLR TEMP (−3 — +3)	RACT	_ _ * *	OK OR ERR
INPUT 1 (COMPONENT 1) DISPLAY	RARE	_ _ _ 0	OK OR ERR
INPUT 1 (COMPONENT 1) ADJUSTMENT RESET	RARE	_ _ _ 1	OK OR ERR
INPUT 2 (COMPONENT 2) CONTRAST (−30 — +30)	RBPI	_ * * *	OK OR ERR
INPUT 2 (COMPONENT 2) BRIGHTNESS (−30 — +30)	RBBR	_ * * *	OK OR ERR
INPUT 2 (COMPONENT 2) RED (−30 — +30)	RBRD	_ * * *	OK OR ERR
INPUT 2 (COMPONENT 2) BLUE (−30 — +30)	RBBE	_ * * *	OK OR ERR
INPUT 2 (COMPONENT 2) COLOUR (−30 — +30)	RBCO	_ * * *	OK OR ERR
INPUT 2 (COMPONENT 2) TINT (−30 — +30)	RBTI	_ * * *	OK OR ERR
INPUT 2 (COMPONENT 2) SHARP (−30 — +30)	RBSH	_ * * *	OK OR ERR
INPUT 2 (COMPONENT 2) CLR TEMP (−3 — +3)	RBCT	_ _ * *	OK OR ERR
INPUT 2 (COMPONENT 2) DISPLAY	RBRE	_ _ _ 0	OK OR ERR
INPUT 2 (COMPONENT 2) ADJUSTMENT RESET	RBRE	_ _ _ 1	OK OR ERR
INPUT 5 (COMPUTER-RGB) CONTRAST (−30 — +30)	RCPI	_ * * *	OK OR ERR
INPUT 5 (COMPUTER-RGB) BRIGHTNESS (−30 — +30)	RCBR	_ * * *	OK OR ERR
INPUT 5 (COMPUTER-RGB) RED (−30 — +30)	RCRD	_ * * *	OK OR ERR
INPUT 5 (COMPUTER-RGB) BLUE (−30 — +30)	RCBE	_ * * *	OK OR ERR
INPUT 5 (COMPUTER-RGB) CLR TEMP (−3 — +3)	RCCT	_ _ * *	OK OR ERR

PICTURE

CONTROL CONTENTS	COMMAND	PARAMETER	RETURN
INPUT 5 (COMPUTER-RGB) DISPLAY	RCRE	_ _ _ 0	OK OR ERR
INPUT 5 (COMPUTER-RGB) ADJUSTMENT RESET	RCRE	_ _ _ 1	OK OR ERR
INPUT 1 (COMPONENT 1) SIGNAL TYPE : RGB	IASI	_ _ _ 1	OK OR ERR
INPUT 1 (COMPONENT 1) SIGNAL TYPE : COMPONENT	IASI	_ _ _ 2	OK OR ERR
INPUT 2 (COMPONENT 2) SIGNAL TYPE : RGB	IBSI	_ _ _ 1	OK OR ERR
INPUT 2 (COMPONENT 2) SIGNAL TYPE : COMPONENT	IBSI	_ _ _ 2	OK OR ERR
INPUT 1 (COMPONENT 1) 2D PROGRESSIVE	RAIP	_ _ _ 0	OK OR ERR
INPUT 1 (COMPONENT 1) 3D PROGRESSIVE	RAIP	_ _ _ 1	OK OR ERR
INPUT 1 (COMPONENT 1) Film MODE	RAIP	_ _ _ 2	OK OR ERR
INPUT 2 (COMPONENT 2) 2D PROGRESSIVE	RBIP	_ _ _ 0	OK OR ERR
INPUT 2 (COMPONENT 2) 3D PROGRESSIVE	RBIP	_ _ _ 1	OK OR ERR
INPUT 2 (COMPONENT 2) Film MODE	RBIP	_ _ _ 2	OK OR ERR
INPUT 3 (S-VIDEO) CONTRAST (−30 — +30)	VBPI	_ * * *	OK OR ERR
INPUT 3 (S-VIDEO) BRIGHTNESS (−30 — +30)	VBBR	_ * * *	OK OR ERR
INPUT 3 (S-VIDEO) RED (−30 — +30)	VBRD	_ * * *	OK OR ERR
INPUT 3 (S-VIDEO) BLUE (−30 — +30)	VBBE	_ * * *	OK OR ERR
INPUT 3 (S-VIDEO) COLOUR (−30 — +30)	VBCO	_ * * *	OK OR ERR
INPUT 3 (S-VIDEO) TINT (−30 — +30)	VBTI	_ * * *	OK OR ERR
INPUT 3 (S-VIDEO) SHARP (−30 — +30)	VBSH	_ * * *	OK OR ERR
INPUT 3 (S-VIDEO) CLR TEMP (−3 — +3)	VBCT	_ _ * *	OK OR ERR
INPUT 3 (S-VIDEO) DISPLAY	VBRE	_ _ _ 0	OK OR ERR
INPUT 3 (S-VIDEO) ADJUSTMENT RESET	VBRE	_ _ _ 1	OK OR ERR
INPUT 4 (VIDEO) CONTRAST (−30 — +30)	VAPI	_ * * *	OK OR ERR
INPUT 4 (VIDEO) BRIGHTNESS (−30 — +30)	VABR	_ * * *	OK OR ERR
INPUT 4 (VIDEO) RED (−30 — +30)	VARD	_ * * *	OK OR ERR
INPUT 4 (VIDEO) BLUE (−30 — +30)	VABE	_ * * *	OK OR ERR
INPUT 4 (VIDEO) COLOUR (−30 — +30)	VACO	_ * * *	OK OR ERR
INPUT 4 (VIDEO) TINT (−30 — +30)	VATI	_ * * *	OK OR ERR
INPUT 4 (VIDEO) SHARP (−30 — +30)	VASH	_ * * *	OK OR ERR
INPUT 4 (VIDEO) CLR TEMP (−3 — +3)	VACT	_ _ * *	OK OR ERR
INPUT 4 (VIDEO) DISPLAY	VARE	_ _ _ 0	OK OR ERR
INPUT 4 (VIDEO) ADJUSTMENT RESET	VARE	_ _ _ 1	OK OR ERR
INPUT 3 (S-VIDEO) 2D PROGRESSIVE	VBIP	_ _ _ 0	OK OR ERR
INPUT 3 (S-VIDEO) 3D PROGRESSIVE	VBIP	_ _ _ 1	OK OR ERR
INPUT 3 (S-VIDEO) Film MODE	VBIP	_ _ _ 2	OK OR ERR
INPUT 4 (VIDEO) 2D PROGRESSIVE	VAIP	_ _ _ 0	OK OR ERR
INPUT 4 (VIDEO) 3D PROGRESSIVE	VAIP	_ _ _ 1	OK OR ERR
INPUT 4 (VIDEO) Film MODE	VAIP	_ _ _ 2	OK OR ERR

FINE SYNC [*1]

CONTROL CONTENTS	COMMAND	PARAMETER	RETURN
CLOCK (−150 — +150)	INCL	* * * *	OK OR ERR
PHASE (−60 — +60)	INPH	_ * * *	OK OR ERR
H-POSITION (−150 — +150)	IAHP	* * * *	OK OR ERR
V-POSITION (−60 — +60)	IAVP	_ * * *	OK OR ERR
RGB INPUT DISPLAY	IARE	_ _ _ 0	OK OR ERR
RGB ADJUSTMENT RESET	IARE	_ _ _ 1	OK OR ERR
SAVE SETTING (1 — 7)	MEMS	_ _ _ *	OK OR ERR
SELECT SETTING (1 — 7)	MEML	_ _ _ *	OK OR ERR
RGB HORIZONTAL FREQUENCY CHECK	TFRQ	_ _ _ 1	kHz (***. *OR_)
RGB VERTICAL FREQUENCY CHECK	TFRQ	_ _ _ 2	Hz (***. *OR_)
NORMAL AUTO SYNC	AADJ	_ _ _ 1	OK OR ERR
HIGH SPEED AUTO SYNC	AADJ	_ _ _ 2	OK OR ERR
AUTO SYNC OFF	AADJ	_ _ _ 0	OK OR ERR
AUTO SYNC DISPLAY ON	IMAS	_ _ _ 1	OK OR ERR
AUTO SYNC DISPLAY OFF	IMAS	_ _ _ 0	OK OR ERR

Appendix

(RS-232C) Specifications and Command Settings

CONTROL CONTENTS	COMMAND				PARAMETER				RETURN
THEATRE MODE NORMAL	T	H	M	D	_	_	_	1	OK OR ERR
THEATRE MODE BRIGHT	T	H	M	D	_	_	_	0	OK OR ERR
VIDEO 3D DNR OFF	3	D	N	R	_	_	_	0	OK OR ERR
VIDEO 3D DNR ON	3	D	N	R	_	_	_	1	OK OR ERR
OSD DISPLAY ON	I	M	D	I	_	_	_	1	OK OR ERR
OSD DISPLAY OFF (LEVEL A)	I	M	D	I	_	_	_	2	OK OR ERR
OSD DISPLAY OFF (LEVEL B)	I	M	D	I	_	_	_	0	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
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)
REVERSE OFF	I	M	R	E	_	_	_	0	OK OR ERR
REVERSE ON	I	M	R	E	_	_	_	1	OK OR ERR
INVERT OFF	I	M	I	N	_	_	_	0	OK OR ERR
INVERT ON	I	M	I	N	_	_	_	1	OK OR ERR

OPTIONS / PRJ MODE

CONTROL CONTENTS	COMMAND				PARAMETER				RETURN
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

LANGUAGE

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.

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
OFF	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
THEATRE MODE	1	0	1	1	0	1	0	0	1	1	0	0	0	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
GAMMA	1	0	1	1	0	0	0	0	0	0	0	1	0	1	0
CLR TEMP +	1	0	1	1	0	1	0	1	1	1	1	0	0	1	0
CLR TEMP −	1	0	1	1	0	1	0	0	1	1	1	1	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

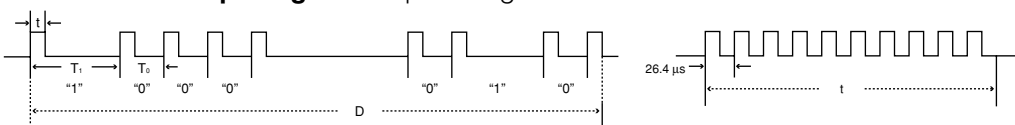| C1	← System Code → C5	C6	←	Data Code	→	C13	C14	C15
1	0 1 1 0	*	* * *	* *	* *	*	1	0

- 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
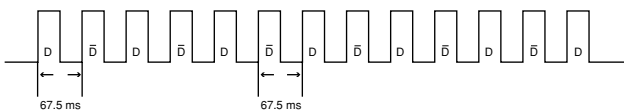
Wave form of output signal: Output using Pulse Position Modulation

"1"   "0"   "0"   "0"   "0"   "1"   "0"   26.4 µs

- t = 264 µs
- T_0 = 1.05 ms
- T_1 = 2.10 ms
- Pulse carrier frequency = 37.91 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

Appendix

Computer Compatibility Chart

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 or intelligent compression
AICS (Advanced Intelligent Compression and Expansion System) resizing technology

PC/MAC/WS	Resolution		Horizontal Frequency (kHz)	Vertical Frequency (Hz)	VESA Standard	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	×	
			34.7	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		
			56.5	70	×	
			58.1	72		
			68.7	85	×	
			73.5	90		
			77.2	96		
			80.6	100		

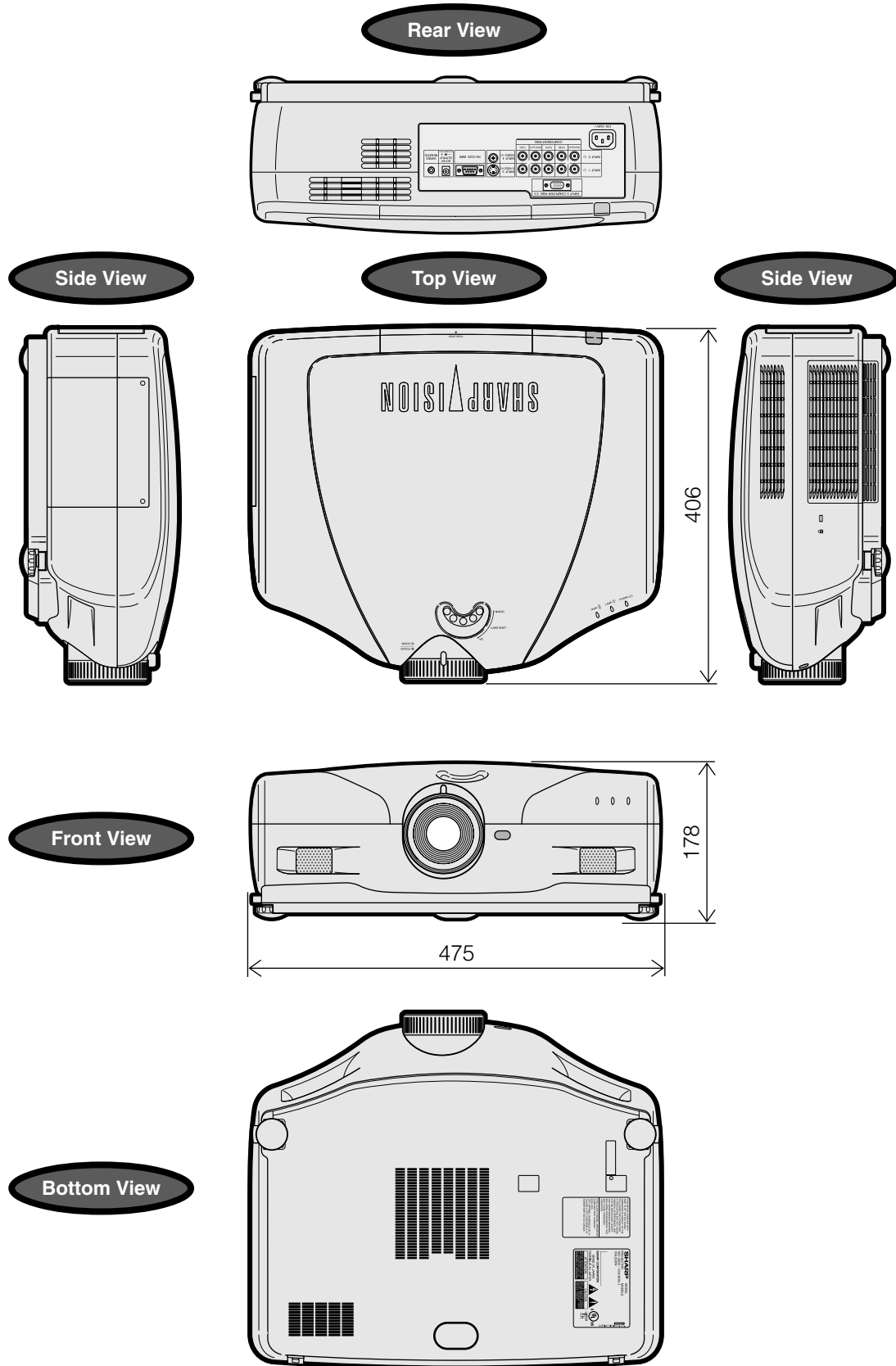| PC/MAC/WS	Resolution		Horizontal Frequency (kHz)	Vertical Frequency (Hz)	VESA Standard	Display
PC	SXGA	1,152 × 864	54.3	60		Advanced Intelligent Compression
			64.0	70		
			64.1	72		
			67.5	75	×	
			75.7	80		
		1,152 × 882	54.8	60		
			65.9	72		
			67.4	74		
			64.0	60	×	
720P		1,280 × 720	45.0	60	×	True
PC/MAC 13"	VGA	640 × 480	34.9	67		Upscale
PC/MAC 19"	XGA	1,024 × 768	48.4	60	×	Advanced Intelligent Compression
			60.0	75	×	
MAC 16"	SVGA	832 × 624	46.8	75		Upscale
			49.6	75		
MAC 21"	SXGA	1,152 × 870	68.5	75		Advanced Intelligent Compression
PC (WS)		1,280 × 960	60.0	60	×	
SGI (WS)		1,280 × 1,024	53.5	50		
SUN (WS)	SXGA	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.
- This projector can receive 640 × 350 VESA format VGA signals, however, "640 × 400" will appear on the screen.

Appendix

Dimensions

Rear View

Side View

Top View

Side View

406

Front View

178

475

Bottom View

Units: mm

Specifications

Product type	Projector
Model	XV-Z9000E
Video system	PAL/PAL 60/PAL-M/PAL-N/SECAM/NTSC 3.58/NTSC 4.43
	DTV 480i/480P/720P/1080i
Display method	Single Panel Digital Micromirror Device (DMD™) by Texas Instruments, RGB optical shutter method
DMD panel	Panel size: 0.8″
	Drive method: Digital Light Processing (DLP™) by Texas Instruments
	No. of dots: 921,600 dots (1,280 [H] × 720 [V])
Lens	1–1.35× zoom lens, F3.0, f=32.5–44.0 mm
Projection lamp	250 W NSH lamp
Video input signal	RCA Connector: VIDEO (INPUT 4), composite video, 1.0 Vp-p, sync negative, 75 Ω terminated
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
	C_B: 0.7 Vp-p, 75 Ω terminated
	C_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	15-PIN MINI D-SUB CONNECTOR (INPUT 5):
	RGB separate/composite sync/sync on green type analog input: 0–0.7 Vp-p, positive, 75 Ω terminated
	HORIZONTAL SYNC. SIGNAL: TTL level (positive/negative) or composite sync (Apple only)
	VERTICAL SYNC. SIGNAL: Same as above
Pixel clock	12–120 MHz
Vertical frequency	43–100 Hz
Horizontal frequency	15–81 kHz
Computer control signal	9-pin D-sub connector (RS-232C Port)
Rated voltage	AC 100–240 V
Input current	3.6 A
Rated frequency	50/60 Hz
Power consumption	345 W (SELECTING "BRIGHT" in the "Theatre Mode")
	310 W (SELECTING "NORMAL" in the "Theatre Mode")
Power 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 × 178 × 406 mm (W × H × D) (main body only)
	475 × 178 × 496 mm (W × H × D) (including terminal cover)
Weight (approx.)	9.5 kg (main body only)
Supplied accessories	Remote control, Two AA size batteries, Power cord (1.8 m), 21-pin RCA conversion adaptor, Video cable, Computer RGB cable, Terminal cover, Lens cap (attached), CD-ROM, Two projector operation manuals, SharpVision Manager operation manual
Replacement parts	Lamp unit (Lamp/cage module) (BQC-XVZ9000/1), Remote control (RRMCG1657CESA), AA size batteries, Power cord (QACCV4002CEZZ, QACCB5024CENA), 21-pin RCA conversion adaptor (QSOCZ0361CEZZ), Video cable (QCNWGA001WJZZ), Computer RGB cable (QCNW-5050CEZZ), Terminal cover (GCOVA1985CEKA), Lens cap (PCAPH1056CESA), CD-ROM (UDSKA0047CEN1), Two projector operation manuals (TINS-7521CEZZ, TINS-7522CEZZ), SharpVision Manager operation manual (TINS-7523CEZZ)

This SHARP projector uses a DMD chip. This very sophisticated chip 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.

Appendix

Glossary

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
Optimises projected computer images by automatically adjusting certain characteristics.

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

Cinema zoom
Mode that projects the 16:9 image which uses the centre of the image signal on the full-screen.

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.

Composite sync
Signal combining horizontal and vertical sync pulses.

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

Digital shift
Shifts image up or down easily by ▲/▼ buttons when RESIZE mode of input image is SMART STRETCH, CINEMA ZOOM, or DOT BY DOT of COMPUTER, VIDEO and DTV inputs.

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. You can select four different modes : STANDARD, GAMMA 1, GAMMA 2 and CUSTOM.

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

Lens shift
The lens can be easily raised and lowered to minimise or eliminate "Keystone" type effect.

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.

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

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

RS-232C
Function to control the projector from the computer by using the RS-232C ports on the projector and computer.

Side bar
Mode that projects the normal 4:3 image at the 4:3 area for the centre of the screen.

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.

Status function
Displays the settings of each adjustment item.

Stretch
Mode that stretches the 4:3 image horizontally to display it on the WIDE screen.

Sync on green
Video signal mode of a computer which overlaps horizontal and vertical sync signal to green colour signal pin.

3D DNR (3D Digital Noise Reduction)
Provides high quality images with minimal background.

Appendix

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Appendix

SHARP CORPORATION

Free Manuals Download Website

http://myh66.com

http://usermanuals.us

http://www.somanuals.com

http://www.4manuals.cc

http://www.manual-lib.com

http://www.404manual.com

http://www.luxmanual.com

http://aubethermostatmanual.com

Golf course search by state

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