SHARP ®

Important Information

Setup & Connections

Operation Buttons

Basic Operation

Multiple Function

Maintenance & Troubleshooting

Appendix

Q*i*

IMAGE QUALITY

OPERATION MANUAL

MODEL

XG-P20XU
LCD PROJECTOR

Conference Series

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

Introduction ENGLISH

IMPORTANT

For your assistance in reporting the loss or theft of your Color LCD 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.: XG-P20XU

Serial No.:

There are two important reasons for prompt warranty registration of your new SHARP LCD Projector, using the REGISTRATION CARD packed with the projector.

1. WARRANTY
   This is to assure that you immediately receive the full benefit of the parts, service and labor warranty applicable to your purchase.

2. CONSUMER PRODUCT SAFETY ACT
   To ensure that you will promptly receive any safety notification of inspection, modification, or recall that SHARP may be required to give under the 1972 Consumer Product Safety Act, PLEASE READ CAREFULLY THE IMPORTANT "LIMITED WARRANTY" CLAUSE.

U.S.A. ONLY

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

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

See bottom of actual set.

CAUTION

RISK OF ELECTRIC SHOCK.
DO NOT REMOVE SCREWS
EXCEPT SPECIFIED USER
SERVICE SCREW.

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER.
NO USER-SERVICEABLE PARTS EXCEPT LAMP UNIT.
REFER SERVICING TO QUALIFIED SERVICE
PERSONNEL.

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

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

WARNING: FCC Regulations state that any unauthorized changes or modifications to this equipment not expressly approved by the manufacturer could void the user's authority to operate this equipment.

U.S.A. ONLY

INFORMATION
This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the operation manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

U.S.A. ONLY

The enclosed RGB (computer) cable must be used with the device. The cable is provided to ensure that the device complies with FCC Class A verification.

U.S.A. ONLY

"Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device".

CANADA ONLY

For GyroRemote unit (RRMCG1631CESA)
This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and
(2) This device must accept any interference received, including interference that may cause undesired operation.
This device operates in the frequency band of 49.82 to 49.90 MHz with RF output power of less than 30 MicroWatts EIRP (Effective Isotropic Radiated Power).

Caution
Any changes made to this device not expressly approved by the manufacturer could void the users right to operate this device.

IMPORTANT SAFEGUARDS

Electrical energy can perform many useful functions. This product has been engineered and manufactured to ensure your personal safety. But IMPROPER USE CAN RESULT IN POTENTIAL ELECTRICAL SHOCK OR FIRE HAZARD. In order not to defeat the safeguards incorporated into this LCD Projector, observe the following basic rules for its installation, use and servicing. For your own protection and reliable usage of your LCD Projector, please be sure to read these "IMPORTANT SAFEGUARDS" carefully before use.

1. Read Instructions
All the safety and operating instructions should be read before the product is operated.

2. Retain Instructions
The safety and operating instructions should be retained for future reference.

3. Heed Warnings
All warnings on the product and in the operating instructions should be adhered to.

4. Follow Instructions
All operating and use instructions should be followed.

5. Cleaning
Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

6. Attachments
Do not use attachments not recommended by the product manufacturer as they may cause hazards.

7. Water and Moisture
Do not use this product near water–for example, near a bathtub, wash bowl, kitchen sink, or laundry tub; in a wet basement; or near a swimming pool; and the like.

8. Accessories
Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the product. Any mounting of the product should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.

9. Transportation
A product and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.

10. Ventilation
Slots and openings in the cabinet are provided for ventilation to ensure reliable operation of the product and to protect it from overheating. The openings should never be covered or blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.

11. Power Sources
This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company. For products intended to operate from battery power, or other sources, refer to the operating instructions.

12. Grounding or Polarization
This product is equipped with a three-wire grounding-type plug, a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding-type plug.

13. Power-Cord Protection
Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the product.

14. Lightning
For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the cable system. This will prevent damage to the product due to lightning and power-line surges.

15. Overloading
Do not overload wall outlets, extension cords, or integral convenience receptacles as this can result in a risk of fire or electric shock.

16. Object and Liquid Entry
Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.

17. Servicing
Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

18. Damage Requiring Service
Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
  a. If the power-supply cord or plug is damaged.
  b. If liquid has been spilled, or objects have fallen into the product.
  c. If the product has been exposed to rain or water.
  d. If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions, as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal operation.
  e. If the product has been dropped or damaged in any way.
  f. If the product exhibits a distinct change in performance, this indicates a need for service.

19. Replacement Parts
When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or with the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.

20. Safety Check
Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.
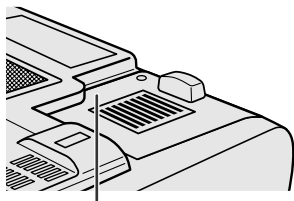
21. Wall or Ceiling Mounting
This product should be mounted to a wall or ceiling only as recommended by the manufacturer.

22. Heat
This product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

IMPORTANT SAFEGUARDS

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-XGP20X//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.

高温注意
CAUTION
PRECAUCIÓN
PRÉCAUTION

Caution Concerning the Lamp Replacement

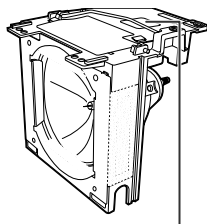See "Replacing the Lamp" on pages **68** and **69**.

PRODUCT DISPOSAL
This product utilizes tin-lead solder, and high intensity discharge lamp (HID lamp) containing a small amount of mercury. Disposal of these materials may be regulated due to environmental considerations. For disposal or recycling information, please contact your local authorities or the Electronics Industries Alliance: www.eiae.org.

Caution Concerning the Lamp Unit

Potential hazard of glass particles if lamp ruptures. In case of lamp rupture, contact your nearest Authorized Sharp Industrial LCD Products Dealer or Service Center for a replacement.
See "Replacing the Lamp" on pages **68** and **69**.

Cautions Concerning the Setup of the Projector

For minimal servicing and to maintain high image quality, SHARP recommends that this projector be installed in an area free from humidity, dust and cigarette smoke. When the projector is subjected to these environments, the lens must be cleaned more often. As long as the projector is 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 an Authorized Sharp Industrial LCD Products Dealer or Service Center.

Notes on Operation

- The exhaust vent, the lamp cage cover and adjacent areas may be extremely hot during projector operation. To prevent injury, do not touch these areas until they have sufficiently cooled.
- Allow at least 4 inches (10 cm) of space between the exhaust vent 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 67 , for details.

NOTE ▶
• The cooling fan regulates the internal temperature, and its performance is automatically controled. The sound of the fan may change during projector operation due to changes in the fan speed.
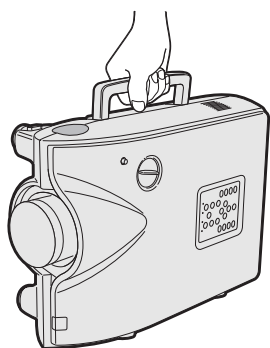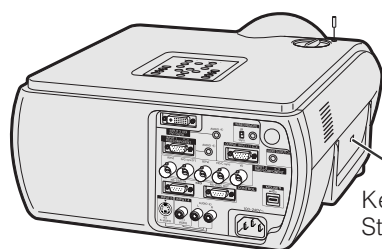
Using the Carrying Handle

When transporting the projector, carry it by the carrying handle on the side.

⚠ CAUTION ▶
• Always put on the lens cap to prevent damage to the lens when transporting the projector.
• Do not lift or carry the projector by the lens or the lens cap as this may damage the lens.

Using the Kensington Lock

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

Kensington Security Standard connector

Outstanding Features

1. *High-end LCD Projector with Ultra High Brightness*
- **AC 220 W Lamp**
  Use AC 220 W lamp for excellent color uniformity and ultra high brightness.

2. *Computer Compatibility*
- **Compatible with resolutions including VGA-SVGA (expanded), XGA (true resolution) and SXGA-UXGA (compressed) as well as DTV formats (480i, 480P, 720P and 1080i).**

3. *XGA Image Quality*
- **OCS LCD panel enhances color uniformity.**
- **Various other circuits are also used to provide high quality video images.**

4. *Computer & Video Integrated Composer Technology*
- **New Progressive Mode**
  I/P conversion with new algorithm used to achieve beautiful image quality.
- **Enhanced Up-scaling and Digital Image Enlargement**
  Enables sharper image quality without jaggies even for enlarged images.
- **Superior 16:9 Image**
  4:3 images can be converted to 16:9 images using Smart Stretch (sides stretched, center untouched), previously not achievable with LCD projectors.
- **Intelligent Digital Keystone Correction**
  Smooths out jaggies on keystone images and compresses the image not only horizontally but vertically keeping the 4 : 3 aspect ratio, and at the same time, calculates the aspect ratio automatically adjusting to the lens shift width.
- **New Intelligent Compression**
  Efficiently compresses UXGA (1,600 × 1,200) images to XGA (1,024 × 768).
- **Enhanced three-two pull down**
  Converts cinema mode DVD images transformed with three-two pull down enhancement to progressive mode images for easier viewing by Film Mode.
- **Dynamic GAMMA Correction**
  Optimizing GAMMA correction frame by frame in real time.

5. *3D Digital Uniformity and Digital Convergence*
- **Three-Dimensional Digital Uniformity compensates uneven picture brightness even for pictures at any brightness level from white to dark. And, with Digital Convergence, a slight distortion of convergence can be adjusted on the service menu screen without having to touch the LCD panel.**
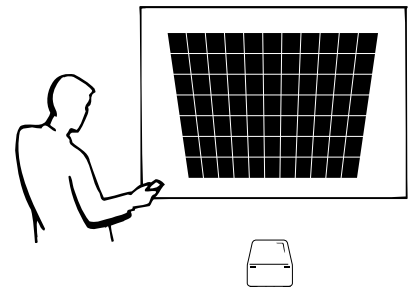
6. *Network Capability*
- **Self-Diagnosis/Projector Status**
  Self-diagnosis/Projector status function sends e-mail messages to a specified computer about lamp usage time and any malfunctions.
- **Multiple & Group Projector Control**
  Up to 250 projectors can be controled over a network. Projector RS-232C OUT can be used for daisy chain connection.
- **Simple Stacking and Videowall Display**
  Comes with software for easy stacking and videowall processing even for input from a single source.
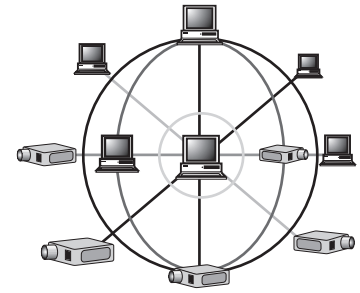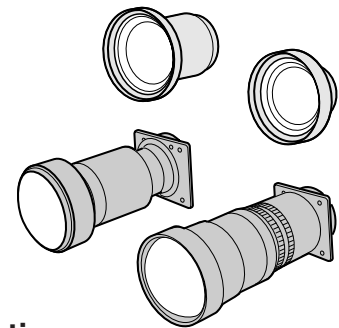
7. *Four Optional Lenses for Maximum Flexibility*
- **Bayonet mount type: Wide-Zoom Lens, Tele-Zoom Lens**
- **Screw mount type: Fixed Wide Lens, Tele-Zoom Lens**

8. *Multiple Input and Output Terminals*
- **BNC Terminal for RGB/Component/Video Signal**
- **PC Digital Input (DVI)**
- **Output terminal with VAO (variable audio output) support**

9. *Easy Setup*
- **Lens Shift, Power Zoom & Focus, Digital Keystone Correction**
- **High Speed Auto Sync Technology**

10. *Advanced Presentation Features incorporating a unique gyro device for "in-air" remote control*
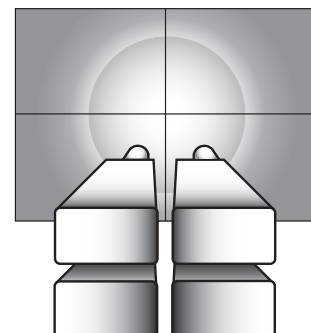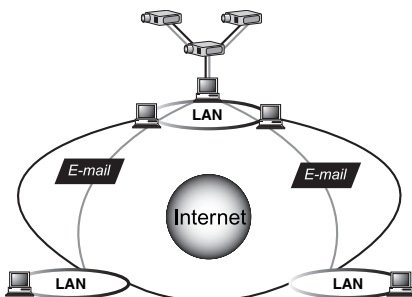- **An intuitive presentation tool with an easy-to-see screen pointer.**
- **Raising the bar for roaming interaction with a wireless, RF (nondirectional) design that erases out-of-sight worries. Loaded with USB mouse control.**

11. *Useful Features*
- **Picture-in-Picture, Digital Enlargement, Freeze**
- **Customizable Startup Screen & Background Screen**

12. *Application Software*
- **"Sharp Advanced Presentation Software—Professional Edition" (Network and Remote Control)**

Contents

Important Information

Setup & Connections

Operation Buttons

Important
Information

Setup & Connections

Operation Buttons

Basic Operation

Multiple Function

Maintenance &
Troubleshooting

Appendix

E-7

Contents

Basic Operation

Multiple Function

Maintenance & Troubleshooting

Appendix

Important Information

Setup & Connections

Operation Buttons

Basic Operation

Multiple Function

Maintenance & Troubleshooting

Appendix

How to Access the PDF Operation Manuals

PDF operation manuals 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 program 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 program 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 "xg-p20xu" folder.
⑥ Double click on the language (name of the folder) that you want to view.
⑦ Double click on the "p20x" pdf file to access the projector manuals.
   Double click on the "saps" pdf file to access the Sharp Advanced Presentation Software manual.
⑧ Double click on the pdf file.

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 "xg-p20xu" folder.
⑤ Double click on the language (name of the folder) that you want to view.
⑥ Double click on the "p20x" pdf file to access the projector manuals.
   Double click on the "saps" pdf file to access the Sharp Advanced Presentation Software manual.
⑦ Double click on the pdf file.

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.

Part Names

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

Projector

Front View

LAMP REPLACEMENT indicator **67**

POWER indicator **67**

POWER buttons (ON/OFF) **19**

MUTE button **39**

LENS button **21**

INPUT 1, 2, 3, 4, 5 buttons **39**

LEARN button **37**

BLACK SCREEN button **40**

ENTER button **44**

Antenna **32**

Lens shift dial **20**

Speakers **52**

Foot releases **20**

67 TEMPERATURE WARNING indicator

32 GYRO RF indicator

39 VOLUME buttons (−/+)

44 MENU button

51 AUTO SYNC button

42 RESIZE button

43 GAMMA button

44 UNDO button

44 ADJUSTMENT buttons (▲/▼/◄/►)

3 Cooling fan (Exhaust vent)

70 Air filter/Cooling fan (Intake vent)

Rear View

70 Cooling fan (Intake vent)

4 Kensington Security Standard connector

4 Carrying handle

INPUT 3 port (DVI) **16**

Computer AUDIO INPUT 2/3 terminal (ø3.5 mm stereo minijack) **16**

INPUT 1 port (15-pin Mini D-sub) **14**

Computer AUDIO INPUT 1 terminal (ø3.5 mm stereo minijack) **14**

INPUT 2 terminals (BNC) **15**

RS-232C INPUT port/ RS-232C OUTPUT port **16** **65**

S-VIDEO INPUT 5 terminal (4-pin Mini DIN) **17**

VIDEO INPUT 4 terminal (RCA) **17**

38 IR/Gyro switch

38 WIRED REMOTE control input terminal (ø3.5 mm stereo minijack)

18 AUDIO OUTPUT terminal (ø3.5 mm stereo minijack)

56 OUTPUT port (15-pin Mini D-sub) for INPUT 1, 2

35 USB port

13 AC socket

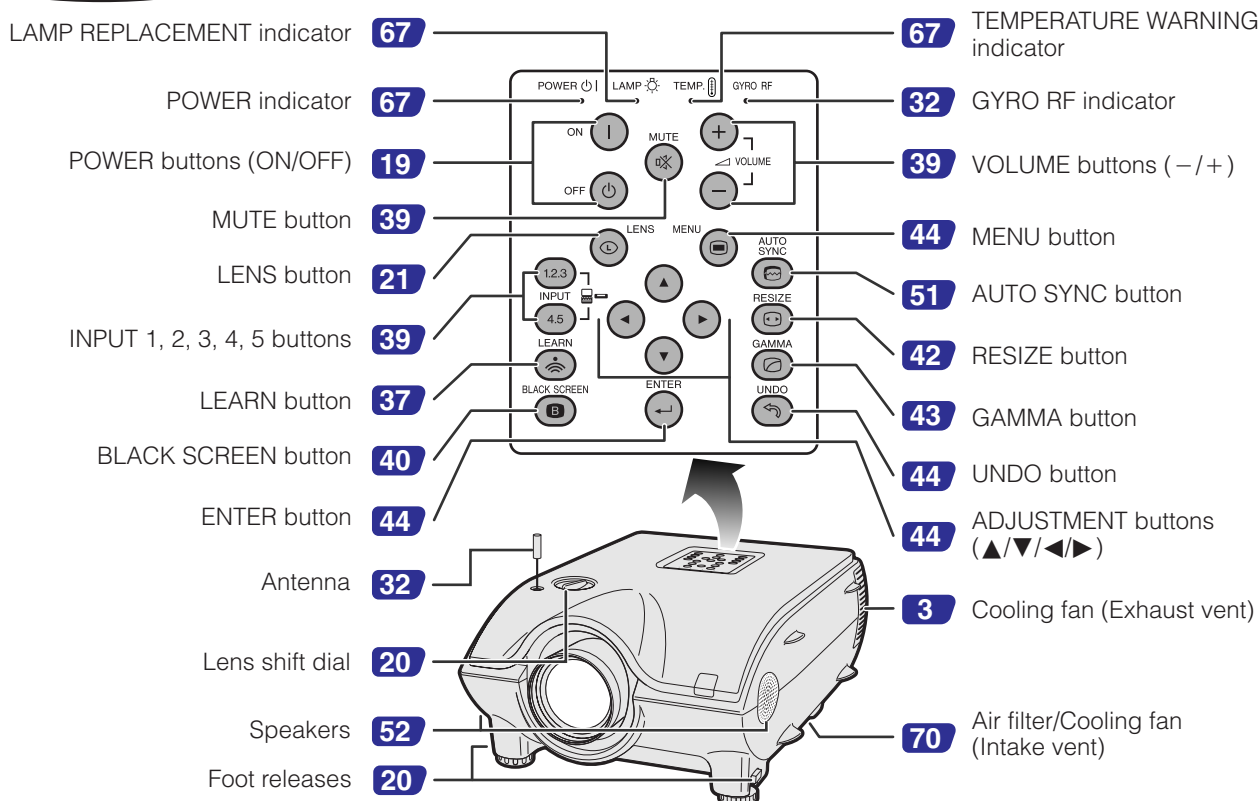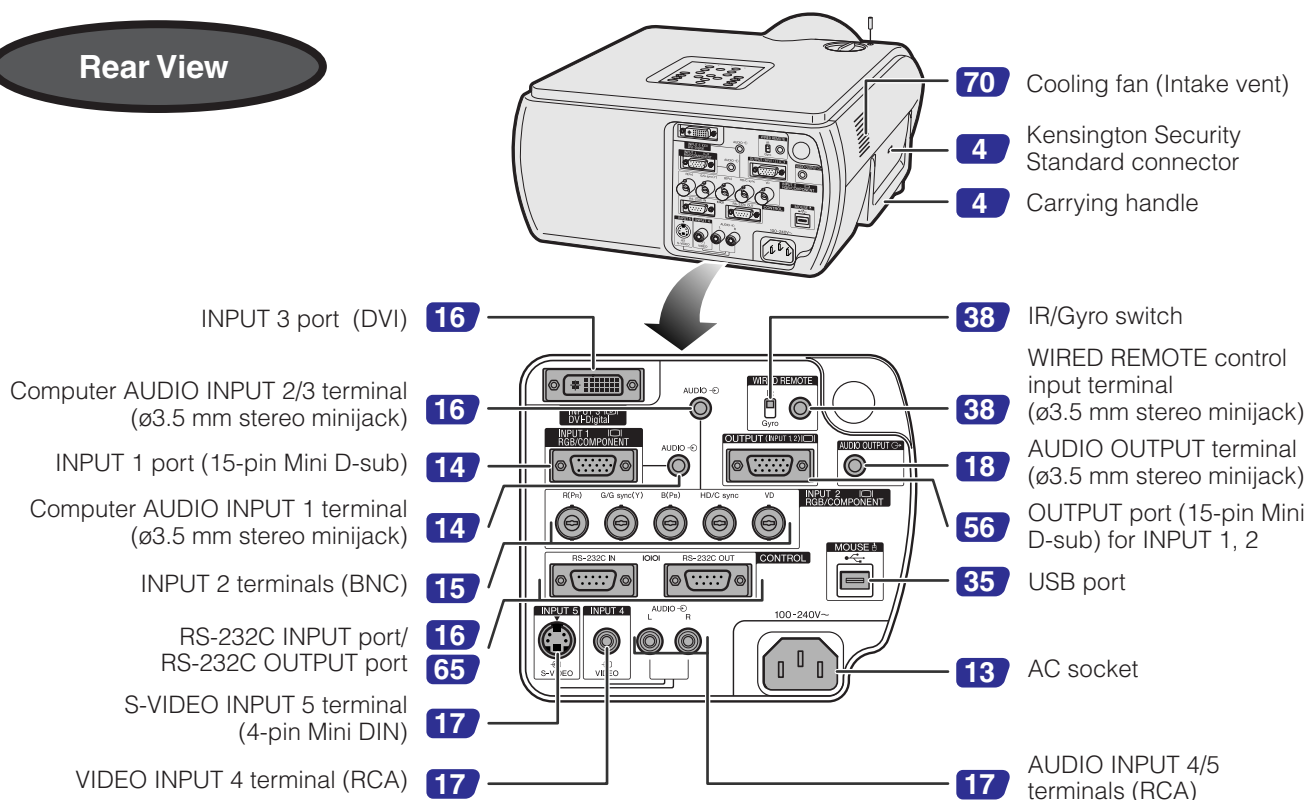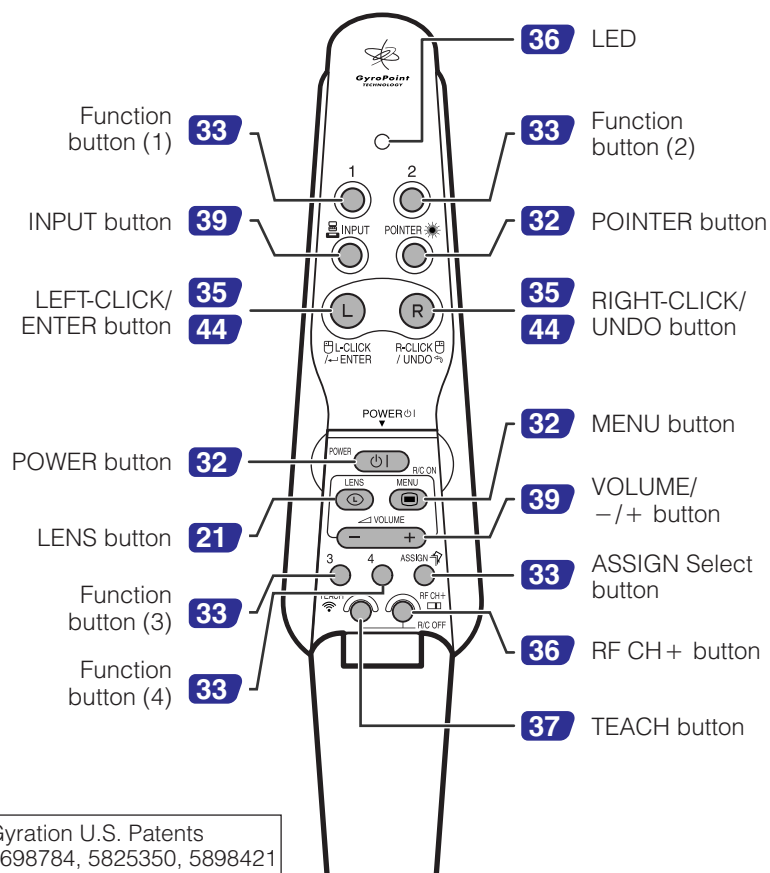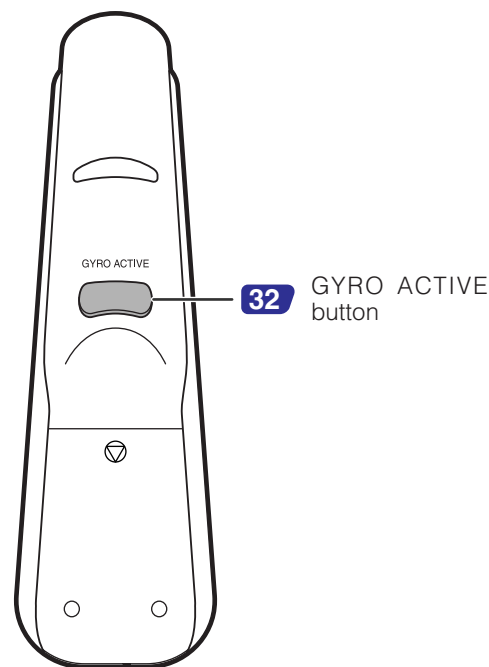**17** AUDIO INPUT 4/5 terminals (RCA)

E-10

Part Names

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

GyroRemote

Front View

Rear View

36 LED	
Function button (1) **33**	**33** Function button (2)
INPUT button **39**	**32** POINTER button
LEFT-CLICK/ ENTER button **35** **44**	**35** **44** RIGHT-CLICK/ UNDO button
	32 GYRO ACTIVE button
POWER button **32**	**32** MENU button
	39 VOLUME/ −/+ button
LENS button **21**	
Function button (3) **33**	**33** ASSIGN Select button
Function button (4) **33**	**36** RF CH+ button
	37 TEACH button

Gyration U.S. Patents
5698784, 5825350, 5898421

Bottom View

38 Wired remote control input

Inserting and removing the batteries

Batteries are not pre-installed at the factory. When inserting batteries for the first time, follow steps 1, 3 and 4 below.

1 Press in on the arrow mark and slide in the direction of the arrow to remove the battery cover.	**2** Remove the two upper batteries and pull the tapes to pick up two other batteries at the bottom of the compartment.	**3** Insert four AAA size batteries, making sure the polarities match the + and − marks inside the battery compartment and the batteries are placed on the tapes.	**4** Insert the side tabs of the battery cover into the slots and press the cover in until it is properly seated.
Battery cover	Battery compartment		Battery cover

E-11

Accessories

Supplied Accessories
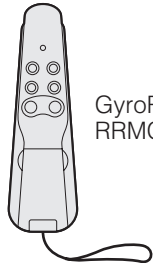
GyroRemote
RRMCG1631CESA

Four AAA size batteries
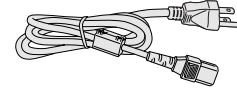
Power cord
QACCU5013DE01
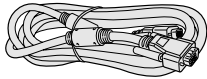
RGB cable
QCNW-5304CEZZ
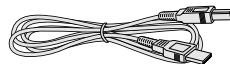
USB mouse control cable
QCNW-5916CEZZ
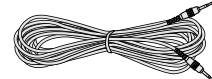
Computer audio cable
(ø3.5 mm stereo minijack cable)
QCNW-4870CEZZ
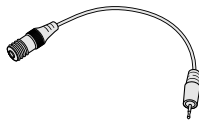
ø2.5–ø3.5 mm wired remote
control cable
QCNW-5943CEZZ

Three BNC-RCA adaptors
QPLGJ0107GEZZ
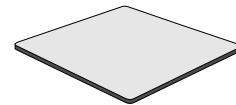
Extra air filter
PFILD0080CEZZ

Lens cap
PCAPH1056CESA

CD-ROM
UDSKA0043CEN1

LCD projector operation manual
TINS-7354CEZZ

LCD projector quick guide
TINS-7355CEZZ

Sharp Advanced Presentation
Software operation manual
TINS-7356CEZZ

ID number seal
TLABZ0781CEZZ
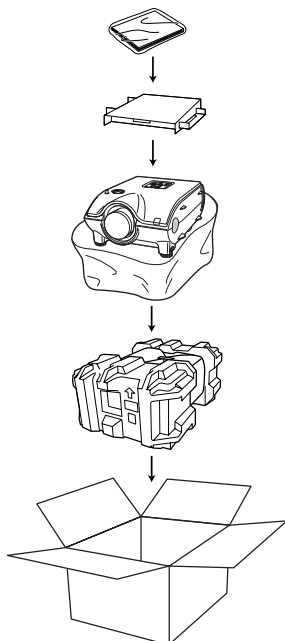
Optional cables

DVI cable (9′ 10″, 3 m)
AN-C3DV

3RCA to 15pin D-sub cable (9′ 10″, 3 m)
AN-C3CP

5BNC to 15pin D-sub cable (9′ 10″, 3 m)
AN-C3BN

RS-232C serial control cable (32′ 10″, 10 m)
AN-C10RS

Connections

Power Supply

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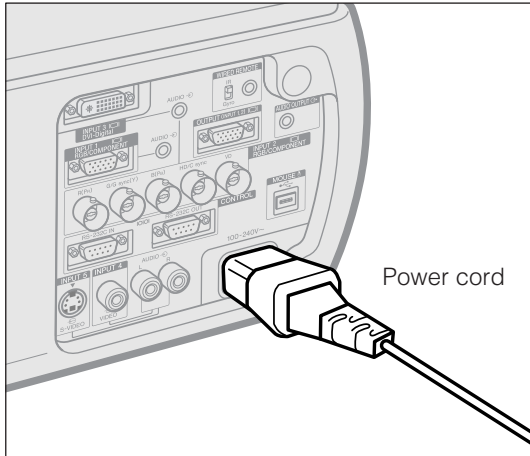
Power cord

Make the necessary connections before proceeding. Connect the power cord to a wall outlet.
The POWER indicator lights up red and the projector enters standby mode.
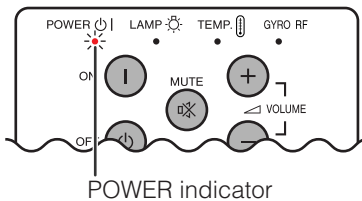
POWER indicator

NOTE

• If the bottom filter cover is not securely installed, the POWER indicator flashes.

Projecting Computer Images

Connecting the Projector to a Computer

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

Connecting to a computer using the standard 15-pin Input

3 Computer audio cable **4**
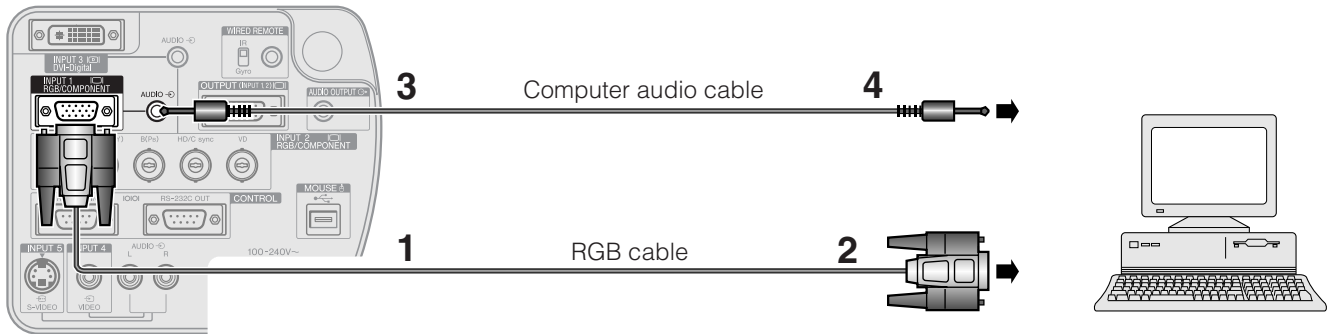
1 RGB cable **2**

1 Connect one end of the supplied RGB cable to the INPUT 1 port on the projector.

2 Connect the other end to the monitor output port on the computer. Secure the connectors by tightening the thumb screws.

3 To use the built-in audio system, connect one end of the supplied computer audio cable to the AUDIO INPUT 1 terminal on the projector.

4 Connect the other end to the audio output terminal on the 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.

NOTE
- Please read the computer's operation manual carefully before making connections.
- Refer to page **77** "Computer Compatibility Chart" 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.
- A ø3.5 mm stereo minijack to stereo RCA audio cable adaptor may be necessary.

When connecting this projector to a computer, select "RGB" for "Signal Type" on the GUI menu. (See page **47**.)

NOTE
- A Macintosh adaptor may be required for use with some Macintosh computers. Contact your nearest Authorized Sharp Industrial LCD Products Dealer or Service Center.
- AUDIO INPUT 1 can be used to input audio corresponding to the INPUT 1.

Projecting Computer Images

- This projector uses a 5 BNC computer input to prevent deterioration of image quality.
- Connect the R (P$_R$), G/G sync (Y), B (P$_B$), HD/C sync and VD cables (sold separately) to the correct input terminals on the projector and an RGB switcher (sold separately) connected to the computer, or connect a 5 BNC cable (sold separately) directly from the input terminals on the projector to the computer.

Connecting to an external RGB switcher or other compatible computers using the BNC Input (Typically used in larger installations)

Computer audio cable

3

4 To audio output terminal

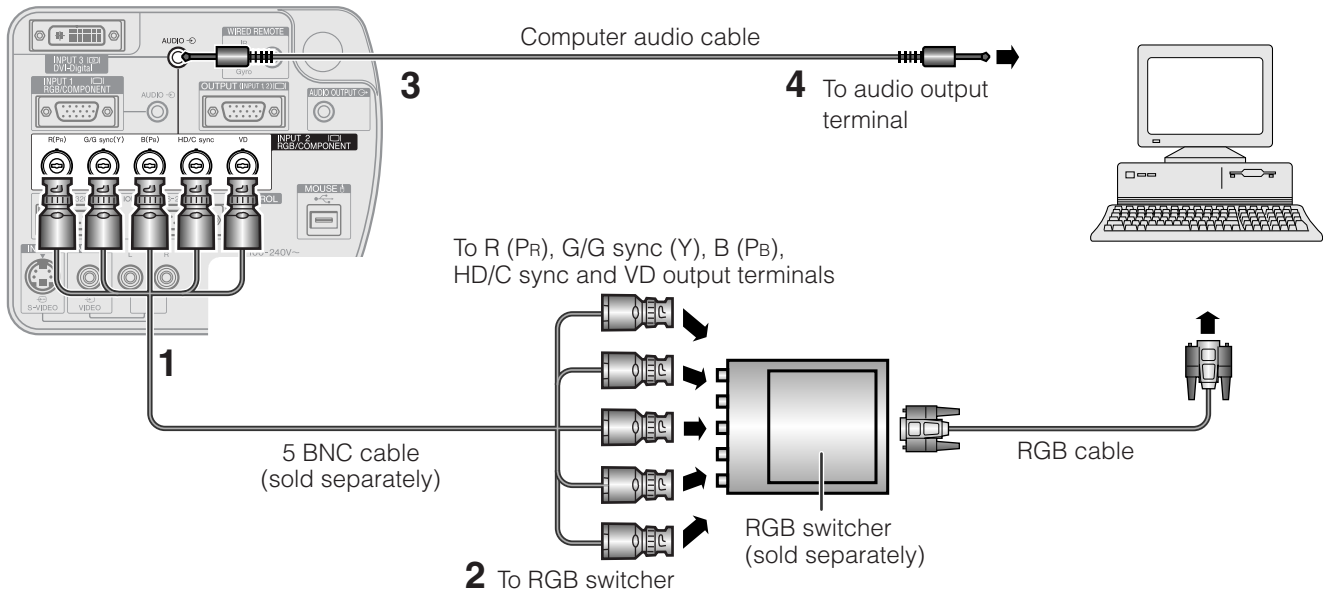To R (P$_R$), G/G sync (Y), B (P$_B$), HD/C sync and VD output terminals

1

5 BNC cable (sold separately)

RGB cable

RGB switcher (sold separately)

2 To RGB switcher

1 Connect each BNC connector of a 5 BNC cable to the corresponding INPUT 2 terminals on the projector.
2 Connect the other end of the 5 BNC cable to the corresponding BNC terminals on the external RGB switcher. Connect the RGB switcher to the computer using a RGB cable.
3 To use the built-in audio system, connect one end of the supplied computer audio cable to the AUDIO INPUT 2/3 terminal on the projector.
4 Connect the other end to the audio output terminal on the computer or external audio system.

NOTE
• A ø3.5 mm stereo minijack to stereo RCA audio cable adaptor may be necessary.

When connecting the projector to a compatible computer other than a PC (VGA/SVGA/XGA/SXGA/UXGA) 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 **47**.)

NOTE
• Connecting computers other than the recommended types may result in damage to the projector, the computer, or both.
• AUDIO INPUT 2/3 can be used to input audio corresponding to the INPUT 2/3.

"Plug and Play" function (when connecting to a 15-pin terminal)
- This projector is compatible with VESA-standard DDC 1/DDC 2B. The projector and a VESA DDC compatible computer will communicate their setting requirements, allowing for quick and easy setup.
- Before using the "Plug and Play" function, be sure to turn on the projector first and the connected computer last.

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

Connecting to a computer using the 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, sold separately), the computer can be used to control the projector and check the status of the projector. See pages **73** , **74** and **75** for details.

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

RGB cable

Computer audio cable

RS-232C cable
(null modem, cross type, sold separately)
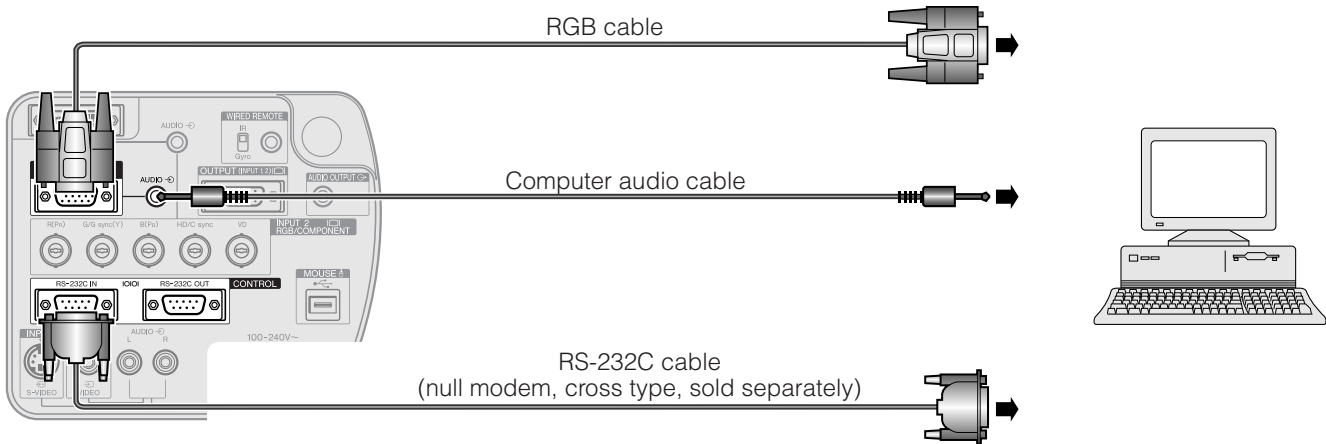
⚠ **CAUTION**

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

NOTE

• The wireless mouse or 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 on setting up/installing the correct mouse driver.
• A Macintosh adaptor may be required for use with some Macintosh computers. Contact your nearest Authorized Sharp Industrial LCD Products Dealer or Service Center.

Connecting to a computer using the direct digital input port

3 Computer audio cable

4 To audio output terminal

1 DVI cable (sold separately)

2 To digital output terminal
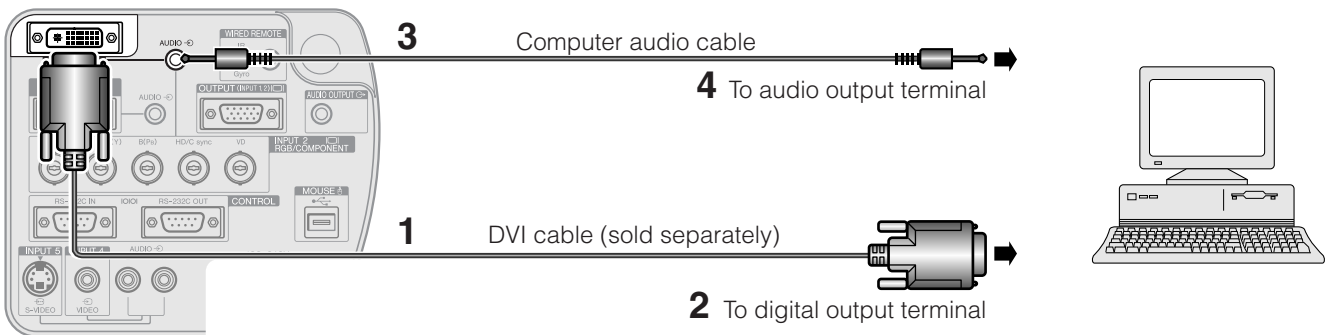
1 Connect one end of the DVI cable to the INPUT 3 port on the projector.
2 Connect the other end to the corresponding terminal on a computer.
3 To use the built-in audio system, connect one end of the supplied computer audio cable to the AUDIO INPUT 2/ 3 terminal on the projector.
4 Connect the other end to the audio output terminal on the computer.

NOTE

• This DVI port is DVI version 1.0 compatible. Therefore when the signal is input from copy guard system compatible (DVI version 2.0) equipment, no signal will be received.

Watching Video Images

Connecting to a VCR, laser disc player and other audiovisual equipment using the standard video Input

S-video cable (sold separately)

Example

To S-video output terminal

Video cable (sold separately)

1

To video output terminal

VCR

or

Laser disc player

2

Audio cable (sold separately)

To audio output terminals
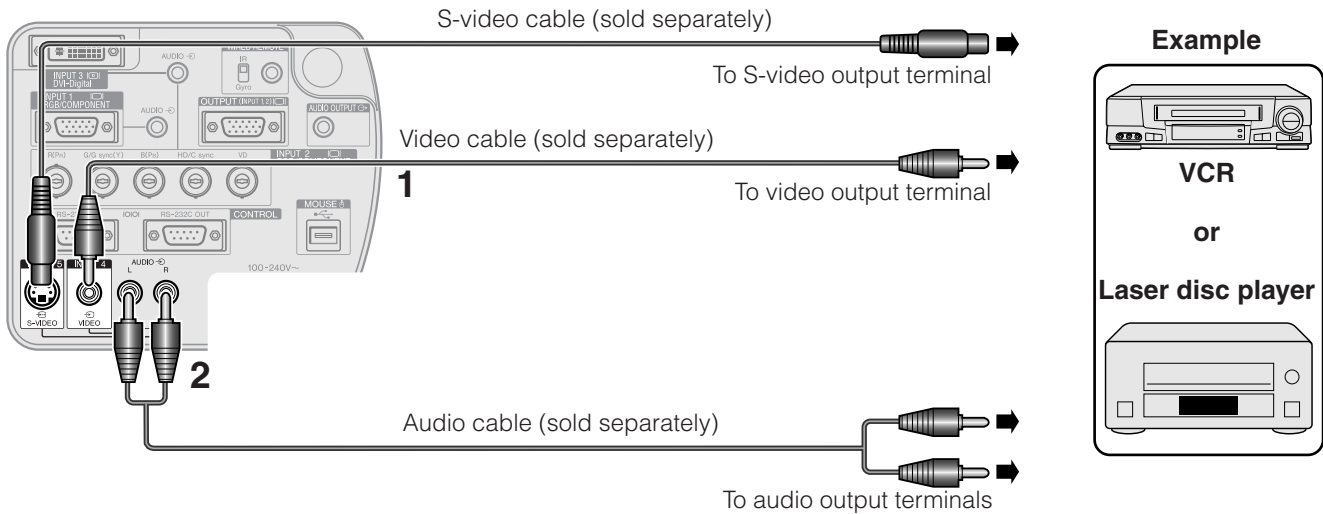
1 Connect the yellow RCA connectors to the corresponding yellow VIDEO INPUT 4 terminal on the projector and the Video output terminal on the video source.

2 To use the built-in audio system, connect the red and white RCA connectors to the corresponding red and white AUDIO INPUT 4/5 terminals on the projector and the Audio output terminals on the video source.

The S-VIDEO INPUT 5 terminal uses a video signal system in which the picture is separated into a color and a luminance signal to realize a higher-quality image.

NOTE
- For higher quality video, you may use the S-VIDEO INPUT 5 terminal on the projector. S-video cable is sold separately.
- If your video equipment does not have an S-video output terminal, use a composite video cable.

⚠ CAUTION
- Always turn off the projector before connecting to video equipment, in order to protect both the projector and the equipment being connected.

Watching Component Video Images

Connecting to a DVD video player, DTV decoder and other component video equipment using the 5 BNC Input

4 To audio output terminals

Example

3

Audio cable
(ø3.5 mm stereo minijack/RCA cable, sold separately)

DTV decoder

or

DVD video player

1 Component cable (sold separately)

2 To analog component output terminals

Three BNC-RCA adaptors

⚠ **CAUTION**
• Always turn off the projector before connecting to video equipment, in order to protect both the projector and the equipment being connected.

1 Connect each BNC connector of a component cable to the corresponding BNC INPUT 2 terminals on the projector.

2 Connect the other end of the cable to the corresponding terminals on a DVD video player or DTV decoder.

3 To use the built-in audio system, connect one end of an audio cable (sold separately) to the AUDIO INPUT 2/3 terminal on the projector.

4 Connect the other end to the audio output terminal on the DVD video player or DTV decoder.
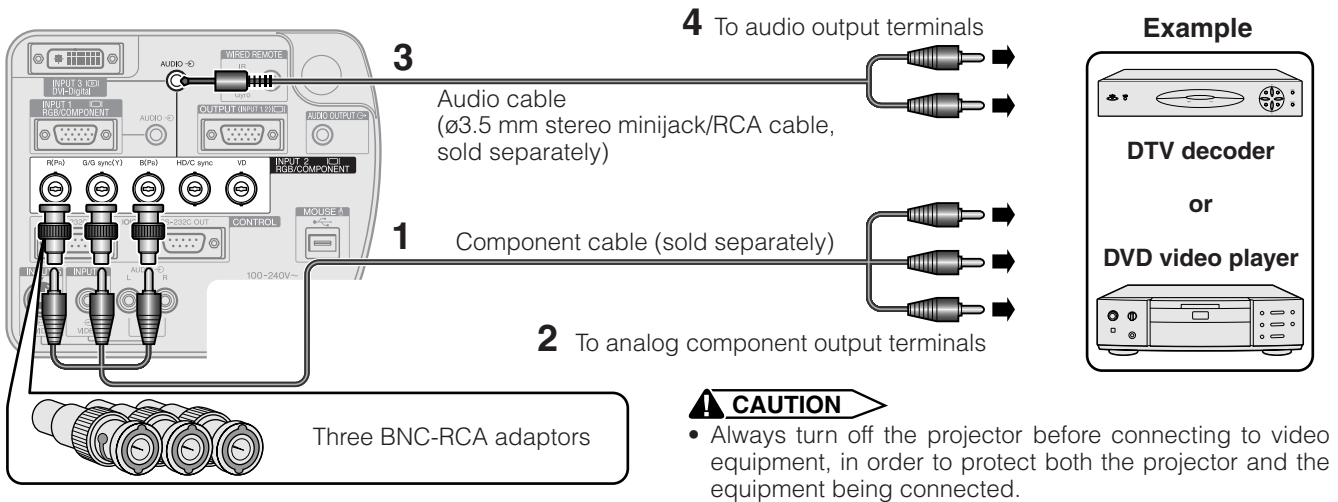
▶ **NOTE**
• BNC-RCA adaptors are included for use with RCA type cables and sources.
• A ø3.5 mm stereo minijack to stereo RCA audio cable adaptor may be necessary.

For Better Sound

Connecting to an amplifier and other audio components

Audio cable (sold separately)

To audio input terminals

Amplifier

⚠ **CAUTION**
• Always turn off the projector before connecting to audio components, in order to protect both the projector and the components being connected.
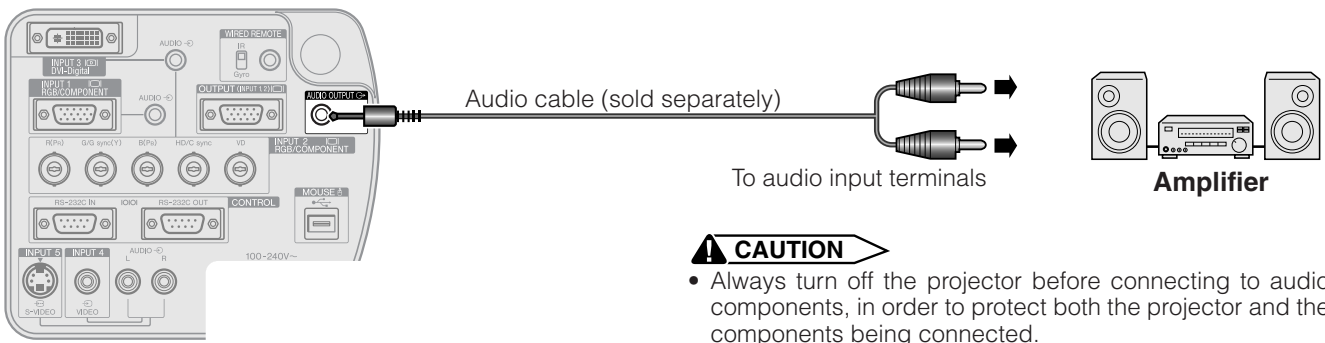
▶ **NOTE**
• By using external audio components, the volume can be amplified for better sound.
• The AUDIO OUTPUT terminal allow you to output audio to audio components from the selected AUDIO INPUT 1 to 5 terminals connected to audiovisual equipment.
• For details on Variable Audio Output (VAO) and Fixed Audio Output (FAO), see page **52** .
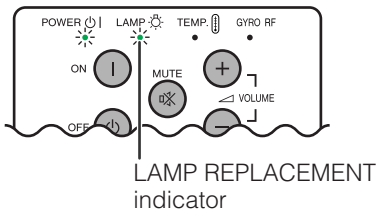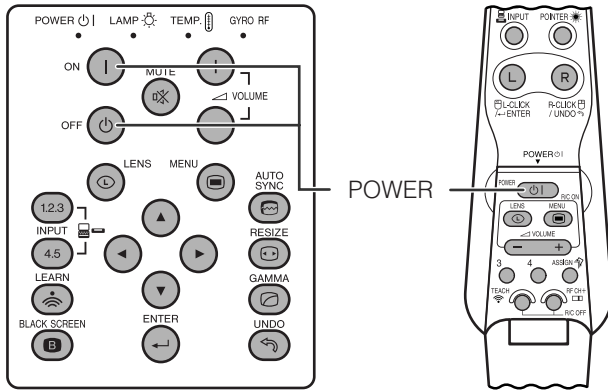• A ø3.5 mm stereo minijack to stereo RCA audio cable adaptor may be necessary.

Power ON/OFF

POWER

LAMP REPLACEMENT
indicator

On-screen Display
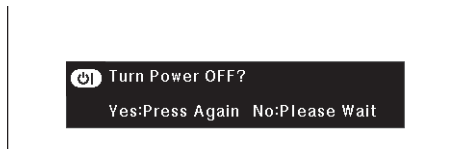
Press **POWER ON** on the projector or **POWER** on the GyroRemote.

• The flashing green 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

• When the projector cannot recognize GyroRemote, an on-screen display appears. Follow the instructions to activate control.
• After the projector is unpacked and turned on for the first time, a slight odor may be emitted from the exhaust vent. This odor will soon disappear with use.

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

Press **POWER OFF** on the projector or **POWER** on the GyroRemote.

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

NOTE

• If you accidentally pressed **POWER OFF**/**POWER** and do not want to turn off the power, wait until the power off screen disappears.
• When the power is turned off, 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 before disconnecting the power cord.
• The power can be turned on again by pressing **POWER ON**/**POWER**. When the power is turned on, the POWER indicator and the LAMP REPLACEMENT indicator light green.
• The POWER indicator flashes if the bottom filter cover is not securely installed.

Setting Up the Screen

Using the Adjustment Feet

1

2

3

UP   DOWN
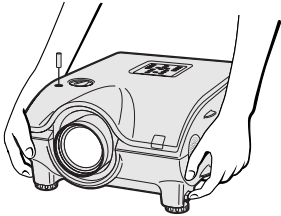
Press foot releases.
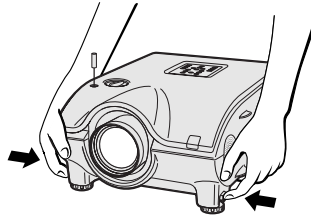
Adjust height of projector and remove hands from foot releases.
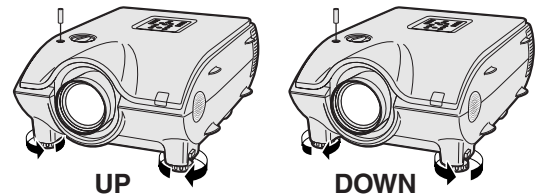
Rotate feet to make minor changes.

 NOTE
- The projector is adjustable up to approximately 10° 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.

 ⚠ CAUTION
- Do not press the foot releases when the adjustment feet are extended without firmly holding the projector.
- 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.

Using the Lens Shift

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

Projector

Projected Image

Lens shift dial

UP

DOWN

UP

DOWN
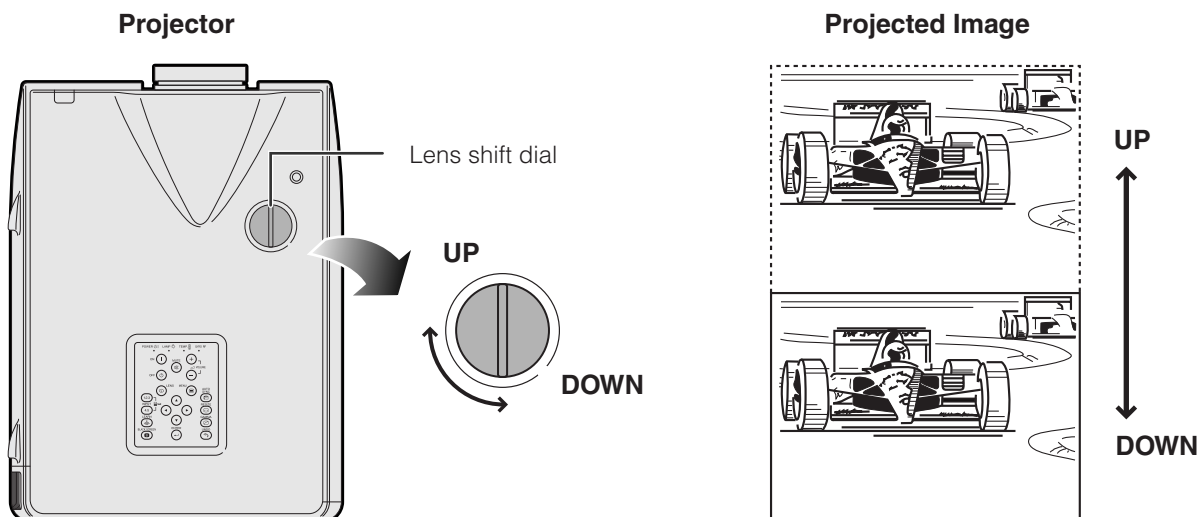
 NOTE
- The lens shift dial is set to the upper most position at the factory. Remember to adjust lower by turning the dial when operating the projector.
- The lens shift dial has two points to help orient the position. The center of the lens and bottom of the screen are the same height (10:0) and the center of the lens and center of the screen are the same height (5:5). When either position is reached by turning the dial, you will notice a slight latching feeling.
- Do not forcefully turn the lens shift dial beyond the 10:0 and 5:5 orientating positions; doing so may result in damaging the equipment.
- When the AN-P9MX of optional lens is attached, lens shift cannot be used.

📽 LENS Button

Projector

POWER ⏻ | LAMP ☼ TEMP. 🔲 GYRO RF

ON I
MUTE 🔇
VOLUME +／−
OFF

ENTER

LENS MENU
LENS
1.2.3
INPUT
4.5
LEARN
BLACK SCREEN
ENTER

AUTO
SYNC
RESIZE
GAMMA
UNDO

▲/▼/◀/▶

GyroRemote

INPUT POINTER ☀
L R
L-CLICK/←ENTER R-CLICK/UNDO
POWER ⏻
LENS MENU
VOLUME +／−
3 4 ASSIGN
TEACH RF CH+ / AC OFF

ENTER

LENS

UNDO

On-screen Display (Example: 4:3 NORMAL image)

FOCUS
🔍 NEXT / ADJUST
TEST PTRN

ZOOM
🔍 NEXT / ADJUST
TEST PTRN

KEYSTONE
NEXT / ADJUST
TEST PTRN / RESET

V–SIZE
END / ADJUST
TEST PTRN / RESET

On-screen Display (Example: 16:9 WIDE image)

FOCUS
NEXT / ADJUST
TEST PTRN

ZOOM
NEXT / ADJUST
TEST PTRN

KEYSTONE
NEXT / ADJUST
TEST PTRN / RESET

V–SIZE
NEXT / ADJUST
TEST PTRN / RESET

DIGITAL SHIFT
END / ADJUST
TEST PTRN / RESET

Digital Image Adjustments

This function can be used to adjust the focus, zoom, keystone, v-size and digital shift settings.

1 Press **LENS** to select mode. Each time **LENS** is pressed, the screen changes as shown on the left.

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

3 Press ▲/▼/◀/▶ to make adjustments. (Press −/+ to make adjustments on the GyroRemote.)

4 a. Press **LENS** until normal screen appears.
   b. To reset the "KEYSTONE", "V-SIZE" and "DIGITAL SHIFT" setting, press **UNDO**.
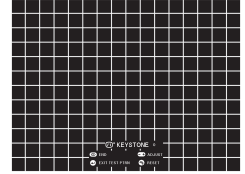
NOTE
• Do not touch the lens when adjusting the focus or zoom.

Keystone setting
Trapezoidal distortion is caused when the projector image is positioned away from the center axis of the screen. This function allows you to correct the keystone effect for excellent picture quality.

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

V-size setting
During keystone correction an error can occur in the aspect ratio depending on the amount of lens shift. Use the V-SIZE fine-tuning function to correct this error.

NOTE
• V-SIZE is only displayed and can only be adjusted when performing KEYSTONE correction.

Digital shift setting
For easier viewing, this function shifts the image projected on the screen up or down eliminating either the upper or lower black band found in 16:9 and other wide aspect ratios.

NOTE
• Digital shift function only works with BORDER, STRETCH or SMART STRETCH of VIDEO and DTV inputs. (See page 42 for details.) The DIGITAL SHIFT screen is not displayed when projecting images other than WIDE.

Digital Shift

DIGITAL SHIFT
END / ADJUST
TEST PTRN / RESET

or

DIGITAL SHIFT
END / ADJUST
TEST PTRN / RESET
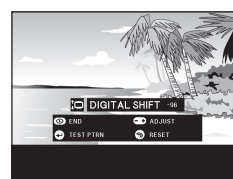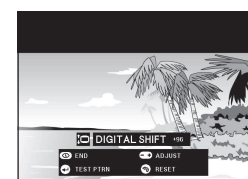
Press ▲.   Press ▼.

Adjusting the Projection Distance

Position the projector perpendicular to the screen with all feet flat and level 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 centered in the middle of the screen. If the lens center 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 colors, making viewing difficult. Close the curtains and dim the lights when setting up the screen in a sunny or bright room.
- A polarizing screen cannot be used with this projector.

Four optional lenses from Sharp are also available for specialized application. Please see your local Sharp Industrial LCD Products Dealer to details on all the lenses. (Refer to the lens operation manual when attaching a lens.)
You can install the AN-W6EZ and AN-T6EZ optional lenses yourself. However, be sure to have service personnel install the AN-P9MX and AN-P48EZ optional lenses.

Throw Distance

The graph below is for 100 inches (254 cm) screen with 4:3 normal mode.

Screen

AN-P9MX
5′11″ (1.8 m)
Throw distance ratio 1:0.9

AN-W6EZ
8′6″–11′2″ (2.6–3.4 m)
Throw distance ratio 1:1.3–1.7

Standard
12′–15′11″ (3.7–4.9 m)
Throw distance ratio 1:1.8–2.4

AN-T6EZ
16′5″–21′6″ (5.0–6.6 m)
Throw distance ratio 1:2.5–3.3

AN-P48EZ
30′10″–40′4″ (9.4–12.3 m)
Throw distance ratio 1:4.6–6.1

5   10   15   20   25   30   35   40   (ft)
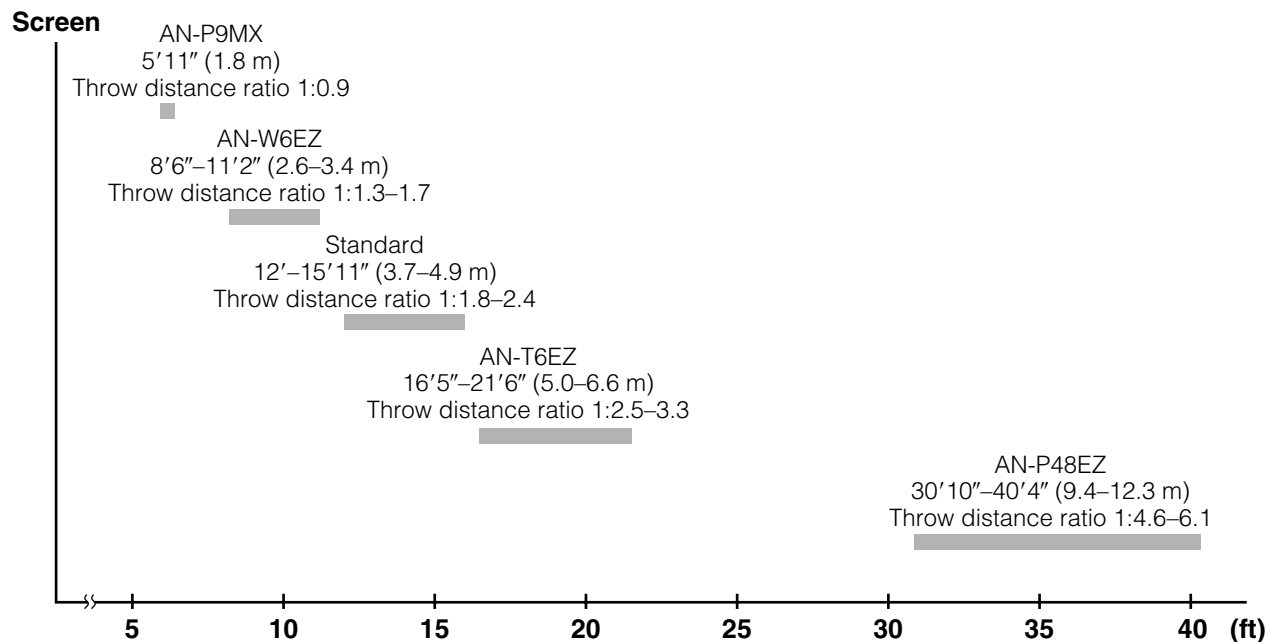
Standard Setup (Front Projection)

Place the projector at the required distance from the screen according to the desired picture size. (See pages 24 to 28 .)

NOTE
- Four optional lenses from Sharp are available for specialized application. Please see your local Sharp Industrial LCD Products Dealer for details on all the lenses.

NORMAL Mode (4:3)

3

4
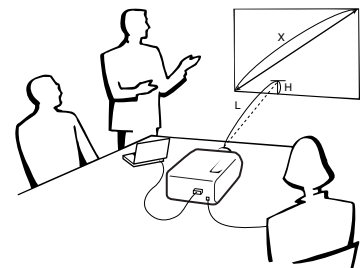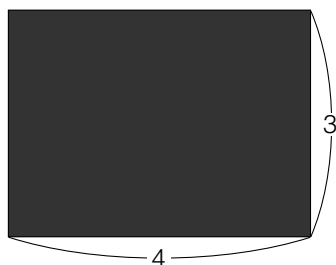
■ : Screen size and Picture size (4:3)

WIDE Mode (16:9)

16

9   3

4
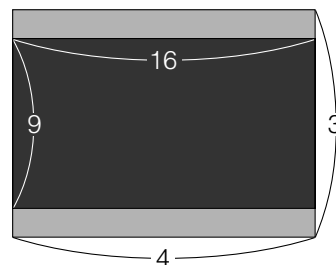
■ : Screen size and Picture size (16:9)
▯ : Signal mask area

A

Upper and Lower Lens Shift Position

- This projector is equipped with a lens shift function that lets you adjust the projection height.
- Adjust to match the setup configuration.

Screen size: 100 inches (254 cm)
WIDE Mode: 16:9
Standard Lens as an example

Screen

Lens center

Upper lens shift position
(High mount setup)

Upper lens
shift position
H H: 2′ 1″ (62.3 cm)

Lens center

Lower edge of screen (White portion) = Standard (0) point

Lower lens shift position
(Desktop setup)

H

Lower lens shift position H: −8.2″ (−20.8 cm)
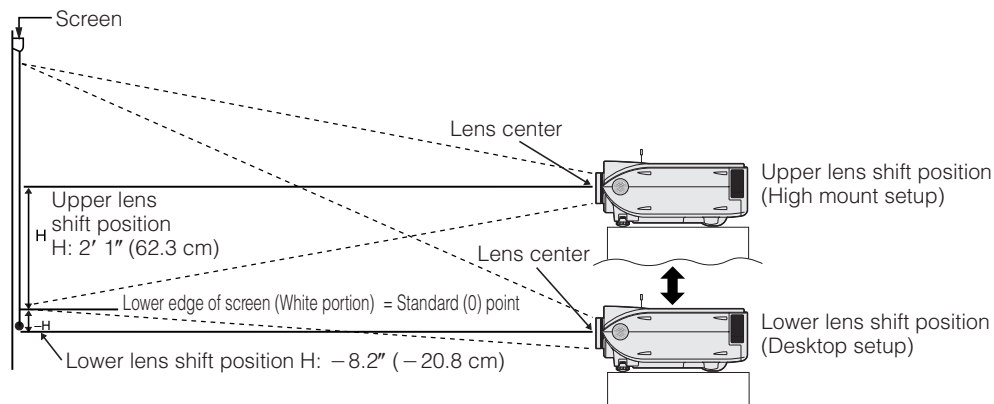
Upper and Lower Lens Shift Position (Ceiling Mount)

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

H

Upper edge of screen

H
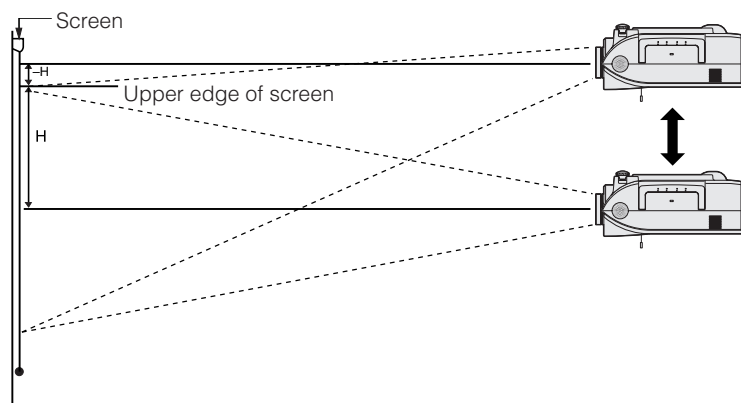
NOTE

- 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.

Setup & Connections

Standard Lens
Throw distance ratio
1:1.8 to 2.4

NORMAL Mode (4:3)

Screen size (4:3) (X)			Projection distance (L)		Lens center to the lower edge of the screen (H)	
Diag.	Width	Height	Maximum (l_1)	Minimum (l_2)	Upper lens shift position (h_1)	Lower lens shift position (h_2)
300″	240″	180″	47′ 0″ (14.3 m)	36′ 2″ (11.0 m)	7′ 6″ (228.6 cm)	0.0″ (0.0 cm)
200″	160″	120″	32′ 2″ (9.8 m)	24′ 3″ (7.4 m)	5′ 0″ (152.4 cm)	0.0″ (0.0 cm)
150″	120″	90″	23′ 6″ (7.2 m)	18′ 4″ (5.6 m)	3′ 9″ (114.3 cm)	0.0″ (0.0 cm)
100″	80″	60″	15′ 11″ (4.9 m)	12′ 0″ (3.7 m)	2′ 6″ (76.2 cm)	0.0″ (0.0 cm)
84″	67″	50″	13′ 2″ (4.0 m)	10′ 1″ (3.1 m)	2′ 1″ (64.0 cm)	0.0″ (0.0 cm)
72″	58″	43″	11′ 1″ (3.4 m)	8′ 6″ (2.6 m)	1′ 10″ (54.9 cm)	0.0″ (0.0 cm)
60″	48″	36″	9′ 6″ (2.9 m)	7′ 3″ (2.2 m)	1′ 6″ (45.7 cm)	0.0″ (0.0 cm)
40″	32″	24″	6′ 1″ (1.9 m)	4′ 7″ (1.4 m)	1′ 0″ (30.5 cm)	0.0″ (0.0 cm)

The formula for screen size and projection distance

l_1 (Max.) = $(0.0482x - 0.0226) \times 3.28$
l_2 (Min.) = $(0.037x - 0.041) \times 3.28$
h_1(Upper) = $0.3x$
h_2(Lower) = 0

x: Screen size (diag.) (X) (inches)
l: Projection distance (L) (feet)
h: Lens center to the lower edge of the screen (H) (inches)

WIDE Mode (16:9)

Screen size (4:3) (X)			Projection distance (L)		Lens center to the lower edge of the screen (H)	
Diag.	Width	Height	Maximum (l_1)	Minimum (l_2)	Upper lens shift position (h_1)	Lower lens shift position (h_2)
300″	261″	147″	51′ 3″ (15.6 m)	39′ 5″ (12.0 m)	6′ 2″ (186.8 cm)	−2′ 1″ (−62.3 cm)
200″	174″	98″	34′ 5″ (10.5 m)	26′ 5″ (8.1 m)	4′ 1″ (124.5 cm)	−1′ 4″ (−41.5 cm)
150″	131″	74″	25′ 11″ (7.9 m)	19′ 11″ (6.1 m)	3′ 1″ (93.4 cm)	−1′ 0″ (−31.1 cm)
133″	116″	65″	23′ 0″ (7.0 m)	17′ 7″ (5.4 m)	2′ 9″ (82.8 cm)	−10.9″ (−27.6 cm)
106″	92″	52″	18′ 3″ (5.6 m)	14′ 0″ (4.3 m)	2′ 2″ (66.0 cm)	−8.7″ (−22.0 cm)
100″	87″	49″	17′ 0″ (5.2 m)	13′ 1″ (4.0 m)	2′ 1″ (62.3 cm)	−8.2″ (−20.8 cm)
92″	80″	45″	15′ 10″ (4.8 m)	12′ 1″ (3.7 m)	1′ 11″ (57.3 cm)	−7.5″ (−19.1 cm)
84″	73″	41″	14′ 1″ (4.3 m)	10′ 10″ (3.3 m)	1′ 9″ (52.3 cm)	−6.9″ (−17.4 cm)
72″	63″	35″	12′ 0″ (3.7 m)	9′ 3″ (2.8 m)	1′ 6″ (44.8 cm)	−5.9″ (−14.9 cm)
60″	52″	29″	10′ 2″ (3.1 m)	7′ 10″ (2.4 m)	1′ 3″ (37.4 cm)	−4.9″ (−12.5 cm)
40″	35″	20″	6′ 6″ (2.0 m)	5′ 0″ (1.5 m)	9.8″ (24.9 cm)	−3.3″ (−8.3 cm)

The formula for screen size and projection distance

l_1 (Max.) = $(0.0525x - 0.0546) \times 3.28$
l_2 (Min.) = $(0.0404x - 0.0397) \times 3.28$
h_1(Upper) = $0.2451x$
h_2(Lower) = $-0.0817x$

x: Screen size (diag.) (X) (inches)
l: Projection distance (L) (feet)
h: Lens center to the lower edge of the screen (H) (inches)

NOTE ▶
• There is an error of ±3% in the formula above.
• Values with a minus (−) sign indicate the distance of the lens center below the bottom of the screen.

Setup & Connections

AN-W6EZ
Throw distance ratio
1:1.3 to 1.7

NORMAL Mode (4:3)

Screen size (4:3) (X)			Projection distance (L)		Lens center to the lower edge of the screen (H)	
Diag.	Width	Height	Maximum (l_1)	Minimum (l_2)	Upper lens shift position (h_1)	Lower lens shift position (h_2)
300″	240″	180″	33′ 11″ (10.3 m)	26′ 1″ (7.9 m)	7′ 6″ (228.6 cm)	0.0″ (0.0 cm)
200″	160″	120″	22′ 6″ (6.9 m)	17′ 3″ (5.3 m)	5′ 0″ (152.4 cm)	0.0″ (0.0 cm)
150″	120″	90″	16′ 10″ (5.1 m)	12′ 11″ (3.9 m)	3′ 9″ (114.3 cm)	0.0″ (0.0 cm)
100″	80″	60″	11′ 2″ (3.4 m)	8′ 6″ (2.6 m)	2′ 6″ (76.2 cm)	0.0″ (0.0 cm)
84″	67″	50″	9′ 4″ (2.8 m)	7′ 1″ (2.2 m)	2′ 1″ (64.0 cm)	0.0″ (0.0 cm)
72″	58″	43″	8′ 0″ (2.4 m)	6′ 1″ (1.9 m)	1′ 10″ (54.9 cm)	0.0″ (0.0 cm)
60″	48″	36″	6′ 7″ (2.0 m)	5′ 0″ (1.5 m)	1′ 6″ (45.7 cm)	0.0″ (0.0 cm)
40″	32″	24″	4′ 4″ (1.3 m)	3′ 3″ (1.0 m)	1′ 0″ (30.5 cm)	0.0″ (0.0 cm)

The formula for screen size and projection distance

l_1 (Max.) = $(0.0347x - 0.0709) \times 3.28$
l_2 (Min.) = $(0.0267x - 0.0715) \times 3.28$
h_1 (Upper) = $0.3x$
h_2 (Lower) = 0

x: Screen size (diag.) (X) (inches)
l: Projection distance (L) (feet)
h: Lens center to the lower edge of the screen (H) (inches)

WIDE Mode (16:9)

Screen size (4:3) (X)			Projection distance (L)		Lens center to the lower edge of the screen (H)	
Diag.	Width	Height	Maximum (l_1)	Minimum (l_2)	Upper lens shift position (h_1)	Lower lens shift position (h_2)
300″	261″	147″	37′ 0″ (11.3 m)	28′ 5″ (8.7 m)	6′ 2″ (186.8 cm)	−2′ 1″ (−62.3 cm)
200″	174″	98″	24′ 7″ (7.5 m)	18′ 10″ (5.8 m)	4′ 1″ (124.5 cm)	−1′ 4″ (−41.5 cm)
150″	131″	74″	18′ 4″ (5.6 m)	14′ 1″ (4.3 m)	3′ 1″ (93.4 cm)	−1′ 0″ (−31.1 cm)
133″	116″	65″	16′ 3″ (5.0 m)	12′ 6″ (3.8 m)	2′ 9″ (82.8 cm)	−10.9″ (−27.6 cm)
106″	92″	52″	12′ 11″ (3.9 m)	9′ 11″ (3.0 m)	2′ 2″ (66.0 cm)	−8.7″ (−22.0 cm)
100″	87″	49″	12′ 2″ (3.7 m)	9′ 4″ (2.8 m)	2′ 1″ (62.3 cm)	−8.2″ (−20.8 cm)
92″	80″	45″	11′ 2″ (3.4 m)	8′ 6″ (2.6 m)	1′ 11″ (57.3 cm)	−7.5″ (−19.1 cm)
84″	73″	41″	10′ 2″ (3.1 m)	7′ 9″ (2.4 m)	1′ 9″ (52.3 cm)	−6.9″ (−17.4 cm)
72″	63″	35″	8′ 8″ (2.7 m)	6′ 8″ (2.0 m)	1′ 6″ (44.8 cm)	−5.9″ (−14.9 cm)
60″	52″	29″	7′ 3″ (2.2 m)	5′ 6″ (1.7 m)	1′ 3″ (37.4 cm)	−4.9″ (−12.5 cm)
40″	35″	20″	4′ 9″ (1.4 m)	3′ 7″ (1.1 m)	9.8″ (24.9 cm)	−3.3″ (−8.3 cm)

The formula for screen size and projection distance

l_1 (Max.) = $(0.0378x - 0.0726) \times 3.28$
l_2 (Min.) = $(0.0291x - 0.0731) \times 3.28$
h_1 (Upper) = $0.2451x$
h_2 (Lower) = $-0.0817x$

x: Screen size (diag.) (X) (inches)
l: Projection distance (L) (feet)
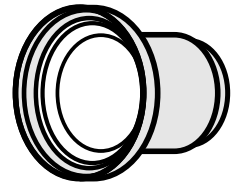h: Lens center to the lower edge of the screen (H) (inches)
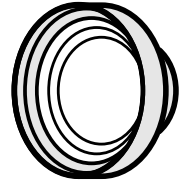
NOTE ▶
- There is an error of ±3% in the formula above.
- Values with a minus (−) sign indicate the distance of the lens center below the bottom of the screen.

AN-T6EZ
Throw distance ratio
1:2.5 to 3.3

NORMAL Mode (4:3)

Screen size (4:3) (X)			Projection distance (L)		Lens center to the lower edge of the screen (H)	
Diag.	Width	Height	Maximum (l_1)	Minimum (l_2)	Upper lens shift position (h_1)	Lower lens shift position (h_2)
300″	240″	180″	65′ 9″ (20.0 m)	50′ 5″ (15.4 m)	7′ 6″ (228.6 cm)	0.0″ (0.0 cm)
200″	160″	120″	43′ 8″ (13.3 m)	33′ 5″ (10.2 m)	5′ 0″ (152.4 cm)	0.0″ (0.0 cm)
150″	120″	90″	32′ 7″ (9.9 m)	24′ 11″ (7.6 m)	3′ 9″ (114.3 cm)	0.0″ (0.0 cm)
100″	80″	60″	21′ 6″ (6.6 m)	16′ 5″ (5.0 m)	2′ 6″ (76.2 cm)	0.0″ (0.0 cm)
84″	67″	50″	18′ 0″ (5.5 m)	13′ 8″ (4.2 m)	2′ 1″ (64.0 cm)	0.0″ (0.0 cm)
72″	58″	43″	15′ 4″ (4.7 m)	11′ 8″ (3.6 m)	1′ 10″ (54.9 cm)	0.0″ (0.0 cm)
60″	48″	36″	12′ 8″ (3.9 m)	9′ 7″ (2.9 m)	1′ 6″ (45.7 cm)	0.0″ (0.0 cm)
40″	32″	24″	8′ 3″ (2.5 m)	6′ 2″ (1.9 m)	1′ 0″ (30.5 cm)	0.0″ (0.0 cm)

The formula for screen size and projection distance

l_1 (Max.) = (0.0674x − 0.178) × 3.28　　　x: Screen size (diag.) (X) (inches)
l_2 (Min.) = (0.0519x − 0.1829) × 3.28　　l: Projection distance (L) (feet)
h_1 (Upper) = 0.3x　　　　　　　　　　　　h: Lens center to the lower edge of the screen (H) (inches)
h_2 (Lower) = 0

WIDE Mode (16:9)

Screen size (4:3) (X)			Projection distance (L)		Lens center to the lower edge of the screen (H)	
Diag.	Width	Height	Maximum (l_1)	Minimum (l_2)	Upper lens shift position (h_1)	Lower lens shift position (h_2)
300″	261″	147″	71′ 8″ (21.8 m)	55′ 0″ (16.8 m)	6′ 2″ (186.8 cm)	−2′ 1″ (−62.3 cm)
200″	174″	98″	47′ 7″ (14.5 m)	36′ 5″ (11.1 m)	4′ 1″ (124.5 cm)	−1′ 4″ (−41.5 cm)
150″	131″	74″	35′ 6″ (10.8 m)	27′ 2″ (8.3 m)	3′ 1″ (93.4 cm)	−1′ 0″ (−31.1 cm)
133″	116″	65″	31′ 5″ (9.6 m)	24′ 1″ (7.3 m)	2′ 9″ (82.8 cm)	−10.9″ (−27.6 cm)
106″	92″	52″	24′ 11″ (7.6 m)	19′ 1″ (5.8 m)	2′ 2″ (66.0 cm)	−8.7″ (−22.0 cm)
100″	87″	49″	23′ 6″ (7.2 m)	17′ 11″ (5.5 m)	2′ 1″ (62.3 cm)	−8.2″ (−20.8 cm)
92″	80″	45″	21′ 7″ (6.6 m)	16′ 6″ (5.0 m)	1′ 11″ (57.3 cm)	−7.5″ (−19.1 cm)
84″	73″	41″	19′ 8″ (6.0 m)	15′ 0″ (4.6 m)	1′ 9″ (52.3 cm)	−6.9″ (−17.4 cm)
72″	63″	35″	16′ 9″ (5.1 m)	12′ 9″ (3.9 m)	1′ 6″ (44.8 cm)	−5.9″ (−14.9 cm)
60″	52″	29″	13′ 11″ (4.2 m)	10′ 6″ (3.2 m)	1′ 3″ (37.4 cm)	−4.9″ (−12.5 cm)
40″	35″	20″	9′ 1″ (2.8 m)	6′ 10″ (2.1 m)	9.8″ (24.9 cm)	−3.3″ (−8.3 cm)

The formula for screen size and projection distance

l_1 (Max.) = (0.0734x − 0.1764) × 3.28　　x: Screen size (diag.) (X) (inches)
l_2 (Min.) = (0.0565x − 0.1778) × 3.28　　l: Projection distance (L) (feet)
h_1 (Upper) = 0.2451x　　　　　　　　　　h: Lens center to the lower edge of the screen (H) (inches)
h_2 (Lower) = −0.0817x

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

Setup & Connections

AN-P9MX
Throw distance ratio
1:0.9

NORMAL Mode (4:3)

Screen size (4:3) (X)			Projection distance (L)	Lens center to the lower edge of the screen (H)
Diag.	Width	Height		
300″	240″	180″	18′ 1″ (5.5 m)	7′ 6″ (228.6 cm)
200″	160″	120″	12′ 0″ (3.7 m)	5′ 0″ (152.4 cm)
150″	120″	90″	9′ 0″ (2.7 m)	3′ 9″ (114.3 cm)
100″	80″	60″	5′ 11″ (1.8 m)	2′ 6″ (76.2 cm)
84″	67″	50″	4′ 11″ (1.5 m)	2′ 1″ (64.0 cm)
72″	58″	43″	4′ 2″ (1.3 m)	1′ 10″ (54.9 cm)
60″	48″	36″	3′ 6″ (1.1 m)	1′ 6″ (45.7 cm)
40″	32″	24″	2′ 3″ (0.7 m)	1′ 0″ (30.5 cm)

The formula for screen size and projection distance

$l = (0.0186x - 0.0563) \times 3.28$

$h = 0.3x$

x: Screen size (diag.) (X) (inches)

l: Projection distance (L) (feet)

h: Lens center to the lower edge of the screen (H) (inches)

WIDE Mode (16:9)

Screen size (4:3) (X)			Projection distance (L)	Lens center to the lower edge of the screen (H)
Diag.	Width	Height		
300″	261″	147″	19′ 9″ (6.0 m)	6′ 2″ (186.8 cm)
200″	174″	98″	13′ 2″ (4.0 m)	4′ 1″ (124.5 cm)
150″	131″	74″	9′ 10″ (3.0 m)	3′ 1″ (93.4 cm)
133″	116″	65″	8′ 8″ (2.6 m)	2′ 9″ (82.8 cm)
106″	92″	52″	6′ 10″ (2.1 m)	2′ 2″ (66.0 cm)
100″	87″	49″	6′ 6″ (2.0 m)	2′ 1″ (62.3 cm)
92″	80″	45″	5′ 11″ (1.8 m)	1′ 11″ (57.3 cm)
84″	73″	41″	5′ 4″ (1.6 m)	1′ 9″ (52.3 cm)
72″	63″	35″	4′ 8″ (1.4 m)	1′ 6″ (44.8 cm)
60″	52″	29″	3′ 9″ (1.2 m)	1′ 3″ (37.4 cm)
40″	35″	20″	2′ 6″ (0.8 m)	10.0″ (24.9 cm)

The formula for screen size and projection distance

$l = (0.0203x - 0.0579) \times 3.28$

$h = 0.2451x$

x: Screen size (diag.) (X) (inches)

l: Projection distance (L) (feet)

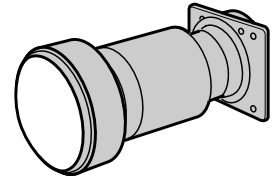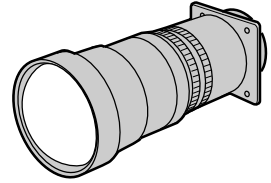h: Lens center to the lower edge of the screen (H) (inches)

NOTE ▶

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

AN-P48EZ
Throw distance ratio
1:4.6 to 6.1

NORMAL Mode (4:3)

Screen size (4:3) (X)			Projection distance (L)		Lens center to the lower edge of the screen (H)	
Diag.	Width	Height	Maximum (l_1)	Minimum (l_2)	Upper lens shift position (h_1)	Lower lens shift position (h_2)
300″	240″	180″	119′ 9″ (36.5 m)	91′ 6″ (27.9 m)	7′ 6″ (228.6 cm)	0.0″ (0.0 cm)
200″	160″	120″	80′ 1″ (24.4 m)	61′ 4″ (18.7 m)	5′ 0″ (152.4 cm)	0.0″ (0.0 cm)
150″	120″	90″	60′ 0″ (18.3 m)	45′ 11″ (14.0 m)	3′ 9″ (114.3 cm)	0.0″ (0.0 cm)
100″	80″	60″	40′ 4″ (12.3 m)	30′ 10″ (9.4 m)	2′ 6″ (76.2 cm)	0.0″ (0.0 cm)
84″	67″	50″	33′ 10″ (10.3 m)	25′ 11″ (7.9 m)	2′ 1″ (64.0 cm)	0.0″ (0.0 cm)
72″	58″	43″	29′ 2″ (8.9 m)	22′ 4″ (6.8 m)	1′ 10″ (54.9 cm)	0.0″ (0.0 cm)
60″	48″	36″	24′ 3″ (7.4 m)	18′ 8″ (5.7 m)	1′ 6″ (45.7 cm)	0.0″ (0.0 cm)

The formula for screen size and projection distance

l_1 (Max.) = $(0.1214x + 0.1272) \times 3.28$ x: Screen size (diag.) (X) (inches)
l_2 (Min.) = $(0.0927x + 0.1233) \times 3.28$ l: Projection distance (L) (feet)
h_1 (Upper) = $0.3x$ h: Lens center to the lower edge of the screen (H) (inches)
h_2 (Lower) = 0

WIDE Mode (16:9)

Screen size (4:3) (X)			Projection distance (L)		Lens center to the lower edge of the screen (H)	
Diag.	Width	Height	Maximum (l_1)	Minimum (l_2)	Upper lens shift position (h_1)	Lower lens shift position (h_2)
300″	261″	147″	130′ 7″ (39.8 m)	99′ 9″ (30.4 m)	6′ 2″ (186.8 cm)	−2′ 1″ (−62.3 cm)
200″	174″	98″	87′ 3″ (26.6 m)	66′ 7″ (20.3 m)	4′ 1″ (124.5 cm)	−1′ 4″ (−41.5 cm)
150″	131″	74″	65′ 7″ (20.0 m)	50′ 2″ (15.3 m)	3′ 1″ (93.4 cm)	−1′ 0″ (−31.1 cm)
133″	116″	65″	58′ 1″ (17.7 m)	44′ 7″ (13.6 m)	2′ 9″ (82.8 cm)	−10.9″ (−27.6 cm)
106″	92″	52″	46′ 3″ (14.1 m)	35′ 5″ (10.8 m)	2′ 2″ (66.0 cm)	−8.7″ (−22.0 cm)
100″	87″	49″	44′ 0″ (13.4 m)	33′ 6″ (10.2 m)	2′ 1″ (62.3 cm)	−8.2″ (−20.8 cm)
92″	80″	45″	40′ 4″ (12.3 m)	30′ 10″ (9.4 m)	1′ 11″ (57.3 cm)	−7.5″ (−19.1 cm)
84″	73″	41″	36′ 9″ (11.2 m)	28′ 3″ (8.6 m)	1′ 9″ (52.3 cm)	−6.9″ (−17.4 cm)
72″	63″	35″	31′ 10″ (9.7 m)	24′ 3″ (7.4 m)	1′ 6″ (44.8 cm)	−5.9″ (−14.9 cm)
60″	52″	29″	26′ 7″ (8.1 m)	20′ 4″ (6.2 m)	1′ 3″ (37.4 cm)	−4.9″ (−12.5 cm)

The formula for screen size and projection distance

l_1 (Max.) = $(0.1323x + 0.1272) \times 3.28$ x: Screen size (diag.) (X) (inches)
l_2 (Min.) = $(0.101x + 0.1233) \times 3.28$ l: Projection distance (L) (feet)
h_1 (Upper) = $0.2451x$ h: Lens center to the lower edge of the screen (H) (inches)
h_2 (Lower) = $-0.0817x$

NOTE ▶
• There is an error of ±3% in the formula above.
• Values with a minus (−) sign indicate the distance of the lens center below the bottom of the screen.
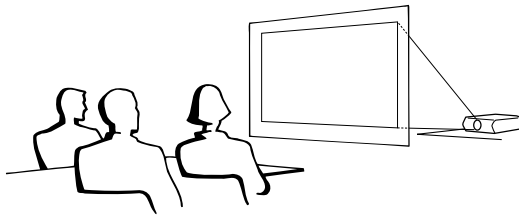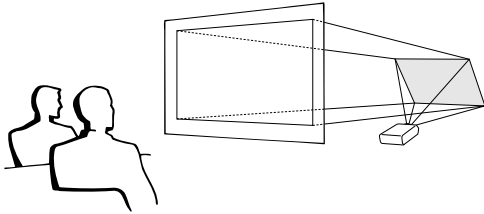
Image Projection

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 **57** 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 level.

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
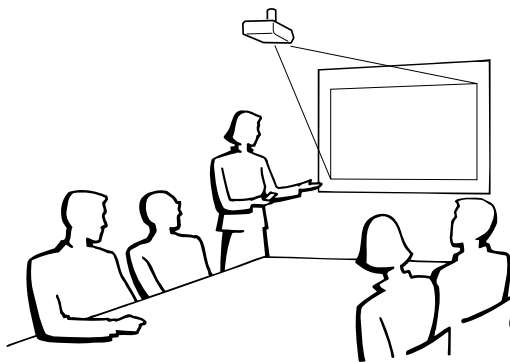
- It is recommended that you use the optional Sharp ceiling-mount bracket for this installation.
- Before mounting the projector, contact your nearest Authorized Sharp Industrial LCD Products Dealer or Service Center to obtain the recommended ceiling-mount bracket (sold separately). (AN-XGCM61 ceiling-mount bracket, AN-EP101AP extension tube for AN-XGCM61.)
- 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 **57** for use of this function.)

GyroRemote Features

1. **RF design provides nondirectional control.**
2. **Individual Recognition (Teach/Learn) function for multi-projector control.**
3. **Senses your natural hand motion for accurate control of mouse operations and projector menus.**

1. RF Technology

Nondirectional radio design with 98′ 5″ (30 m) range.

NOTE ▶

• The control range measured is with the antenna fully extended.
• The control range under actual operating conditions may be less than optimum depending on where the projector is placed and the radio signal environment.

RF: Nondirectional

98′ 5″ (30 m)
98′ 5″ (30 m)
98′ 5″ (30 m)
98′ 5″ (30 m)
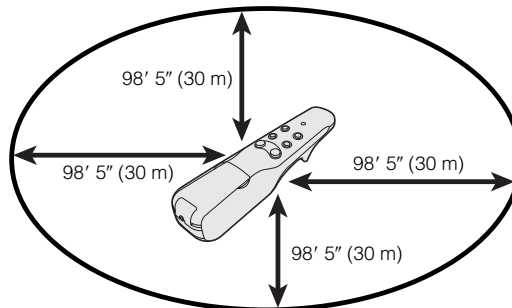
2. Multi-Projector Control

An individual recognition function makes it possible to control multiple projectors.

No radio interference even if other projectors of the same type are within GyroRemote's operating range.

Projector: 1 unit
GyroRemote: 1 unit
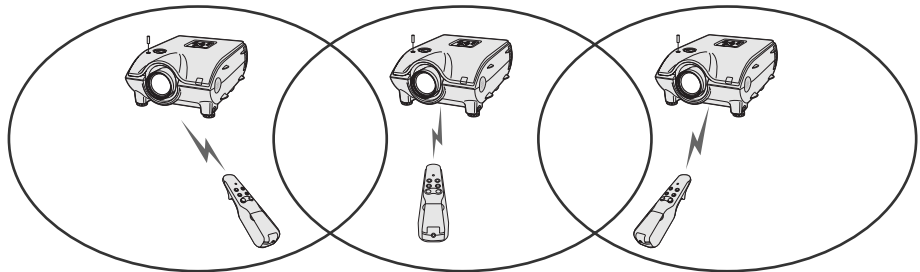
Can operate multiple projections with one GyroRemote.

Projector: multiple units
GyroRemote: 1 unit
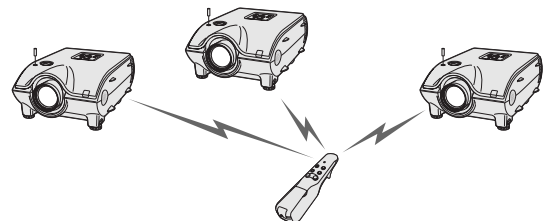
Can operate one projector using multiple GyroRemotes.

Projector: 1 unit
GyroRemote: multiple units

Operation Buttons

E-30
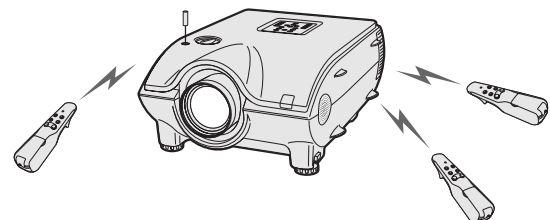
3. Gesture tracking

Accurately tracks your hand movements in the air for pinpoint control of projector menus and computer cursor.

**Projector Control
(for OSD)**

USB mouse control cable

Mouse Control

NOTE

• **GYRO ACTIVE**, **LEFT-CLICK/ENTER** and **RIGHT-CLICK/UNDO** controls depend on whether the GyroRemote is operating the projector or the computer.
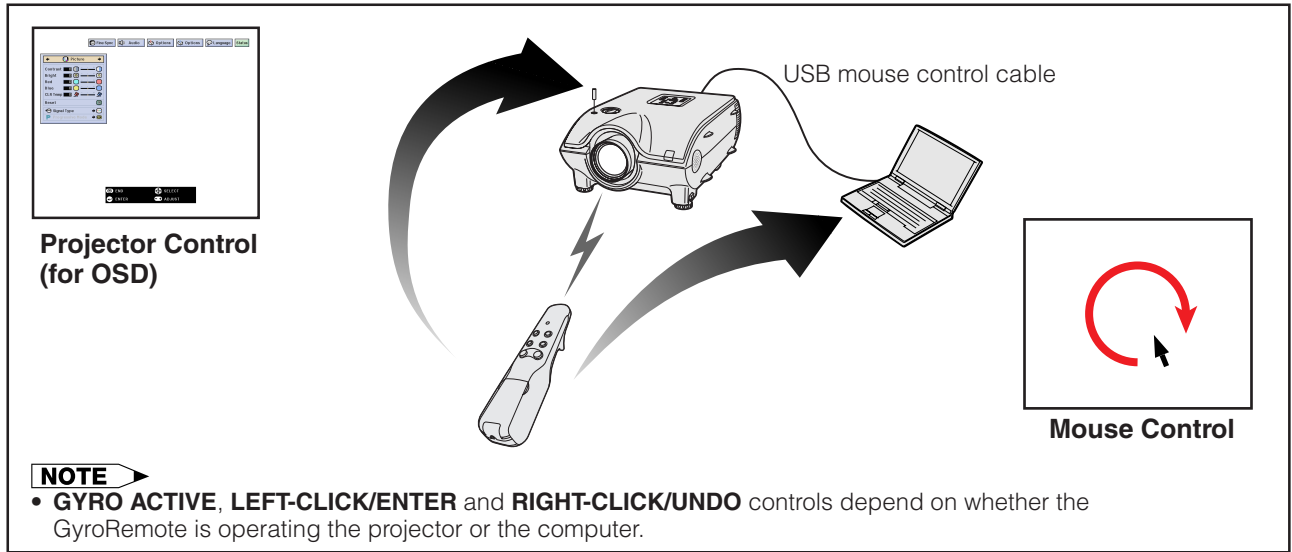
Projector Control

On-screen Display
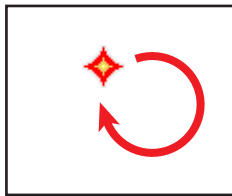
Bright and easy-to-see screen pointer.
(See page **32** .)
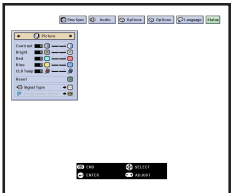
Operate the menu with a simple wave of the hand.
(See page **32** .)

Inside the upper cover
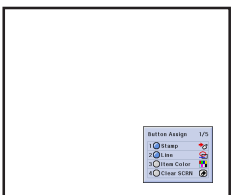
Press **ASSIGN Select** to toggle and display the 5 "Button ASSIGN" lists one-by-one. Each "Button ASSIGN" list has 4 selection items.
(See page **33** .)
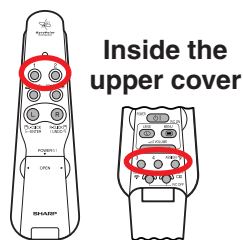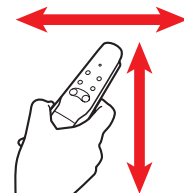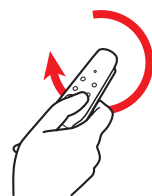
Mouse Control
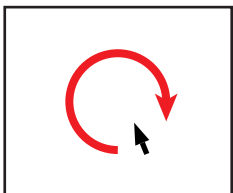
You can operate your computer with the same operating feeling as a normal mouse.
(See page **35** .)
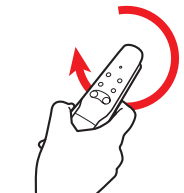
⬚ Using GyroRemote
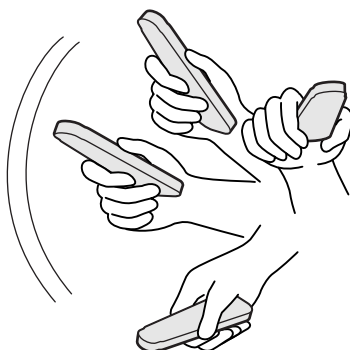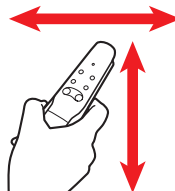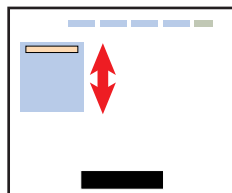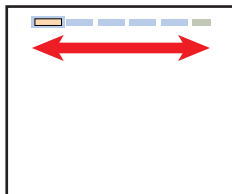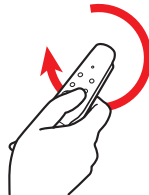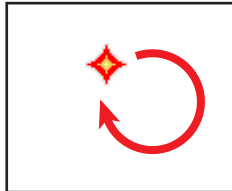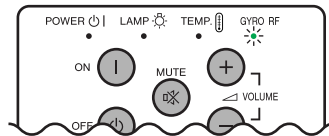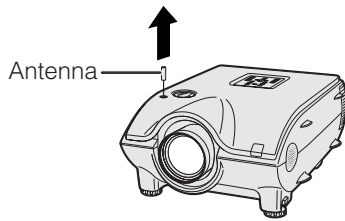
Antenna

Preparation

1 Switch on the projector power source. The projector image will appear on the screen.

2 Pull out the projector antenna.

NOTE
• The control range will not be optimized if you do not pull out the antenna. Always use with the antenna fully extended.
• The control range under actual operating conditions may be less than optimum depending on where the projector is placed and the radio signal environment.

3 Press **POWER** on the GyroRemote, located on the front, inside the upper cover.

NOTE
• The GYRO RF indicator on the projector flashes green whenever it receives a radio signal from the GyroRemote.

Operating the screen pointer

1 Press **POINTER** on the GyroRemote.
As the **POINTER** is being pushed, a pointer on the screen will display. If you release your finger from the **POINTER** it will disappear from the screen.

2 Hold the GyroRemote and move it around freely in the air. The pointer on the screen moves precisely in concert with the movement of your GyroRemote in hand.

Menu Adjustments

1 Open the upper cover on the front of the GyroRemote.

2 Press **MENU**.

3 Press **GYRO ACTIVE** on the back of the GyroRemote, and select your desired category by moving the unit left or right.

4 Then select the desired item by moving the unit up or down.

5 Move the unit left or right, or press −/+ to adjust item values.

6 Press **MENU**.
The menu display disappears.

NOTE
• Double click on **GYRO ACTIVE**, the LED will light and you can operate GyroRemote just like pressing the button continuously. To cancel this mode, press **GYRO ACTIVE** once.
• If you release **GYRO ACTIVE** located on the back of the unit, you will not be able to control operations no matter how you wave your hand in the air.

Operation Buttons

On-screen Display

Button Assign list

Button Assign 1/5
1 ◯ Stamp
2 ◯ Line
3 ◯ Item Color
4 ◯ Clear SCRN

GyroRemote

Function (1)

Function (2)

RIGHT-CLICK/UNDO

LEFT-CLICK/ENTER

Inside the upper cover
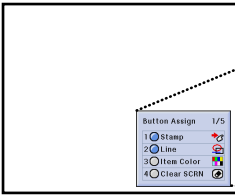
Function (3)

Function (4)
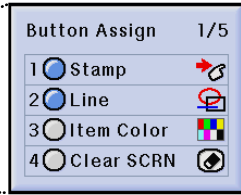
ASSIGN Select

Function ASSIGN

1 Open the upper cover on the front of GyroRemote.

2 Press **ASSIGN Select**.
"Button Assign" list appears on the lower right of the display. Each time you press **ASSIGN Select**, "Button Assign" list changes as shown below.

1/5 ⟶ 2/5 ⟶ 3/5 ⟶ 4/5 ⟶ 5/5

NOTE ▶
• Press **ASSIGN Select**. After the "Button Assign" list pops up press **LEFT-CLICK/ENTER** to view a list of all selections. Refer to the list of all Button Assign selections below.

3 Press **Function (1–4)** and select the desired item.

4 Press **UNDO**. The "Button Assign" list display disappears.

NOTE ▶
• The Button Assign function is not recorded on the GyroRemote itself, it is recorded on the projector side.

All Button Assign selections

	1/5	2/5	3/5	4/5	5/5
1	Stamp	Black Screen	Enlarge (–)	Gamma	Input1
2	Line	Freeze	Enlarge (+)	Auto Sync	Input2
3	Item Color	Mute	Screen Pan	Resize	Input3
4	Clear SCRN	Break Timer	Pict in Pict	Signal Type	Input4.5

ASSIGN ◯ : ASSIGN Select button   L : LEFT-CLICK/ENTER button   R : RIGHT-CLICK/UNDO button
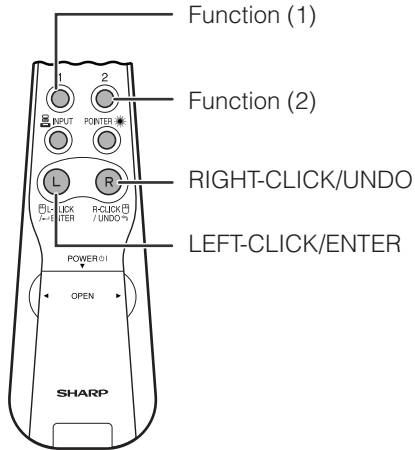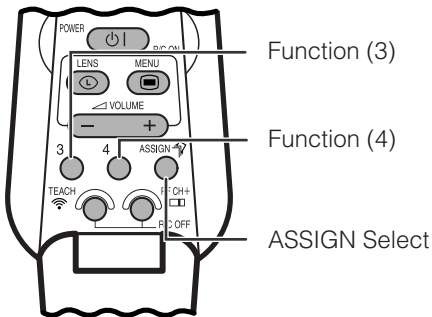
Operation Buttons
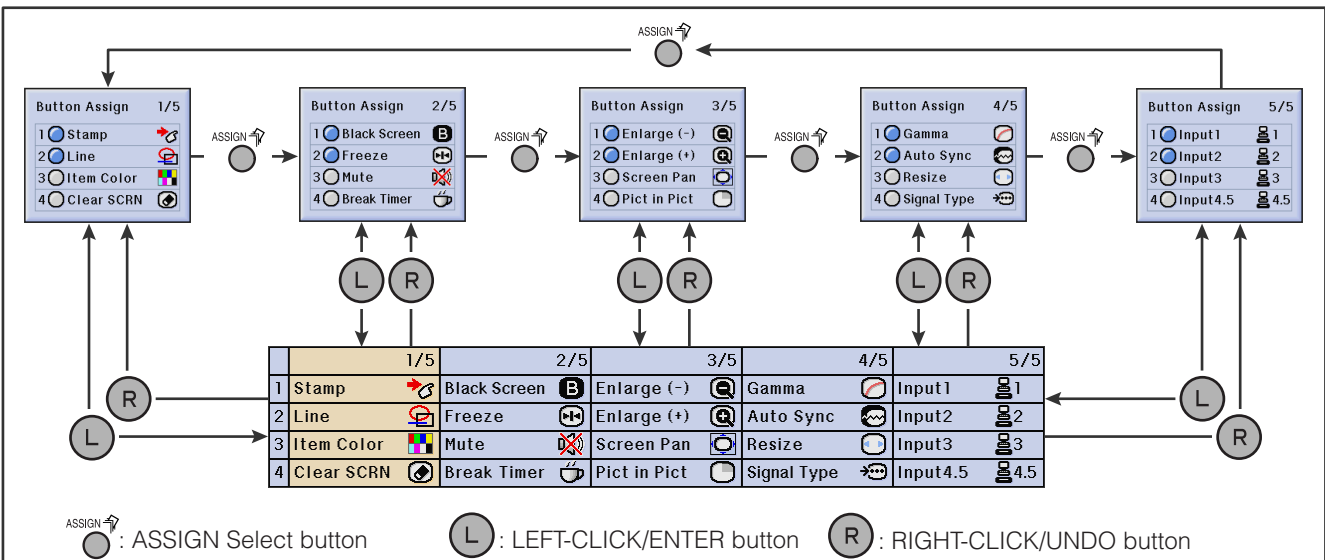
Using the Presentation Tools

This projector is equipped with presentation tools that can be used to emphasize keypoints within your presentation.

You can use these tools by accessing the "Button Assign" list on your GyroRemote. Choose popup list "1/5". (See page **33**.)

Button Assign list

```
Button Assign    1/5
1 ◯ Stamp        ➜
2 ◯ Line
3 ◯ Item Color
4 ◯ Clear SCRN
```

Stamp
Each time you press **Function (1)**, stamps can be changed as shown below.
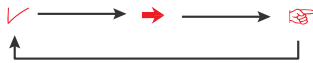
Line
Each time you press **Function (2)**, lines can be changed as shown below (straight line, horizontal or vertical line, box, circle, free line).
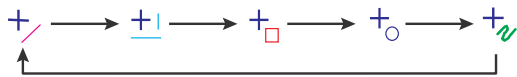
Item Color
Each time you press **Function (3)**, colors can be changed as shown below.

Red ⟶ Green ⟶ Blue ⟶ Yellow

Black ⟵ White ⟵ Purple ⟵ Light blue
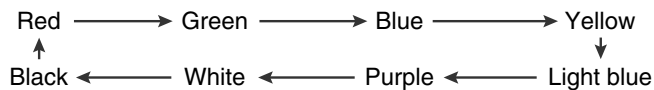
Clear SCRN
When you press **Function (4)**, all items shown on the screen can be cleared.

NOTE
• The last item selected before switching off the power is saved as the default setting.
• A check mark signifies "Stamp", a straight line is for "Line" and red is for "Item Color".

Using stamps
1 Press **Function (1)** repeatedly to select the desired stamp.
   • Types of stamps are changed as shown left.
2 Press and hold down **GYRO ACTIVE** to move the stamp to the desired position.
3 Release **GYRO ACTIVE** to set the stamp in the desired position.
4 Press **ENTER** to bring up another stamp, then repeat steps 1 to 3 above.

Using lines
1 Press **Function (2)** repeatedly to select the desired line.
   • Types of lines are changed as shown left.
2 Press and hold down **GYRO ACTIVE** to move the line to the desired starting position.
3 Release **GYRO ACTIVE** and press **ENTER** to set the line in its starting position.
4 Press and hold down **GYRO ACTIVE** again and draw the line by waving the unit around in the air freely.
5 Release **GYRO ACTIVE** to set the ending point and complete the line drawing.
6 Press **ENTER** to bring up another line, then repeat steps 1 to 5 above.

NOTE
• In steps 2 and 4 above, while holding down **GYRO ACTIVE**, wave the unit around in the air with your hand. The stamps and starting positions of the lines move and the lines are drawn precisely in concert with your hand movements.
• To change colors, press **Function (3)** while performing any of the steps above.
• To erase the item you just placed on the screen, press **UNDO**. However, when you are drawing lines with the free line tool, pressing **UNDO** will erase all free lines drawn.

Displaying the Break Timer

You can use this tool by accessing the "Button Assign" list on your GyroRemote. Choose popup list "2/5" and press **Function (4)**. (See page **33**.)
• As soon as **Function (4)** is pressed, the timer starts to count down from 5 minutes.

```
Button Assign    2/5
1 ◯ Black Screen  B
2 ◯ Freeze
3 ◯ Mute
4 ◯ Break Timer
```

➡

Conference Series

5:00

NOTE
• If you press **Function (4)** again, the Break Timer is canceled.
• You can set the Break Timer from 1 to 60 minutes with ▲/▼ on the projector or −/+ on the GyroRemote. The timer starts to count down as soon as ▲/▼ or −/+ is pressed.
• The Break Timer is displayed against the background image selected in "Selecting a Startup Image". (See page **55**.)

Operating the mouse
Basically operates the same as a standard mouse.

Connecting the projector to the computer
GyroRemote allows you to perform mouse operations on your computer.

1 Connect one end of a USB mouse control cable to your computer.

2 Connect the other end of the cable to the projector USB port.

USB mouse control cable
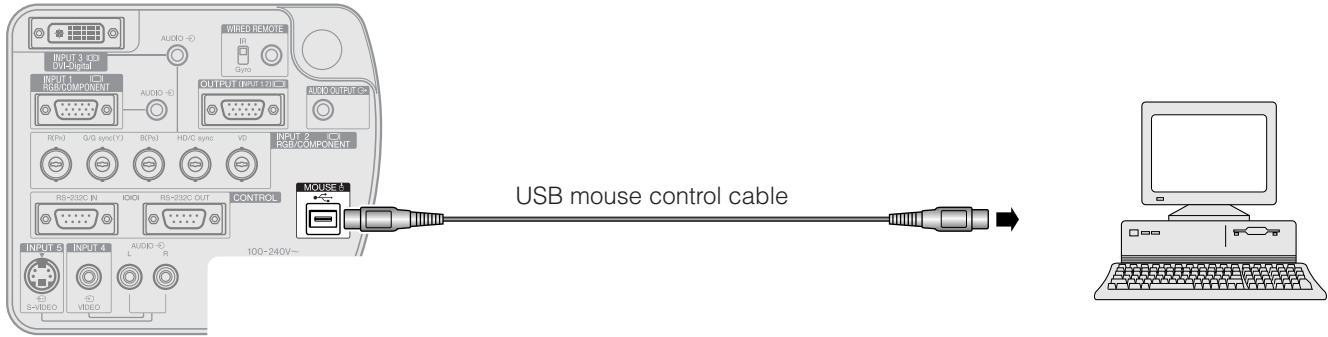
⚠️ **CAUTION**
- Windows 95 does not support USB mouse driver software.
- The minimum system requirements for the USB type mouse system are shown below.
  Windows
  Hardware: PC/AT compatible machine with USB port
  OS: Windows 98/Windows 2000/Windows Me
  Macintosh
  Hardware: Macintosh series with USB port
  OS: Mac OS 8.5 or higher

NOTE
- If this is the first time connecting the projector to the PC, the PC may need to load standard USB drivers from the operating system. Follow the on-screen instructions. Some operating systems (Windows 98) may prompt you to insert the original operating system installation CD-ROM, if the USB driver is not already loaded on the PC.

GyroRemote

LEFT-CLICK/ENTER

RIGHT-CLICK/UNDO
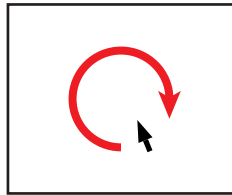
GYRO ACTIVE

Using the mouse
You can operate GyroRemote when there is no on-screen display.

1 Press **GYRO ACTIVE** on the back of GyroRemote. While pressing, wave the unit around in the air with your hand. The mouse cursor responds precisely in concert with your hand movements.

2 Release your finger from **GYRO ACTIVE**. The mouse cursor will stop moving around.

NOTE
- For left/right mouse clicks, we recommend that you first move the cursor to the item you want to click on, then release your finger from **GYRO ACTIVE** before clicking your target.
- When the projector is connected to a computer by a USB mouse cable, you can still operate the mouse even if the projector is unplugged. (However, only when GyroRemote is not connected to the projector by wired remote control cable.)

Operation Buttons
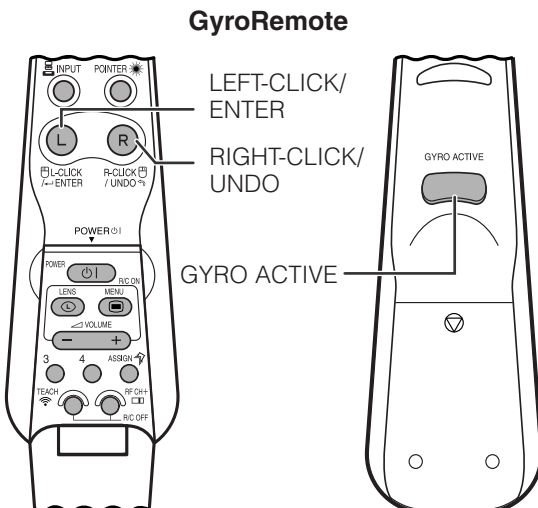
The projector uses RF channel and TEACH/LEARN settings to recognize individual projectors that may be operating in the same area, and keep them from interfering with each other. One GyroRemote can operate multiple projectors or you can even use multiple GyroRemotes to control one projector.

Setting RF channels

GyroRemote uses radio signals, which can receive interference under certain conditions. To avoid interference, you can switch RF channels. GyroRemote has 8 channels.

GyroRemote

LED

RF CH +

On-screen Display

RF CH : 7
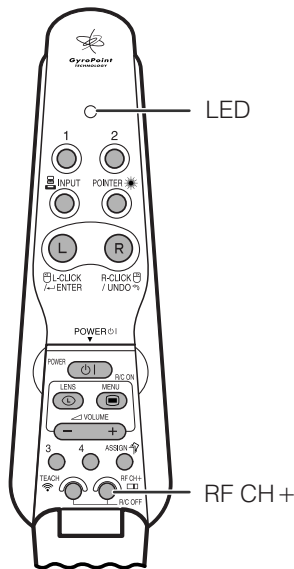
Confirming the present RF channel

1 Press **RF CH +** located on the front, inside the upper cover.

2 The current channel in use is displayed on the lower right of the screen. You can also confirm the RF channel by the number of times the LED flashes. (Ex: RF Channel 7 if the LED flashes 7 times.)

Switching RF channels

1 Press **RF CH +** for over 1 sec.

2 Each time you press for over 1 sec. the RF channel changes as shown below.

$$1 \rightarrow 2 \rightarrow 3 \rightarrow 4 \rightarrow 5 \rightarrow 6 \rightarrow 7 \rightarrow 8$$

3 Each time you change RF channels it is displayed in the lower right of the screen.

NOTE
• An auto-search is performed on the projector side, so there is no need for manually adjusting the projector

Operation Buttons

TEACH/LEARN

- Each GyroRemote has its own ID code, which must be recognized by the projector that is going to be used.
- The projector only recognizes the signal of the GyroRemote whose ID code has been input. Signals from other projectors or GyroRemotes that may be operating in the same area are not allowed to interrupt each other.

Projector   **GyroRemote**

ENTER

TEACH

LEARN

On-screen Display

Do you want to Learn?
Yes : Press ENTER   No : Please wait

Operation Buttons
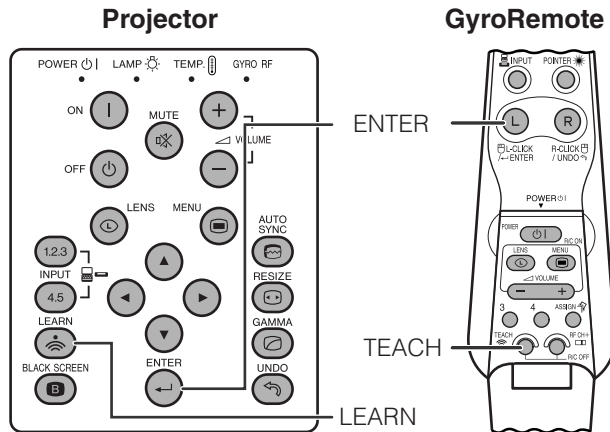
1 Press **LEARN** on the projector.

2 While "Do you want to LEARN?" is displaying, press **ENTER**. You are now in LEARN mode.

⚠ **CAUTION**
- Entering LEARN mode erases all previously registered GyroRemotes data. You must re-enter each GyroRemote ID code in order for the projector to recognize them again.

3 Press **TEACH** located on the front, inside the upper cover on the remote within 5 minutes. "Register" will appear on the display and you can now start using the GyroRemote with the projector.

4 To exit from the LEARN mode, press **LEARN**.

NOTE
- LEARN mode will exit if the **LEARN** is pressed or 5 minutes has elapsed.

Operating multiple projectors with one GyroRemote

⚠ **CAUTION**
- Be aware that you can operate multiple projectors with one GyroRemote, even if you are in another room, as long as you stay within a 98′ 5″ (30 m) range of the projector.

1 Set projector to LEARN mode.

2 Press **TEACH** on the GyroRemote. You can now operate multiple projectors with one GyroRemote.

3 Perform steps 1 and 2 for each projector you plan to use.

4 To exit from LEARN mode, press **LEARN**.

NOTE
- For setting multiple units in LEARN mode at one time, perform step 1 above for all projectors.

Using multiple GyroRemotes to operate one projector

One projector can recognize up to 8 GyroRemote ID codes.

1 Set projector to LEARN mode.

2 Press **TEACH** on all GyroRemotes being used. Once the eighth GyroRemote is registered to operate one projector, the LEARN mode automatically finishes. You can now operate one projector using multiple GyroRemotes.

3 To exit from the LEARN mode, press **LEARN**.

NOTE
- Contact your nearest Authorized Sharp Industrial LCD Products Dealer or Service Center if you need to use an additional GyroRemote unit.
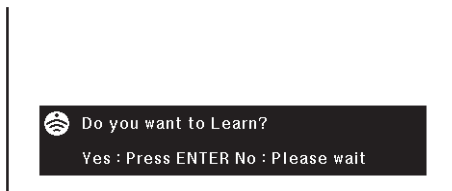
Turning off GyroRemote

> ⚠ **CAUTION**
> • Make sure to turn off GyroRemote aboard aircraft or other places where using radio signals is prohibited.

GyroRemote

- LED
- POWER
- TEACH
- RF CH+
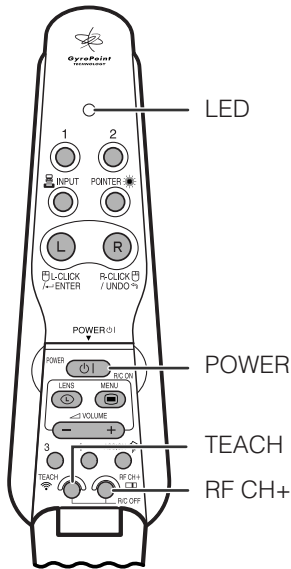
1 Press **TEACH** and **RF CH +** located inside the upper cover at the same time, the LED will flash 3 times and the GyroRemote will turn off.

2 If the LED doesn't light up after pressing any of the buttons (except **POWER**), the GyroRemote power is turned off.

> NOTE ►
> • Press **TEACH** and **RF CH +** at the same time or **POWER** located inside the upper cover of the GyroRemote to turn the power on.
> • When the power is turned off, the GyroRemote is protected from malfunctioning or battery depletion if control buttons are inadvertently pressed.

Using as a Wired Remote Control

When the GyroRemote cannot be used due to the range or positioning of the projector (rear projection, etc.), connect a ø3.5 mm stereo minijack cable (sold separately) from the wired remote control input on the bottom of the remote control to the WIRED REMOTE control input terminal on the rear of the projector.

ø3.5 mm stereo minijack cable (sold separately)

ø2.5–ø3.5 mm wired remote control cable (supplied)
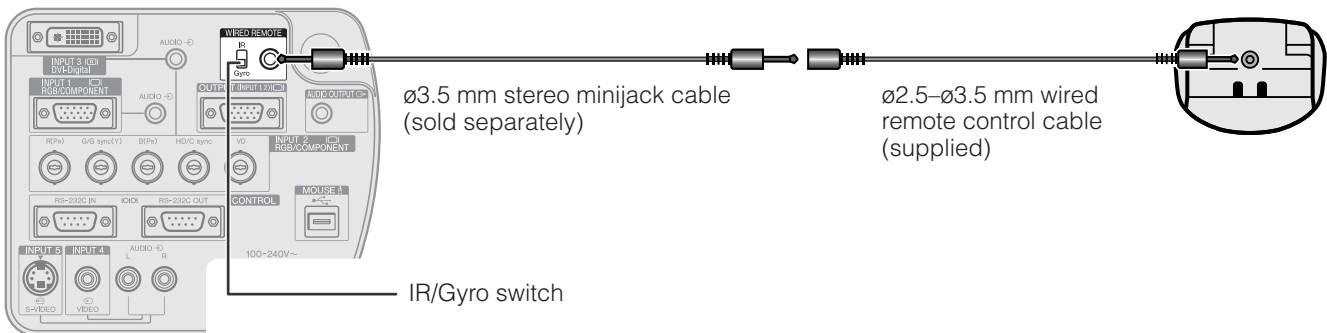
IR/Gyro switch

Using the GyroRemote with a wired remote control cable
Slide the IR/Gyro switch to the **Gyro** position.

> NOTE ►
> • To prevent unwanted transmission of radio signals, GyroRemote turns itself off if detached from the ø2.5–ø3.5 mm wired remote control cable.
> • When the cable is inserted into the projector, the projector will not receive radio signals.

Using the IR remote control as a wired remote
You can use the IR remote control by connecting a ø3.5 mm stereo minijack cable (sold separately) from the wired remote control input on the bottom of the remote control to the WIRED REMOTE control input terminal, a SHARP product.
Slide the IR/Gyro switch to the **IR** position.

> NOTE ►
> • Depending on the IR remote type connected, you may not be able to use certain functions.

Selecting the Input Signal Source

Projector   **GyroRemote**
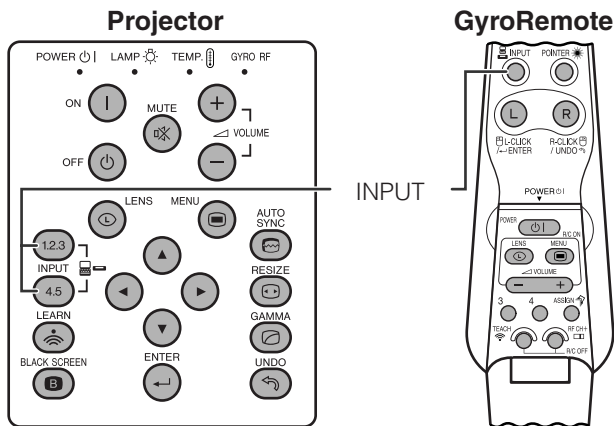
INPUT

Press **INPUT** again to change the mode.

You can use these tools by accessing the "Button Assign" list on your GyroRemote. Choose popup list "5/5". (See page 33 .)

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 1   INPUT 2   INPUT 3
·RGB   ·COMPONENT   DVI
1280 × 1024   720P   1280 × 1024

INPUT 4 Mode   **INPUT 5 Mode**

INPUT 4   INPUT 5
·VIDEO   ·VIDEO
NTSC3.58   NTSC3.58

Adjusting the Volume

Projector   **GyroRemote**
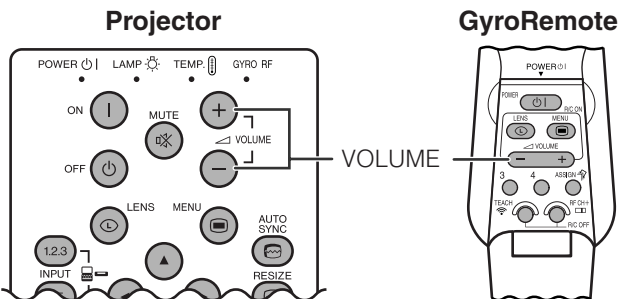
VOLUME

Press **VOLUME** −/+ to adjust the volume.

On-screen Display

VOLUME
30
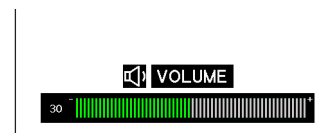
Muting the Sound

Projector
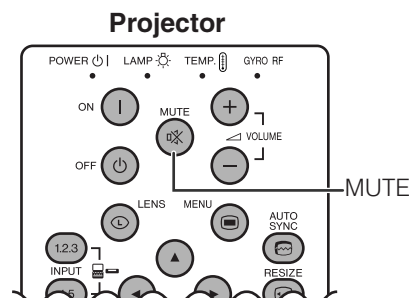
MUTE

Press **MUTE** to temporarily turn off the sound.
Press **MUTE** again to turn the sound back on.

You can use this tool by accessing the "Button Assign" list on your GyroRemote. Choose popup list "2/5" and press **Function (3)**. (See page 33 .)

On-screen Display

MUTE

Operation Buttons

Superimposing a Black Screen

Projector

BLACK SCREEN

Projected Image
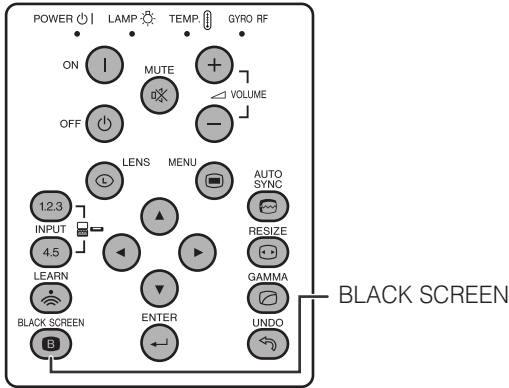
B | BLACK SCREEN

This function can be used to superimpose a black screen over the projected image.

Blacking out the Projected Image

Press **BLACK SCREEN**. The screen turns black and "BLACK SCREEN" is displayed on the screen. To return to the original projected image, press **BLACK SCREEN** again.

You can use this tool by accessing the "Button Assign" list on your GyroRemote. Choose popup list "2/5" and press **Function (1)**. (See page 33 .)
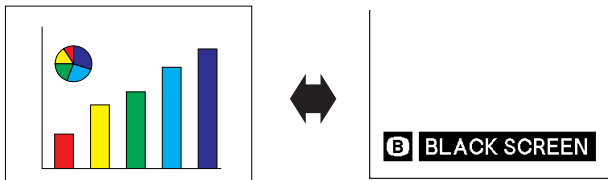
Displaying a Still Image

GyroRemote

Function (2)

ASSIGN Select

Button Assign list

Button Assign   2/5
1 ○ Black Screen   B
2 ○ Freeze
3 ○ Mute
4 ○ Break Timer

On-screen Display

FREEZE
END

This function allows you to instantly freeze a moving image. This is useful when you want to display a still image from a computer or video, giving you more time to explain the image to the audience.
You can also use this function to display a still image from a computer while you make preparations for the next computer images to be presented.

You can only use this tool by accessing the "Button Assign" list on your GyroRemote. Choose popup list "2/5" and press **Function (2)**. (See page 33 .)
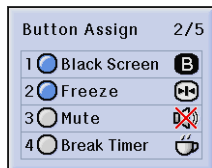
1 Press **Function (2)** to freeze the image.

2 Press **Function (2)** again to return to the moving image.

Magnifying a Specific Portion of an Image

GyroRemote

Function (1)

Function (2)

UNDO

GYRO ACTIVE

ASSIGN Select

Function (3)

GYRO ACTIVE
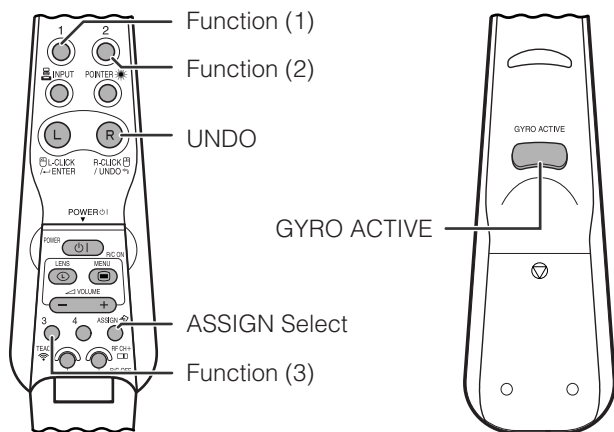
Button Assign list

Button Assign   3/5
1 Enlarge (-)
2 Enlarge (+)
3 Screen Pan
4 Pict in Pict

On-screen Display

×**4**
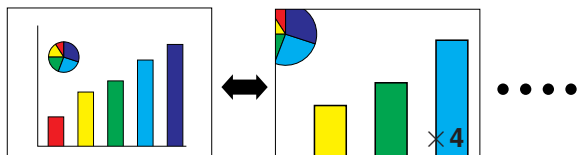
Press **Function (2)** to zoom in.
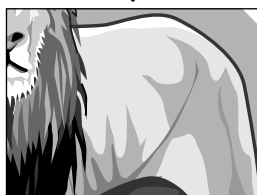
Press **Function (3)**.
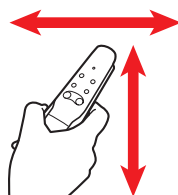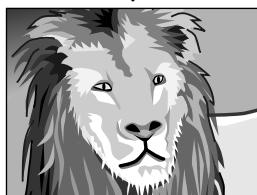
This function allows you to magnify a specific portion of an image. This is useful when you want to display a detailed portion of the image.

You can only use these tools by accessing the "Button Assign" list on your GyroRemote. Choose popup list "3/5" and press **Function (1)** or **(2)**. (See page 33.)

1 Press **Function (2)** to zoom in. (Press **Function (1)** to zoom out.)

$$\times 1 \longleftrightarrow \times 4 \longleftrightarrow \times 9 \longleftrightarrow \times 16 \longleftrightarrow \times 36 \longleftrightarrow \times 64$$

2 To return to ×1, press **UNDO**.

NOTE
• If you press **Function (1)** when the zoom is set to ×1, no change will occur. And if you press **Function (2)** when the zoom is set to ×64, no change will occur.
• If the input signal is changed during digital image magnification, the image will return to ×1. The input signal is changed
  (a) when **INPUT** is pressed,
  (b) when the input signal is interrupted, or
  (c) when the input resolution and refresh rate changes.

Pan Around the Screen
Enlarging the screen image and move it around.

You can use this tool by accessing the "Button Assign" list on your GyroRemote. Choose popup list "3/5" and press **Function (3)**. (See page 33.)

1 When the image is magnified, press and hold down **GYRO ACTIVE**, and then move the unit in the direction of the image which you want to see.

2 To exit from the Screen Pan mode, press **Function (3)**.

NOTE
• The Screen Pan icon remains on the screen for a few seconds after the enlargement setting icon disappears. (The same as when the menu is displayed.)
• Select "Screen Pan" when you want to remove the Screen Pan icon (exiting this mode).
• You can also pan and scan around the image by using ▲/▼/◀/▶ on the projector.

Operation Buttons

E-41

Adjusting the Picture Aspect Ratio

Projector

POWER | LAMP | TEMP. | GYRO RF

ON | MUTE | +
OFF | | VOLUME | −
LENS | MENU | AUTO SYNC
1,2,3 | | RESIZE
INPUT | |
4.5 | | GAMMA
LEARN | |
BLACK SCREEN | ENTER | UNDO

RESIZE

UNDO
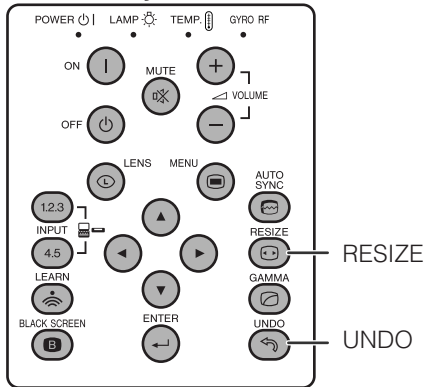
This function allows you to modify or customize the picture display mode to enhance the input image. Depending on the input signal, you can choose NORMAL, FULL, DOT BY DOT, BORDER, STRETCH or SMART STRETCH image.

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

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

You can use this tool by accessing the "Button Assign" list on your GyroRemote. Choose popup list "4/5" and press **Function (3)**. (See page

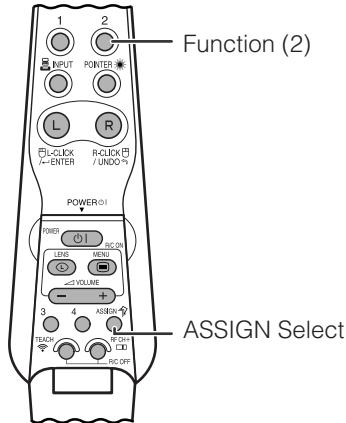Operation Buttons

COMPUTER

EXAMPLE

		NORMAL	FULL	DOT BY DOT
For 4:3 aspect ratio	SVGA (800 × 600)	1024 × 768	–	800 × 600
	XGA (1024 × 768)	1024 × 768	–	–
	SXGA (1280 × 960)	1024 × 768	–	1024 × 768
	UXGA (1600 × 1200)	1024 × 768	–	1024 × 768
For without 4:3 aspect ratio	SXGA (1280 × 1024)	960 × 768	1024 × 768	1024 × 768

VIDEO/DTV

EXAMPLE

		NORMAL	BORDER	STRETCH	SMART STRETCH
For 4:3 aspect ratio	NTSC, SECAM, 480i	1024 × 768	768 × 576	1024 × 576*	1024 × 576*
	PAL, 580i	1024 × 768	768 × 576	1024 × 576*	1024 × 576*
For 16:9 aspect ratio	480P	1024 × 768	768 × 576	1024 × 576*	1024 × 576*
	720P	–	–	1024 × 576*	–
	1080i	–	–	1024 × 576*	–

* The digital image shift function can be used with these picture display modes.

E-42

Gamma Correction Function

Projector

GAMMA

UNDO
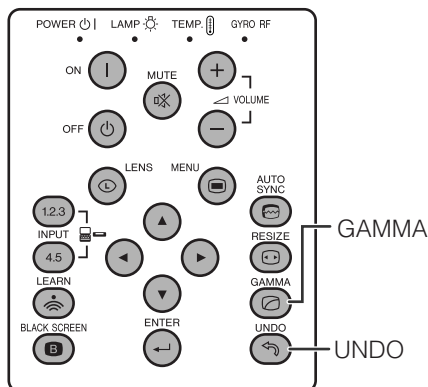
On-screen Display
(Example: RGB mode)

STANDARD
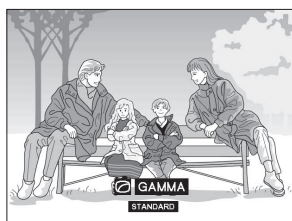
PRESENTATION
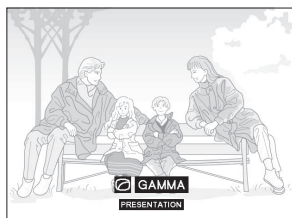
CINEMA
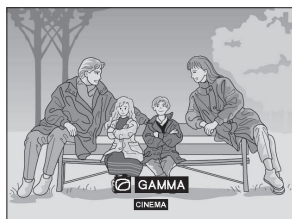
CUSTOM
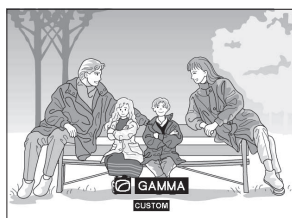
• Gamma is an image quality enhancement function that offers a richer image by brightening the darker portions of the image without altering the brightness of the brighter portions.
• Four gamma settings are available to allow for differences in the images displayed and in the brightness of the room.
• 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.
PRESENTATION	Brightens darker portions of image for more enhanced presentations.
CINEMA	Gives greater depth to darker portions of image for a more exciting theater experience.
CUSTOM	Allows you to adjust gamma value using Sharp Advanced Presentation Software.

1 Press **GAMMA**. Each time **GAMMA** is pressed, the gamma level toggles as shown on the left.

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

You can use this tool by accessing the "Button Assign" list on your GyroRemote. Choose popup list "4/5" and press **Function (1)**. (See page 33).

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 CINEMA 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.
• PRESENTATION settings are the same for both RGB and VIDEO modes.

Basic Operations

This projector has two sets of menu screens that allow you to adjust the image and various projector settings. These menu screens which appear on pages `47` *to* `62` *can be operated from the projector or the GyroRemote with the following procedure.*

Projector

MENU

▲/▼/◄/►

UNDO

ENTER

(GUI) On-screen Display
INPUT 1, 2 (RGB) or 3 (DIGITAL) mode
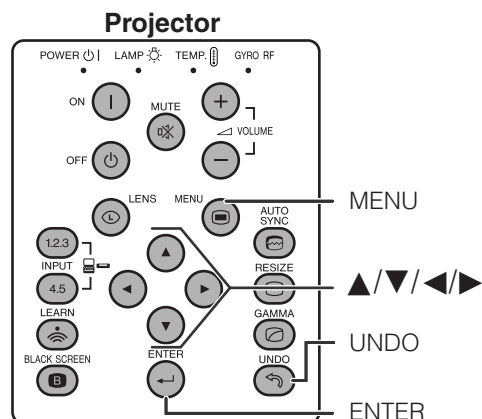
INPUT 4, 5 (VIDEO) mode

For operating the GyroRemote, see page `32`.
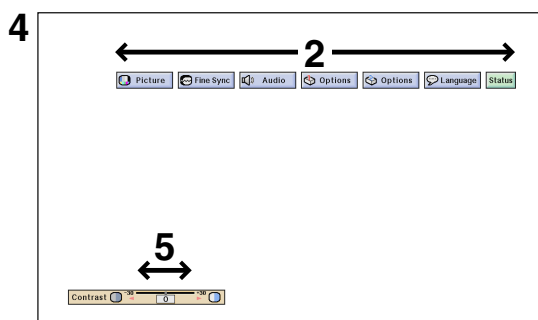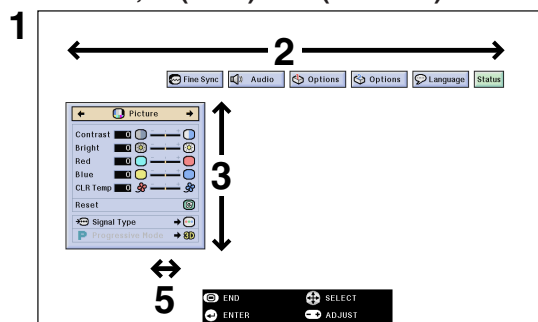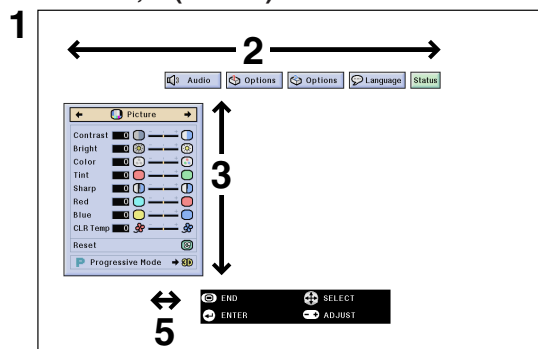
1 Press **MENU** to display the INPUT 1, 2, 3, 4 or 5 mode menu bar.

2 Press ◄/► to select an adjustment 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 from the GUI, press **MENU**.

NOTE
• For details on items on the menu screen, see the tree charts on pages `45` and `46`.

Basic Operation

Items on the INPUT 1, 2 or 3 Mode Menu Bar

Main menu **Sub menu**

Picture	
	Contrast −30 ↔ +30
	Bright −30 ↔ +30
	Color −30 ↔ +30
	Tint −30 ↔ +30
	Sharp −30 ↔ +30
	Red −30 ↔ +30
	Blue −30 ↔ +30
	CLR Temp −3 ↔ +3
	Reset
	Signal Type
	Progressive Mode

	RGB
	Component
	2D Progressive
	3D Progressive
	Film Mode

Fine Sync	
	Clock −150 ↔ +150
	Phase −60 ↔ +60
	H-Pos −150 ↔ +150
	V-Pos −60 ↔ +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	
2	
.	
.	
7	

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

Off
Normal
High Speed

Audio	
	Balance −30 ↔ +30
	Treble −30 ↔ +30
	Bass −30 ↔ +30
	Reset
	Audio Out
	Speaker [ON/OFF]

	FAO
	VAO

Options (1)	
	Pict in Pict [ON/OFF]
	OSD Display
	Background
	Startup Image
	Economy Mode
	MNTR Out/RS232C [ON/OFF]
	Auto Power Off [ON/OFF]

	Normal
	Level A
	Level B

	Sharp
	Custom
	Blue
	None

	Sharp
	Custom
	None

Main menu **Sub menu**

Options (2)	
	Lamp Timer
	PRJ Mode
	Stack Setting
	Keylock Level
	Set Inputs
	RS-232C
	Set ID No.
	Password

	Front
	Ceiling + Front
	Rear
	Ceiling + Rear

	Normal
	Master
	Slave

	Normal
	Level A
	Level B

	Input 1 [ON/OFF]
	Input 2 [ON/OFF]
	Input 3 [ON/OFF]
	Input 4 [ON/OFF]
	Input 5 [ON/OFF]

	9600bps
	38400bps
	115200bps

	ID No.

	Old Password
	New Password
	Reconfirm

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

Status

NOTE

- The resolution, vertical frequency and horizontal frequency figures displayed above are for example purposes only.
- "Color", "Tint", and "Sharp" appear only when Component input is selected in INPUT 1 or 2 mode. For INPUT 3 (DVI), in "Picture" menu, only "CLR Temp" is active and the other menus are displayed in gray. In "Fine Sync" menu, only "Signal Info" is active and the other menus are displayed in gray.
- 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.

Items on the INPUT 4 or 5 Mode Menu Bar

Main menu	Sub menu		
Picture	Contrast	−30 ↔ +30	
	Bright	−30 ↔ +30	
	Color	−30 ↔ +30	
	Tint	−30 ↔ +30	
	Sharp	−30 ↔ +30	
	Red	−30 ↔ +30	
	Blue	−30 ↔ +30	
	CLR Temp	−3 ↔ +3	
	Reset		
	Progressive Mode	2D Progressive	
		3D Progressive	
		Film Mode	
Audio	Balance	−30 ↔ +30	
	Treble	−30 ↔ +30	
	Bass	−30 ↔ +30	
	Reset		
	Audio Out	FAO	
		VAO	
	Speaker	[ON/OFF]	
Options (1)	DNR	[ON/OFF]	
	OSD Display	Normal	
		Level A	
		Level B	
	Video System	Auto	
		PAL (50/60Hz)	
		SECAM	
		NTSC4.43	
		NTSC3.58	
		PAL–M	
		PAL–N	
	Background	Sharp	
		Custom	
		Blue	
		None	
	Startup Image	Sharp	
		Custom	
		None	
	Economy Mode	MNTR Out/RS232C [ON/OFF]	
		Auto Power Off [ON/OFF]	

Main menu	Sub menu		
Options (2)	Lamp Timer		
	PRJ Mode	Front	
		Ceiling + Front	
		Rear	
		Ceiling + Rear	
	Stack Setting	Normal	
		Master	
		Slave	
	Keylock Level	Normal	
		Level A	
		Level B	
	Set Inputs	Input 1	[ON/OFF]
		Input 2	[ON/OFF]
		Input 3	[ON/OFF]
		Input 4	[ON/OFF]
		Input 5	[ON/OFF]
	RS-232C	9600bps	
		38400bps	
		115200bps	
	Set ID No.	ID No.	
	Password	Old Password	
		New Password	
		Reconfirm	
Language	English		
	Deutsch		
	Español		
	Nederlands		
	Français		
	Italiano		
	Svenska		
	Português		
	汉语		
	한국어		
	日本語		
Status			

Basic Operation

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.

Picture | Fine Sync | Audio | Options | Options | Language | Status

You can adjust the projector's picture to your preferences with the following picture settings. See page **44** for the procedure details.

e. g. RGB input in INPUT 1 or 2 mode
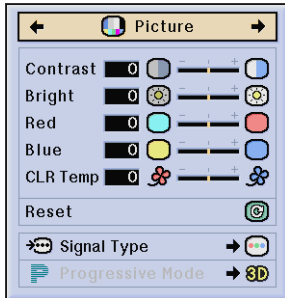
Selected item	◄ button	► button
Contrast	For less contrast	For more contrast
Bright	For less brightness	For more brightness
Color	For less color intensity	For more color intensity
Tint	Skin tones become purplish	Skin tones become greenish
Sharp	For less sharpness	For more sharpness
Red	For weaker red	For stronger red
Blue	For weaker blue	For stronger blue
Reset	All image adjustment items are returned to the factory preset settings.	

NOTE
- "Color", "Tint" and "Sharp" do not appear for RGB input in INPUT 1 or 2 mode.
- 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.
- Depending on the type of signal received, "Sharp" may not be adjustable for COMPONENT input in INPUT 1 or 2 mode.

Adjusting the Color Temperature

This function can be used to adjust the color temperature to suit the type of image input to the projector (video, computer image, TV broadcast, etc.). Decrease the color temperature to create warmer, reddish images for natural flesh tones, or increase to create cooler, bluish images for a brighter picture.
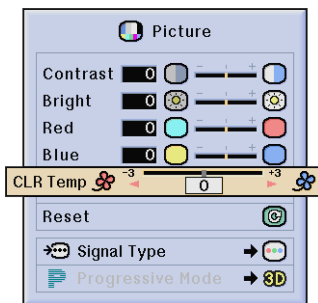
−3 (Red) ◄ button	+3 ► button (Blue)
Decreases color temperature for warmer, reddish, incandescent-like images. (Low color temperature)	Increases color temperature for cooler, bluish, florescent-like images. (High color temperature)

Selecting the Signal Type (RGB menu only)

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

You can use this tool by accessing the "Button Assign" list on your GyroRemote. Choose popup list "4/5" and press **Function (4)**. (See page **33**.)

Basic Operation

| Picture | Audio | Options | Options | Language | Status |
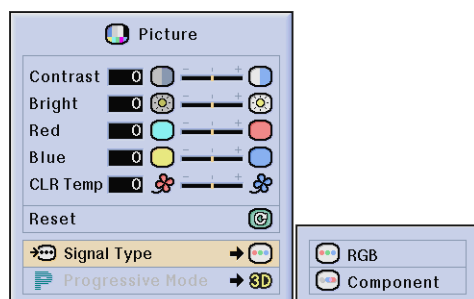
Progressive Mode

This function allows you to select the progressive display of a video signal. The progressive display projects a smoother video image. See page **44** *for the procedure details.*

```
                Picture
Contrast    0
Bright      0
Color       0
Tint        0
Sharp       0
Red         0
Blue        0
CLR Temp    0
Reset
Progressive Mode    → 2D
```

```
2D  2D Progressive
3D  3D Progressive
    Film Mode
```
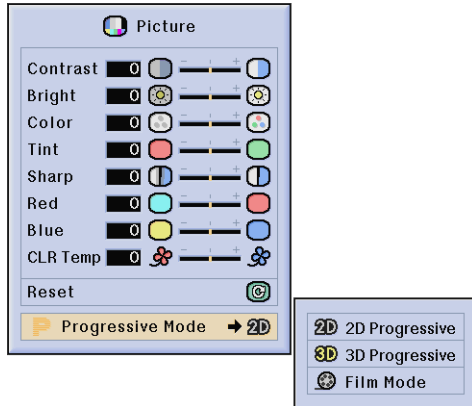
Selects the progressive conversion mode.

2D Progressive
This function is useful to display fast-moving images such as sports and action films. Mode that 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. Mode that 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.

Basic Operation

Adjusting the Computer Images (RGB menu only)

When displaying computer patterns which are very detailed (tiling, vertical stripes, etc.), interference may occur between the LCD 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. See page **44** *for the procedure details.*
Select the desired computer input mode with **INPUT 1** *or* **2**.
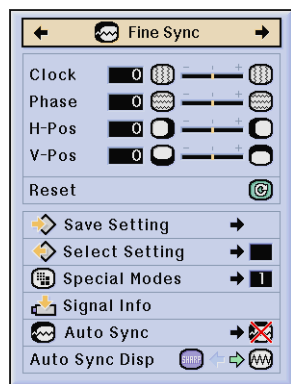
Clock
Adjusts vertical noise.

Phase
Adjusts horizontal noise (similar to tracking on your VCR).

H-Pos
Centers the on-screen image by moving it to the left or right.

V-Pos
Centers the on-screen image by moving it up or down.

NOTE
• Computer image adjustments can be made easily by pressing **AUTO SYNC** ( ). See page **51** for details.
• To reset all adjustment items, select "Reset" on the "Fine Sync" menu screen and press **ENTER**.

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
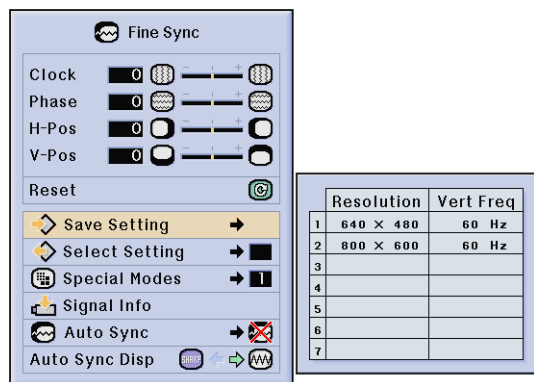
Selecting a saved setting
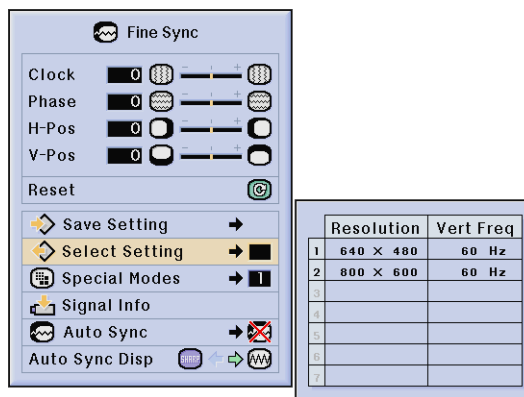
NOTE
• If a memory position has not been set, a resolution and frequency setting will not be displayed.
• When selecting the stored adjustment setting with "Select Setting", the computer system should match the stored setting.

Basic Operation

Picture	Fine Sync	Audio	Options	Options	Language	Status

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. See page **44** *for the procedure details.*

```
          Fine Sync
Clock     0  ▣ —— + ▣
Phase     0  ▨ —————— ▨
H-Pos     0  ○ ——— ○
V-Pos     0  ○ ——— ○
Reset         ©

  ⤷ Save Setting      ➡
  ◇ Select Setting    ➡ ■
  ▤ Special Modes     ➡ ▮
  👍 Signal Info
  ⟳ Auto Sync         ➡ ✖
  Auto Sync Disp  ▨ ← ⤷ ∿
```

	Resolution
1	640 × 480
2	720 × 480
3	480P
4	
5	
6	
7	
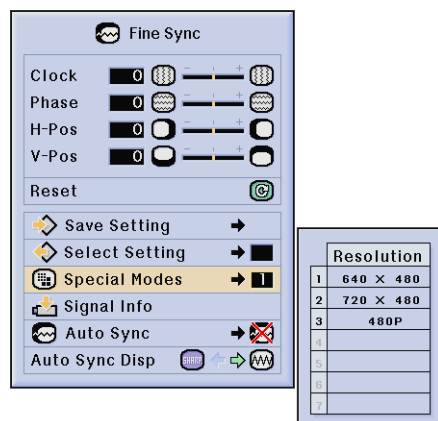
NOTE ▶

- Avoid displaying computer patterns which repeat every other line (horizontal stripes). (Flickering may occur, making the image hard to see.)
- When inputting DTV 480P or 1080i signals, select the corresponding type of signal.

Checking the Input Signal

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

```
          Fine Sync
Clock     0  ▣ —— + ▣
Phase     0  ▨ —————— ▨
H-Pos     0  ○ ——— ○
V-Pos     0  ○ ——— ○
Reset         ©

  ⤷ Save Setting      ➡
  ◇ Select Setting    ➡ ■
  ▤ Special Modes     ➡ ▮
  👍 Signal Info
  ⟳ Auto Sync         ➡ ✖
  Auto Sync Disp  ▨ ← ⤷ ∿
```

Resolution	640 × 480
Hor Freq	31.4 kHz
Vert Freq	60 Hz

Picture | Fine Sync | Audio | Options | Options | Language | Status
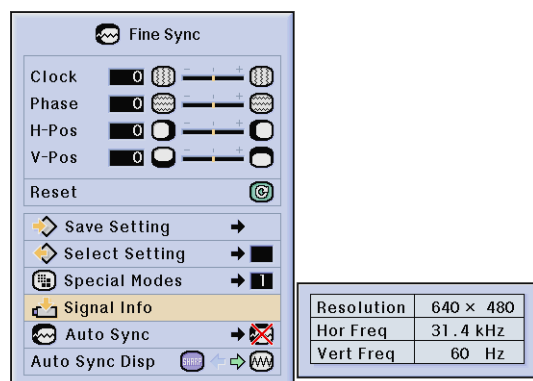
Auto Sync Adjustment
• *Used to automatically adjust a computer image.*
• *Auto Sync adjustment can be made manually by pressing **AUTO SYNC**, or automatically by setting "Auto Sync" to "Normal" or "High Speed" in the projector's GUI menu. See page* 44 *for the procedure details.*

You can use this tool by accessing the "Button Assign" list on your GyroRemote. Choose popup list "4/5" and press **Function (2)**. (See page 33 .)
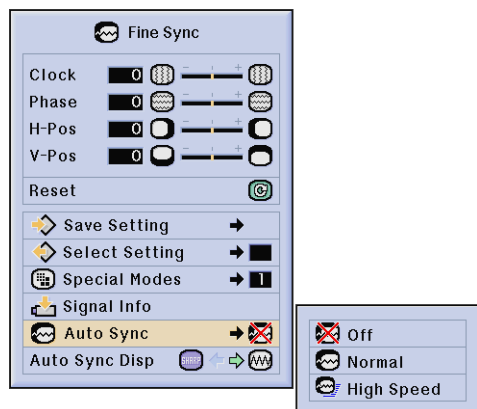
Off
• Synchronized adjustment is not automatically performed.
• Press **AUTO SYNC** to perform manual adjustment.
Normal
• Synchronized adjustment is automatically performed the same as the "High Speed" setting.
• Adjustment using the "Normal" setting takes longer to perform than using the "High Speed" 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.

NOTE
• Automatic adjustments can be made by pressing **AUTO SYNC**.
• 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.
• Auto Sync adjustment may take some time to complete, depending on the image of the computer connected to the projector.
• When the optimum image cannot be achieved with Auto Sync adjustment, use manual adjustments. (See page 49 .)

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.

Basic Operation

Adjusting the Sound

| Picture | Fine Sync | Audio | Options | Options | Language | Status |
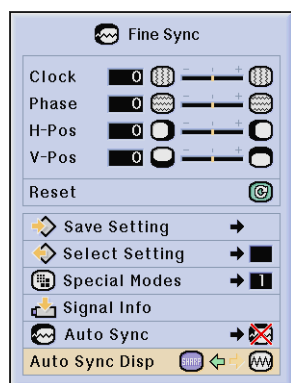
This projector's audio is factory preset to standard settings. However, you can adjust it to suit your own preferences by adjusting the following audio settings. See page **44** *for the procedure details.*
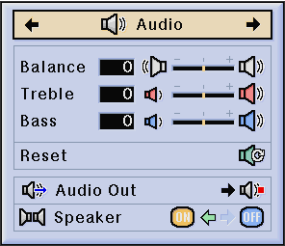
Selected item	◄ button	► button
Balance	Increased audio from the left speaker	Increased audio from the right speaker
Treble	For weaker treble	For stronger treble
Bass	For weaker bass	For stronger bass
Reset	All audio adjustment items are returned to the factory preset settings.	

NOTE
• To reset all adjustment items, select "Reset" on the "Audio" menu screen and press **ENTER**.

Audio Out
FAO (Fixed audio output): Audio output that does not vary in strength with the volume level of the source projector.
VAO (Variable audio output): Audio output that varies in strength with the volume level of the source projector.

Speaker
Switching the built-in speakers on the projector ON/OFF.

Basic Operation

Displaying Dual Pictures (RGB menu only)

| Picture | Fine Sync | Audio | Options | Options | Language | Status |
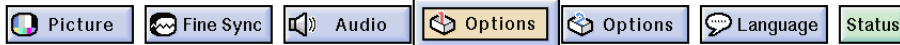
Picture in Picture function allows you to display two pictures on the same screen. You can display the image input from INPUT 4 or 5 as an inset picture overlapping the main picture input from INPUT 1, 2 or 3. See page **44** *for the procedure details.*

You can use this tool by accessing the "Button Assign" list on your GyroRemote. Choose popup list "3/5" and press **Function (4)**. (See page **33**)

Options
Pict in Pict
OSD Display
Background
Startup Image
Economy Mode
MNTR Out/RS232C
Auto Power Off
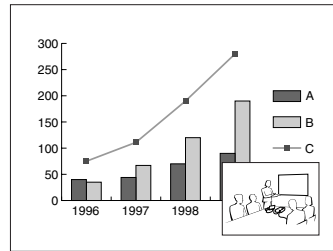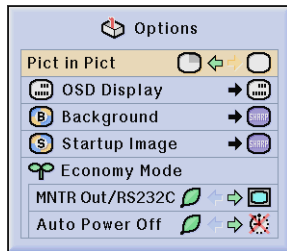
1 Press ◄ to select "🖻" to display an inset picture (Factory preset to INPUT 4).

2 Press ◄/►/▲/▼ to move the inset picture to one of four preset positions.

NOTE ▶
- The image from INPUT 1, 2 or 3 is displayed as the main picture and the image from INPUT 4 or 5 is displayed as the inset picture.
- The last displayed image from INPUT 4 or 5 is displayed as the inset picture.
  For example, when you want to display the image from INPUT 4 as the inset picture, select INPUT 4, then select the main picture, and then select "Pict in Pict".
- Inset picture can only be displayed in video signal of NTSC/PAL/SECAM.
- When selecting the image for the inset picture, only the images being input will be displayed.
- The audio of the inset picture will come out of the projector's speakers.
- Picture in Picture does not work in case of the following RGB signals.
       UXGA signal image/Interlaced signal/DTV (480P/720P/1080i)
- You can only use the following functions while in Picture in Picture mode.
       FREEZE: Works for the inset picture only.

Reducing Image Noise (VIDEO menu only)

| Picture | Audio | Options | Options | Language | Status |

Digital Noise Reduction (DNR) provides high quality images with minimal dot crawl and cross color noise. See page **44** *for the procedure details.*

Options
DNR
OSD Display
Video System
Background
Startup Image
Economy Mode
MNTR Out/RS232C
Auto Power Off
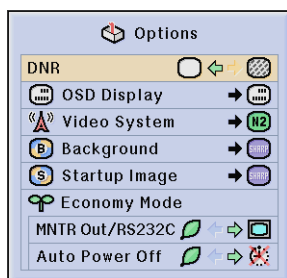
NOTE ▶
- If the image is clear, select "▦" to prevent any blurring.

Turning On/Off the On-screen Display

| Picture | Fine Sync | Audio | Options | Options | Language | Status |
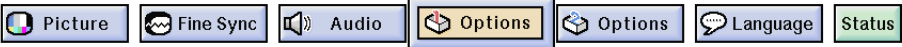
This function allows you to turn on or off the on-screen messages that appear during input select. See page **44** *for the procedure details.*
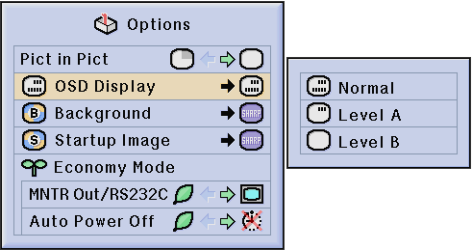
Selected item	Description
Normal	All On-screen Display are displayed.
Level A	Input/Custom/Freeze/Enlarge/Auto sync/Volume/Mute/Black screen functions are not displayed.
Level B	All On-screen Display are not displayed (except Menu/Button assign list/Lens functions and warning display (Power off/Temp./Lamp function etc.)).

Setting the Video Signal (VIDEO menu only)

| Picture | Audio | Options | Options | Language | Status |

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. See page **44** *for the procedure details.*
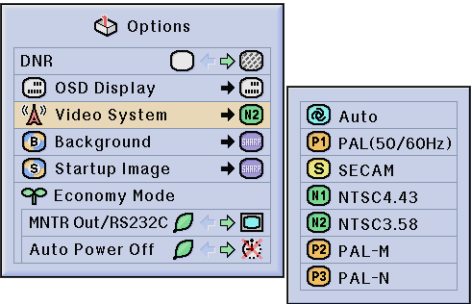
NOTE
- When the system mode is set to "Auto", you may not receive a clear picture due to signal differences. Should this occur, switch to the video system of the source signal.
- AUTO cannot be set for PAL-M and PAL-N input signals. Select "PAL-M" or "PAL-N" in "Video System" menu for PAL-M and PAL-N input signals.

Basic Operation

E-54

Selecting a Background Image

| Picture | Fine Sync | Audio | **Options** | Options | Language | Status |
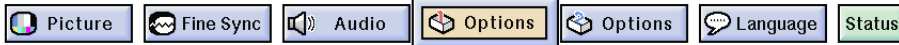
This function allows you to select the image displayed when no signal is being sent to the projector. See page **44** *for the procedure details.*
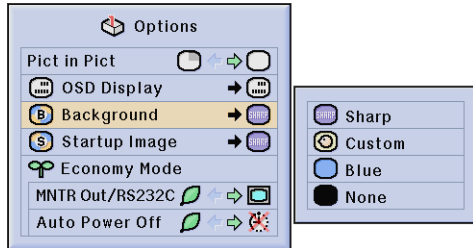
Options
Pict in Pict
OSD Display
Background
Startup Image
Economy Mode
MNTR Out/RS232C
Auto Power Off

Sharp
Custom
Blue
None

Selected item	Description
Sharp	SHARP default image
Custom	User customized image (i.e. company logo)
Blue	Blue screen
None	Black screen

NOTE
• By selecting "Custom", the projector can display a custom image (i.e. your company logo) as the background image. The custom image must be a 256-color BMP file with a picture size no larger than 1,024 × 768 pixels. Please see the Sharp Advanced Presentation Software operation manual for how to save (or change) a custom image.

Selecting a Startup Image

| Picture | Fine Sync | Audio | **Options** | Options | Language | Status |
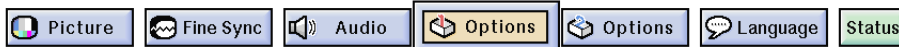
This function allows you to specify the image to be displayed upon the projector's startup.
A custom image (i.e. your company logo) can be uploaded to the projector via an RS-232C cable. See page **16** *in this operation manual, and also the supplied Sharp Advanced Presentation Software operation manual for detailed instructions. See page* **44** *for the procedure details.*
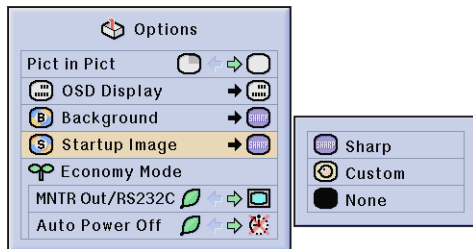
Options
Pict in Pict
OSD Display
Background
Startup Image
Economy Mode
MNTR Out/RS232C
Auto Power Off

Sharp
Custom
None

Selected item	Description
Sharp	SHARP default image
Custom	User customized image (i.e. company logo)
None	Black screen

NOTE
• By selecting "Custom", the projector can display a custom image (i.e. your company logo) as the startup image. The custom image must be a 256-color BMP file with a picture size no larger than 1,024 × 768 pixels. Please see the Sharp Advanced Presentation Software operation manual for how to save (or change) a custom image.

Selecting the Economy Mode
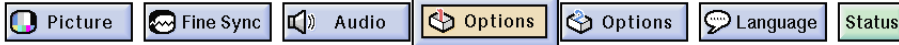
These functions allow you to reduce the power consumption when the projector is in standby mode. See page **44** *for the procedure details.*

Monitor Out/RS-232C Off Function

This projector consumes power when using a monitor connected to the OUTPUT port for INPUT 1, 2 and a computer connected to the RS-232C port. When not using these ports, "MNTR Out/RS232C" can be set to "🍃" to reduce standby power consumption.
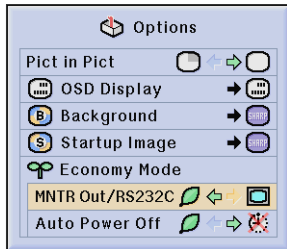
🍃	Standby power for Monitor Out/RS-232C connection turned off.
🖥	Monitor Out/RS-232C on

⚠️ **CAUTION**
• Set "MNTR Out/RS232C" to "🖥" when using the Sharp Advanced Presentation Software (supplied).

Automatic Power Shutoff Function

When no input signal is detected for more than 15 minutes, the projector will automatically shut off. The on-screen message, "Power OFF in 5 min." will appear five minutes before the power is automatically turned off.
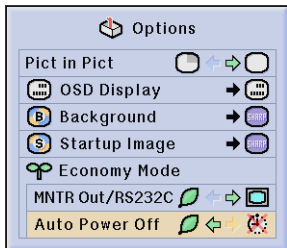
🍃	Power automatically shuts off after 15 minutes of no signal input.
🕒	Automatic Power Shutoff disabled.

NOTE
• "MNTR Out/RS232C" is factory preset to "🖥", and "Auto Power Off" is factory preset to "🍃".

Basic Operation

Confirming the Lamp Usage Time

| Picture | Fine Sync | Audio | Options | **Options** | Language | Status |

This function allows you to check the accumulated lamp usage time. See page **44** *for the procedure details.*

```
←          Options          →
⏲ Lamp Timer          24  h
📟 PRJ Mode          →📟
📟 Stack Setting      →📟
🔒 Keylock Level      →🔒
↩ Set Inputs          →
🔲 RS-232C       →  9600  bps
888 Set ID No.        → 001
🔑 Password            →
```
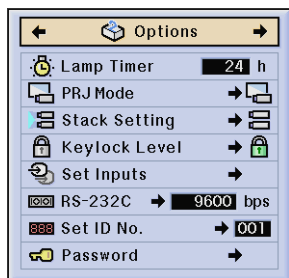
NOTE ►
• It is recommended that the lamp be replaced after approximately 1,000 cumulative hours of use. See pages **68** and **69** for lamp replacement.

Reversing/Inverting Projected Images

| Picture | Fine Sync | Audio | Options | **Options** | Language | Status |

This projector is equipped with a reverse/invert image function which allows you to reverse or invert the projected image for various applications. See page **44** *for the procedure details.*

```
          Options
⏲ Lamp Timer          24  h
📟 PRJ Mode          →📟        📟 Front
📟 Stack Setting      →📟        📟 Ceiling+Front
🔒 Keylock Level      →🔒        📟 Rear
↩ Set Inputs          →         📟 Ceiling+Rear
🔲 RS-232C       →  9600  bps
888 Set ID No.        → 001
🔑 Password            →
```
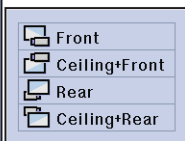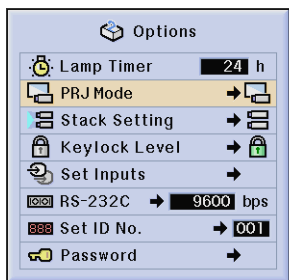
Selected item	Description
Front	Normal image
Ceiling + **Front**	Inverted image
Rear	Reversed image
Ceiling + **Rear**	Reversed and inverted image

NOTE ►
• This function is used for the reversed image and ceiling-mount setups. See page **29** for these setups.

Basic Operation

Setting the Stacking Mode

| Picture | Fine Sync | Audio | Options | Options | Language | Status |

You can double the brightness of an image by stacking two projectors and projecting same picture simultaneously. To control two projectors, assign one as the master and one as the slave. The slave projector will duplicate any operational settings made to the master projector. See page **44** *for the procedure details.*

Options
- Lamp Timer   24 h
- PRJ Mode
- Stack Setting
- Keylock Level
- Set Inputs
- RS-232C   9600 bps
- Set ID No.   001
- Password

- Normal
- Master
- Slave
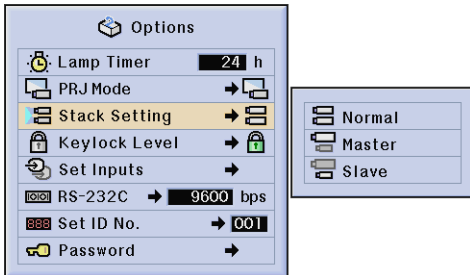
NOTE
- When the projector is set to "Master", button operation signals will be transmitted through RS-232C.
- When the projector is set to "Slave", operations follow the button operations sent from the "Master".
- When set to slave, all buttons on the projector along with **ENTER**, **UNDO**, **POWER**, **LENS** and **MENU** on the GyroRemote can be used. The slave cannot operate the other buttons on GyroRemote.
- For details on intended purpose, see pages **65** and **66**.

Locking the Operation Buttons on the Projector

| Picture | Fine Sync | Audio | Options | Options | Language | Status |
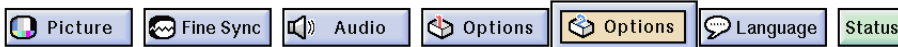
This function can be used to lock the use of certain operation buttons on the projector. The user can still operate the projector fully with the GyroRemote. See page **44** *for the procedure details.*

Options
- Lamp Timer   24 h
- PRJ Mode
- Stack Setting
- Keylock Level
- Set Inputs
- RS-232C   9600 bps
- Set ID No.   001
- Password

- Normal
- Level A
- Level B
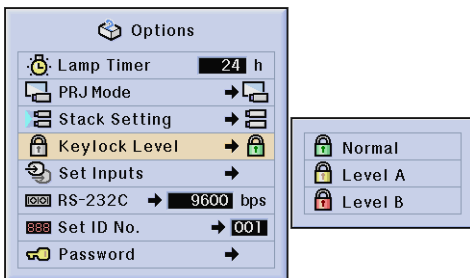
Selected item	Description
Normal	All operation buttons are functional.
Level A	Only Input/Volume/Mute functions on the projector are available.
Level B	All operation buttons on the projector are unavailable.

NOTE
- To cancel the Keylock Level, perform the above procedure using the GyroRemote.
- See page **61** for details using the password function.

Deselecting Inputs

This function allows you to deselect unwanted signal input. See page **44** *for the procedure details.*

```
Options
  Lamp Timer        24  h
  PRJ Mode          →
  Stack Setting     →
  Keylock Level     →
  Set Inputs        →          Input1
  RS-232C    →  9600  bps      Input2
  Set ID No.    →  001         Input3
  Password      →              Input4
                               Input5
```
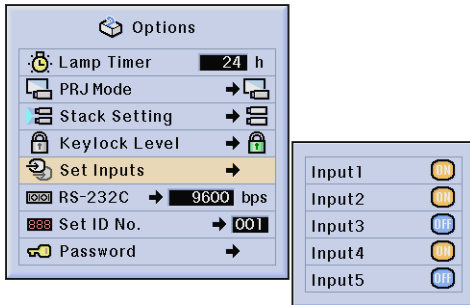
NOTE
• When stack projecting, multi-screen projecting and so on, this function can be used to cancel the RS-232C control.
• Up to two input signals can be blocked for both Input 1, 2, 3 or Input 4, 5.
• For details on intended purpose, see pages **65** and **66**.

Selecting the Transmission Speed (RS-232C)

This menu allows you to adjust the transmission speed of the RS-232C connection by selecting the baud rate. See page **44** *for the procedure details.*

```
Options
  Lamp Timer        25  h
  PRJ Mode          →
  Stack Setting     →
  Keylock Level     →
  Set Inputs        →
  RS-232C    →  9600  bps         9600   bps
  Set ID No.    →  001           38400   bps
  Password      →               115200   bps
```
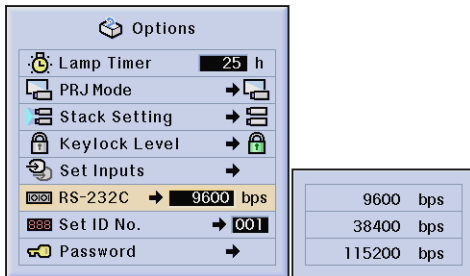
NOTE
• Make sure that both the projector and computer are set for the same baud rate. Refer to the computer's operation manual for instructions for setting the baud rate.

Basic Operation

Controling Multiple Projectors with ID Numbers

This projector can form a network of up to 250 projectors. To identify separately and control specified projector, you need to set ID No.. The ID No. is factory preset to "001". See page **44** *for the procedure details.*

Setting the ID No.

Options	
Lamp Timer	25 h
PRJ Mode	→
Stack Setting	→
Keylock Level	→
Set Inputs	→
RS-232C	→ 9600 bps
Set ID No.	→ 001
Password	→

ID No.	0 0 1
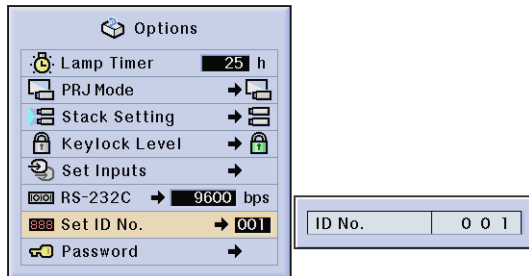
Press ▶ to select the first digit and ▲/▼ to select the desired number. Continue this procedure for the remaining two digits.

NOTE

• Be sure to set the ID No. in the Option menu and attach a corresponding number seal to the projector.
• The ID No. can be set from 001 to 250.
• For details on intended purpose, see pages **63** to **66** .

Basic Operation

Protecting Important Settings with a Password

*A password can be set by the user and used with the keylock level to prevent adjustments to certain settings on the GUI. See page **44** for the procedure details.*

NOTE
• When password is set, you need to enter the password to use "PRJ Mode", "Stack Setting", "Keylock Level", "Set Inputs", "RS-232C" and "Set ID No." menus.

Setting the Password

Options	
Lamp Timer	25 h
PRJ Mode	→
Stack Setting	→
Keylock Level	→
Set Inputs	→
RS-232C	→ 9600 bps
Set ID No.	→ 001
Password	→

Old Password	– – – –
New Password	■ – – –
Reconfirm	– – – –

Options	
Lamp Timer	25 h
PRJ Mode	→
Stack Setting	→
Keylock Level	→
Set Inputs	→
RS-232C	→ 9600 bps
Set ID No.	→ 001
Password	→

Old Password	– – – –
New Password	✱ ✱ ✱ ✱
Reconfirm	■ – – –
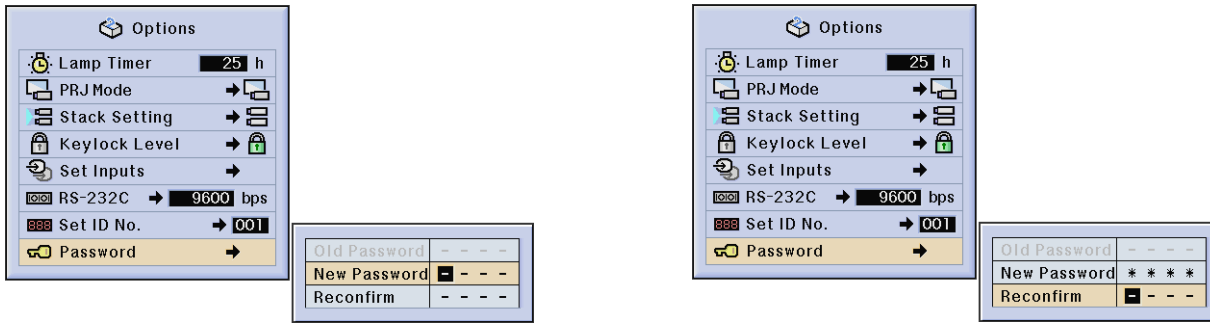
1 Enter the new password using ▲/▼ to select the desired number, and then press ▶ to select the next digit. Continue this procedure for the remaining three digits, and then press **ENTER**.

2 Enter the password again ("Reconfirm") using ▲/▼/◀/▶, and then press **ENTER**.

NOTE
• After setting the password, be sure to write it down in a secure location in case you can not remember it.

Changing the Password

Options	
Lamp Timer	25 h
PRJ Mode	→
Stack Setting	→
Keylock Level	→
Set Inputs	→
RS-232C	→ 9600 bps
Set ID No.	→ 001
Password	→

Old Password	■ – – –
New Password	– – – –
Reconfirm	– – – –
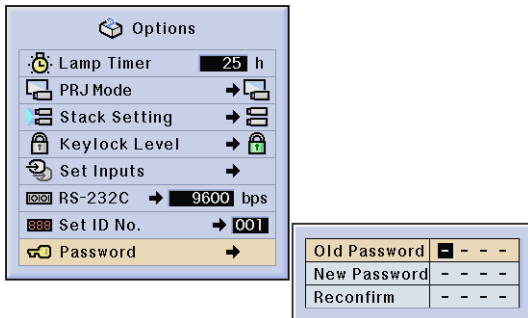
1 Enter the old password using ▲/▼/◀/▶, and then press **ENTER**.

2 Enter the new password using ▲/▼/◀/▶, and then press **ENTER**.

3 Enter the password again ("Reconfirm") using ▲/▼/◀/▶, and then press **ENTER**.

Basic Operation

Selecting the On-screen Display Language

Picture	Fine Sync	Audio	Options	Options	Language	Status

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. See page **44** *for the procedure details.*

◄ Language ►

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

Displaying the Adjustment Settings

Picture	Fine Sync	Audio	Options	Options	Language	Status

This function can be used to display all the adjusted settings on the screen simultaneously. See page **44** *for the procedure details.*

INPUT 1, 2 (RGB) or 3 (DIGITAL) mode

Picture	Fine Sync	Audio	Options	Options	
0 Contrast	0 Clock	0 Balance	Pict in Pict	8h Lamp Timer	English Language
0 Bright	0 Phase	0 Treble	OSD Display	PRJ Mode	
0 Red	0 H-Pos	0 Bass	Background	Stack Setting	
0 Blue	0 V-Pos	Audio Out	Startup Image	Keylock Level	Standard Gamma
0 CLR Temp	Select Setting	Speaker	MNTR Out/RS232C	1,2, ,4, Set Inputs	Normal Resize
Signal Type	1 Special Modes		Auto Power Off	9600bps RS-232C	
Progressive Mode	Auto Sync			001 Set ID No.	
	Auto Sync Disp			Password	

INPUT 4, 5 (VIDEO) mode

Picture	Audio	Options	Options	
0 Contrast	0 Balance	DNR	25h Lamp Timer	English Language
0 Bright	0 Treble	OSD Display	PRJ Mode	
0 Color	0 Bass	Video System	Stack Setting	
0 Tint	Audio Out	Background	Keylock Level	Standard Gamma
0 Sharp	Speaker	Startup Image	1,2, ,4, Set Inputs	Normal Resize
0 Red		MNTR Out/RS232C	9600bps RS-232C	
0 Blue		Auto Power Off	001 Set ID No.	
0 CLR Temp			Password	
Progressive Mode				

This projector has outstanding network capability.
- Internet access for self-diagnosis
- Multiple and group projector control
- Simultaneous multiple projector control

Internet access for self-diagnosis, status information and preventive maintenance

LAN

E-mail   **E-mail**

Internet

LAN   **LAN**

Multiple Function
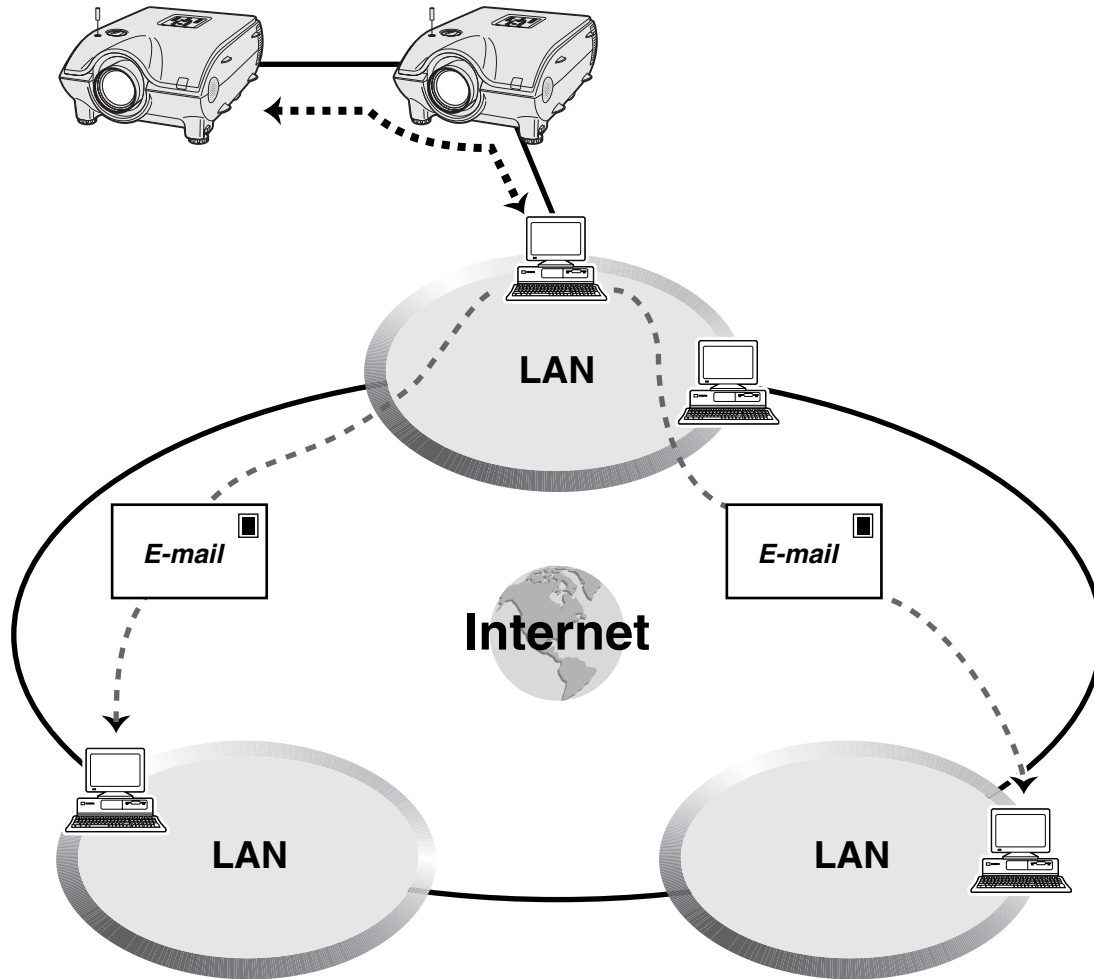
This projector can be used in a network of up to 250 projectors managed from a single PC with the accompanied Sharp Advanced Presentation Software—Professional Edition. This projector can be connected to a PC using an RS-232C connection. Output terminals are provided (RS-232C on the projector) enabling a daisy chain configuration and eliminating the need for a distributor.

This projector is also equipped with a function to send status information (lamp usage time, etc.) to a Sharp Service Center or outside contractor for quick and efficient customer service.

NOTE
- For more information on these features, see the operation manuals accompanying the Sharp Advanced Presentation Software—Professional Edition and optional boards.

Multiple and group projector control via computer

RS-232C ⟶   **Building**

RS-232C ↓   **3rd Floor**

Control PC
Sharp Advanced
Presentation Software
"Professional Edition"

RS-232C ↓   **2nd Floor**

                                                                 1st Floor

Video Source 1

Video Source 2

This projector can be used in a network of projectors managed from a single PC with the accompanied Sharp Advanced Presentation Software—Professional Edition. Projectors in conference rooms on the first and third floors of a building, for example, can be used for video presentations, while projectors on the second floor can be used for PC-assisted presentations. Projectors can even be powered down at different times (e.g., projectors on the first and second floors are powered down in one hour, while those on the third floor are powered down in two hours).

NOTE ▶
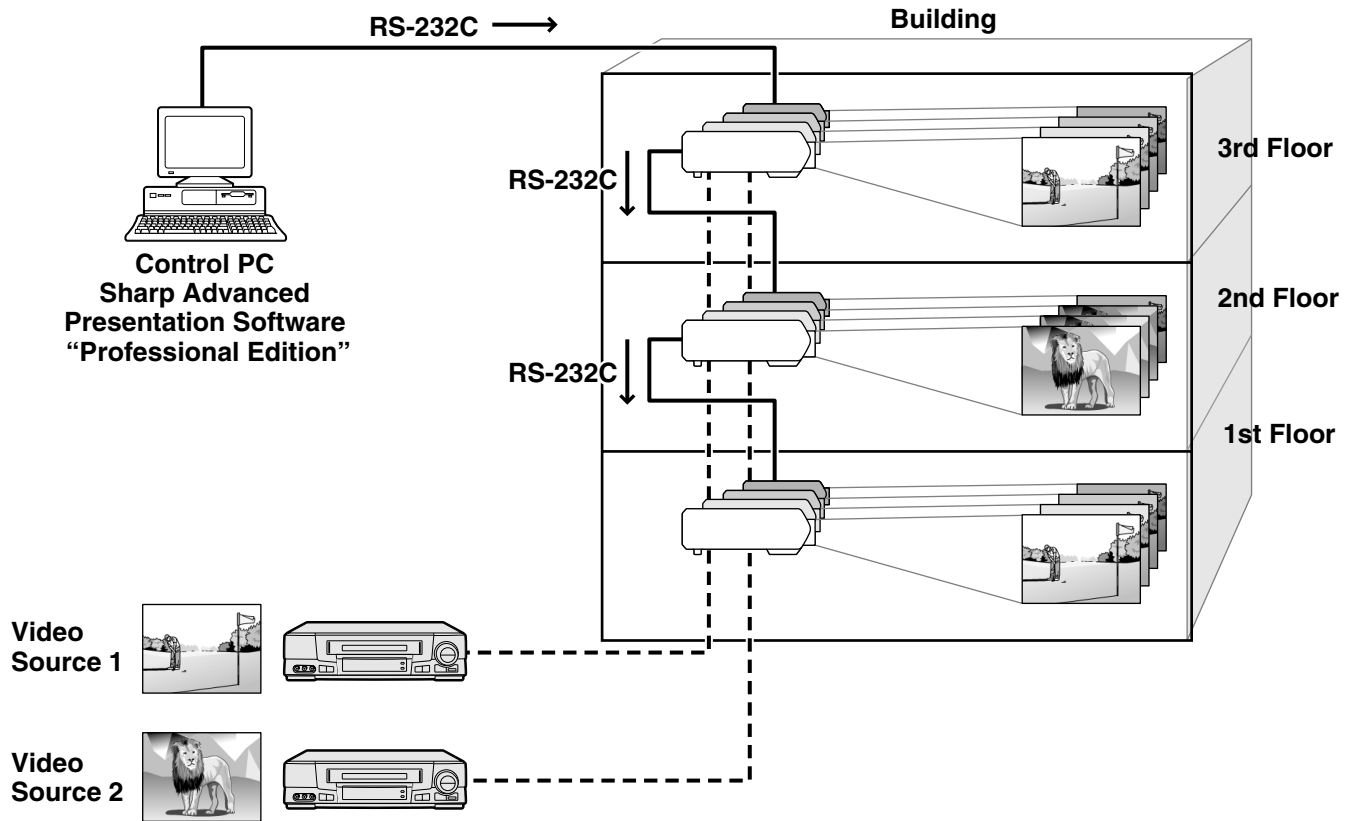- For more information on these features, see the operation manuals accompanying the Sharp Advanced Presentation Software— Professional Edition.
- Transmission performance of the RS-232C cable can vary depending on the surrounding conditions. Use the transmission repeater if performance is not up to par.
- We recommend you use an RS-232C cable not longer than 49′ 3″ (15 m).

Multiple Function

Simultaneous multiple projector control for stacking and videowall projection

Stack Projection

Multiple Function
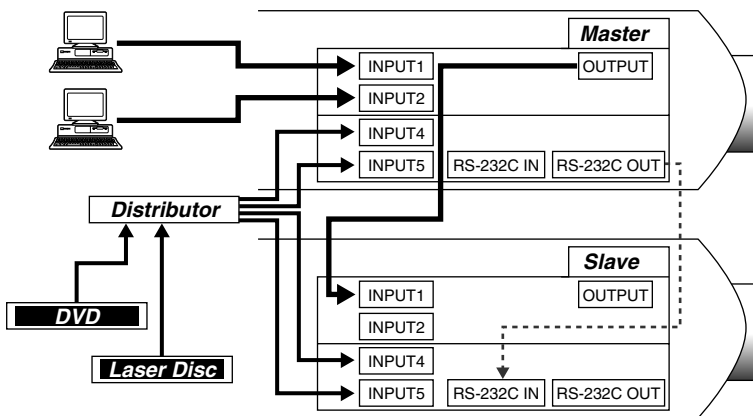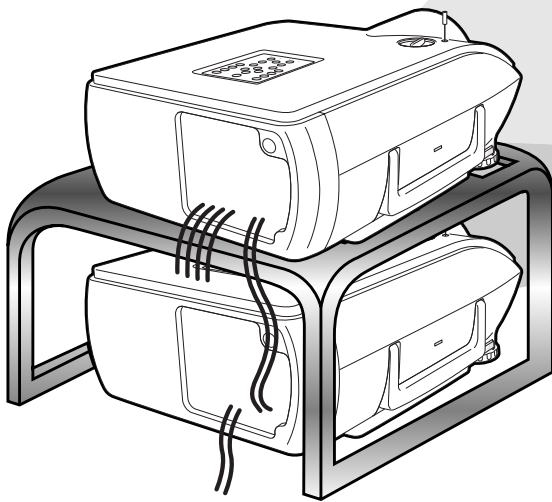
Stack Setting
Master

Set Inputs	
INPUT1	Yes
INPUT2	Yes
INPUT3	**No**
INPUT4	Yes
INPUT5	Yes

Stack Setting
Slave

Set Inputs	
INPUT1	Yes
INPUT2	**No**
INPUT3	**No**
INPUT4	Yes
INPUT5	Yes

For brighter images, two projectors can be stacked using the Stack Setting function, with one projector set as the Master and the other as the Slave. The operations of the Slave projector are controlled by the Master projector during projection through an RS-232C connection. The RS-232C cable (null modem, cross type, sold separately) is connected from the RS-232C output on the Master projector to the RS-232C input on the Slave projector.

Projectors can be stacked using an RS-232C cable (null modem, cross type, sold separately).

NOTE

Videowall

Master	
Set Inputs	
INPUT1	Yes
INPUT2	Yes
INPUT3	**No**
INPUT4	Yes
INPUT5	Yes

Slave	
Set Inputs	
INPUT1	Yes
INPUT2	**No**
INPUT3	**No**
INPUT4	Yes
INPUT5	**No**
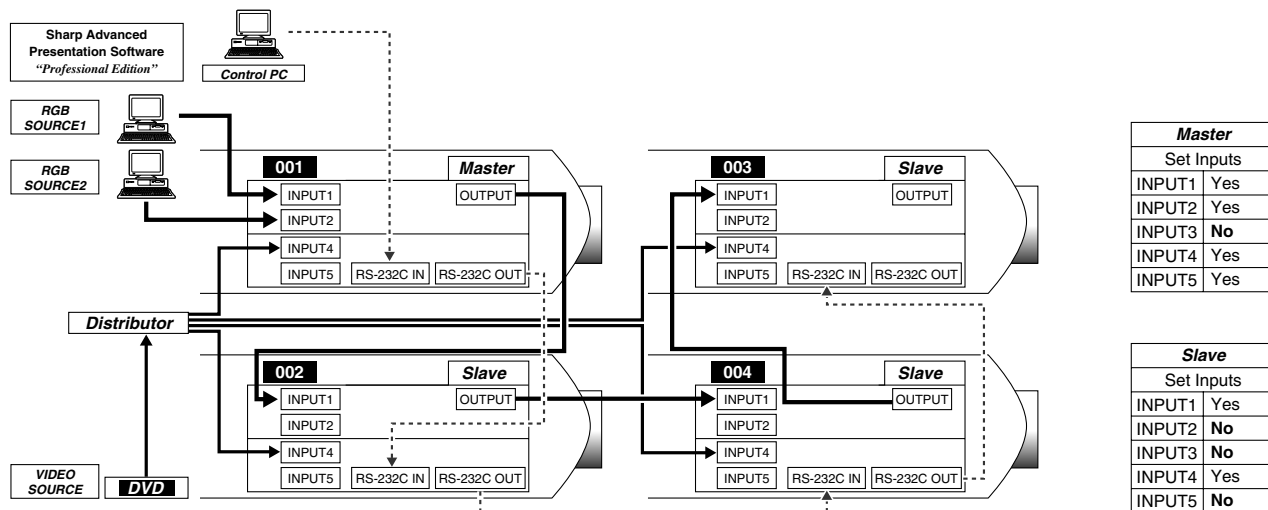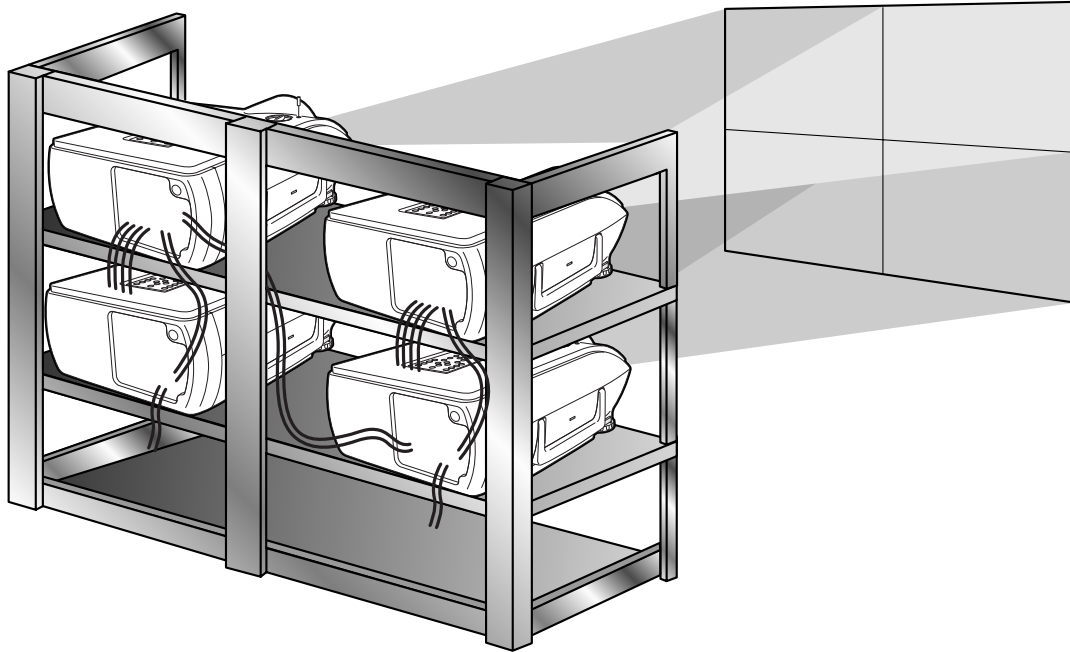
This projector can be used together with other projectors managed using the accompanied Sharp Advanced Presentation Software—Professional Edition to create a videowall projection. Whereas conventional videowall technology required the use of an image distributor, this projector videowall feature enables easy image settings from a PC when inputting a single video source. This function greatly simplifies videowall setup.

RS-232C OUTPUTS also realize the simple daisy chain connection. The master projector directly connected to the computer can make the daisy chain connection with multiple slave projectors. For details on setting master or slave, see page **58**.

- Use a videowall projector stand, sold separately, when using this function.
- Image quality may deteriorate when picture signals are input through multiple projectors in a daisy chain connection.

NOTE
- For more information on this feature, see the operation manuals accompanying the Sharp Advanced Presentation Software—Professional Edition.
- When UXGA signal is displayed, the videowall can not be set by Sharp Advanced Presentation Software—Professional Edition.

Multiple Function

Maintenance Indicators
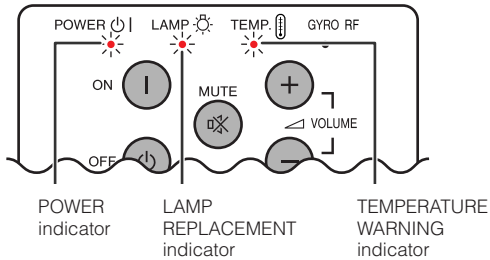
- The warning lights on the projector indicate problems inside the projector.
- There are two warning lights: a TEMPERATURE WARNING indicator which warns that the projector is too hot, and a LAMP REPLACEMENT indicator which lets you know when to change the lamp.
- If a problem occurs, either the TEMPERATURE 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.	• Replace the filter. (See page **70**.)
		• Cooling fan breakdown. • Internal circuit failure.	• Take the projector to your nearest Authorized Sharp Industrial LCD Products Dealer or Service Center for repair.
LAMP REPLACE-MENT indicator	The lamp does not light up.	• Burnt-out lamp. • Lamp circuit failure.	• Carefully replace the lamp. (See pages **68** and **69**.) • Take the projector to your nearest Authorized Sharp Industrial LCD Products Dealer or Service Center for repair.
POWER indicator	The POWER indicator flashes in red when the projector is on.	• The filter cover is open.	• Securely install the filter cover.

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, as during a brief rest, the LAMP REPLACEMENT indicator may be triggered, preventing the power from going on. Should this occur, take the power cord out of the wall outlet and put it back in again.

Lamp

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

⚠ **CAUTION**
- Intense light hazard. Do not attempt to look into the aperture and lens while the projector is operating.

Maintenance & Troubleshooting

⊕ **Replacing the Lamp**

> ⚠ **CAUTION**
> • **Potential hazard of glass particles if lamp ruptures. In case of lamp rupture, contact your nearest Authorized Sharp Industrial LCD Products Dealer or Service Center for a 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 before removing the lamp cage.**

It is recommended that the lamp be replaced after approximately 1,000 cumulative hours of use or when you notice a significant deterioration of the picture and color quality. Carefully change the lamp by following the steps below.

If the new lamp does not light after replacement, take your projector to the nearest Authorized Sharp Industrial LCD Products Dealer or Service Center for repair. Purchase a replacement lamp unit (lamp/cage module) of the current type BQC-XGP20X//1 from your nearest Authorized Sharp Industrial LCD Products Dealer or Service Center. Then carefully change the lamp by following the instructions below. If you wish, you may have the lamp replaced at your nearest Authorized Sharp Industrial LCD Products Dealer or Service Center.

> **IMPORTANT NOTE TO U.S. CUSTOMERS:**
> The lamp included with this projector is backed by a 90-day parts and labor limited warranty. All service of this projector under warranty, including lamp replacement, must be obtained through an Authorized Sharp Industrial LCD Products Dealer or Service Center. For the name of the nearest Authorized Sharp Industrial LCD Products Dealer or Service Center, please call toll-free: 1-888-GO-SHARP (1-888-467-4277). | U.S.A. ONLY |
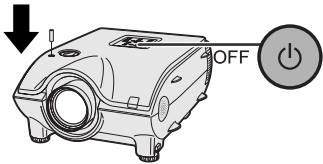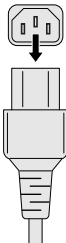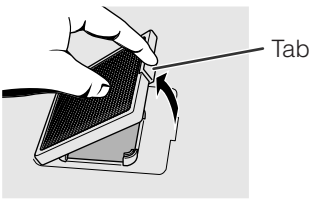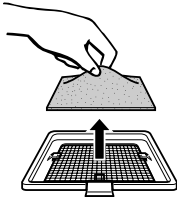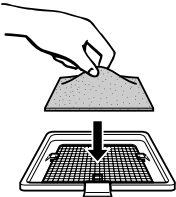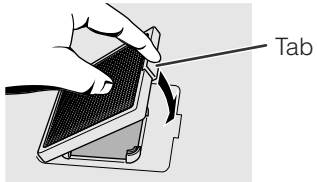
Removing and installing the lamp unit

> ⚠ **CAUTION**
> • Be sure to remove the lamp cage by the handle. Be sure not to touch the glass surface of the lamp cage or the inside of the projector.
> • To avoid injury to yourself and damage to the lamp, be sure to carefully follow the steps below.
> • Be sure to change the air filter during lamp replacement. The air filter comes packaged with the lamp unit.

1 Turn off the power.	**2** Disconnect the power cord.	**3** Remove the bottom filter cover.
Press **POWER OFF**. Wait until the cooling fan stops. Push the antenna completely down to its resting position.	Unplug the power cord from the AC socket.	Turn over the projector. Press the tab and lift open the filter cover in the direction of the arrow.
4 Remove the air filter.	**5** Replace the air filter.	**6** Replace the filter cover.
Grasp the air filter between your fingers and lift it out of the filter cover.	Place the air filter underneath the tabs on the filter frame.	Insert the tab on the end of the filter cover into the filter cover opening and press the filter cover into position.

Maintenance & Troubleshooting

⊕ Replacing the Lamp

7 Remove the lamp cage cover.	**8** Remove the lamp cage.	**9** Insert the new lamp cage.
Turn over the projector and loosen the user service screw that secures the lamp cage cover. Then slide the cover in the direction of the arrow.	Remove the securing screws from the lamp cage. Hold the lamp cage by the handle and pull it towards you.	Press the lamp cage firmly into the lamp cage compartment. Fasten the securing screws.
User service screw	Securing screw Securing screws	
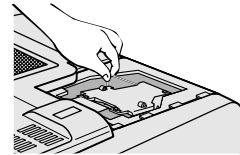
10 Attach the lamp cage cover.
Slide the lamp cage cover in the direction of the arrow. Then tighten the user service screw.
User service screw
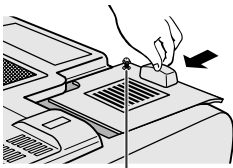
Resetting the lamp timer

1 Connect the power cord.	**2** Reset the lamp timer.	
Plug the power cord into the AC socket of the projector.	While pressing ▼, ▶ and **ENTER** on the projector, press **POWER ON** on the projector.	"LAMP 0000H" is displayed, indicating that the lamp timer is reset.
	ON	LAMP 0000H
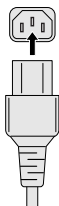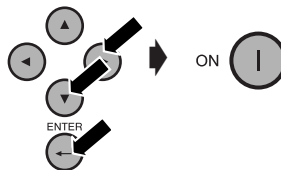
NOTE ▶

• Reset the lamp timer only after replacing the lamp.

Maintenance & Troubleshooting

Replacing the Air Filter

- This projector is equipped with two air filters to ensure the optimal operating condition of the projector.
- The air filters should be cleaned every 100 hours of use. Clean the filters more often when the projector is used in a dusty or smoky location.
- Have your nearest Authorized Sharp Industrial LCD Products Dealer or Service Center exchange the filter (PFILD0080CEZZ) when it is no longer possible to clean it.

Bottom View
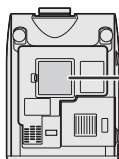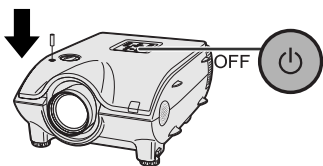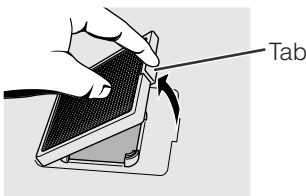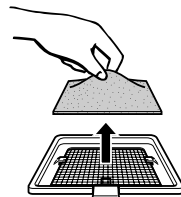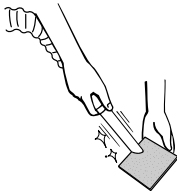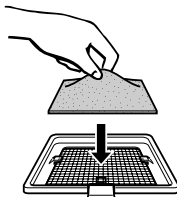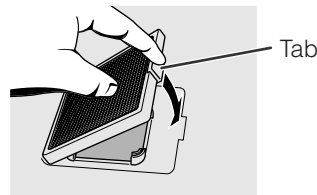
Air filter

Side and Rear View

Air filter (not removable)

Cleaning and replacing the bottom air filter

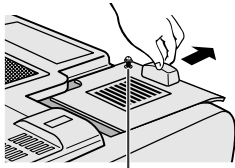| **1** Turn off the power and disconnect the power cord.	**2** Remove the bottom filter cover.	**3** Remove the air filter.
Press **POWER OFF**. Wait until the cooling fan stops. Push the antenna completely down to its resting position.	Turn over the projector. Press the tab and lift open the filter cover in the direction of the arrow.	Grasp the air filter between your fingers and lift it out of the filter cover.
OFF	Tab	
4 Clean the air filter.	**5** Replace the air filter.	**6** Replace the filter cover.
Clean the dust off the air filter and cover with a vacuum cleaner extension hose.	Place the air filter underneath the tabs on the filter frame.	Insert the tab on the end of the filter cover into the filter cover opening and press the filter cover into position.
		Tab

NOTE
- Be sure the filter cover is securely installed. The power will not turn on unless it is correctly installed.

Cleaning the side air filter (not removable)
If dust or dirt has collected inside the air filter, clean the filter with a vacuum cleaner extension hose.

NOTE
- The side air filter cannot be removed.

Troubleshooting

Problem	Check
Power cannot be turned on or off using the POWER buttons (ON/OFF) on the projector.	• Keylock level is set to "Level A" or "Level B", preventing operation of some or all buttons. (See page **58**.)
Cannot be operated by GyroRemote.	• Register GyroRemote once again the projector. (See page **37**.) • When the GyroRemote is connected to the projector with wired remote control cable, confirm the position of the IR/Gyro switch. (See page **38**.) • When the projector is set to slave, use the buttons on the master projector or change the setting by RS-232C commands from the computer. (See page **58**.)
Cannot be operated by all buttons of the projector and GyroRemote.	• When using slave setting in combination with Keylock Level B, all the buttons on the projector and the GyroRemote are disabled. Use the SAPS or RS-232C commands to release slave and Keylock setting and enable buttons to operate. Without a computer, you can release slave and Keylock setting by entering the buttons on the projector as follows. ON → ENTER → ON → ENTER → ON → ENTER → MENU However, this operation also releases the password set.
No picture and no sound.	• Projector power cord is not plugged into the wall outlet. • The bottom filter cover is not securely installed. • Selected input is wrong. (See page **39**.) • Cables incorrectly connected to rear panel of the projector. (See pages **13**–**18**.) • GyroRemote batteries have run down. (See page **11**.)
Sound is heard but no picture appears.	• Cables incorrectly connected to rear panel of the projector. (See pages **13**–**18**.) • "Contrast" and "Bright" adjustments are set to minimum position. (See page **47**.) • On-screen Display ("BLACK SCREEN") is turned off and Black Screen function is turned on, creating a black image. (See page **40**.)
Color is faded or poor.	• "Color" and "Tint" adjustments are not correct. (See page **47**.)
Picture is blurred.	• Adjust the focus. (See page **21**.) • Projection distance is too long or too short to allow for proper focus. (See pages **22**–**28**.)
Picture appears but no sound is heard.	• Cables incorrectly connected to rear panel of the projector. (See pages **13**–**18**.) • Volume is set to minimum. (See page **39**.)
No OSD appears.	• OSD Display is set to "Level A" or "Level B", preventing to display some or all On-screen Displays. (See page **54**.)
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 **67**.
Picture noise appears.	• Adjust the "Phase" setting. (See page **49**.) • Noise may appear when used with certain computers. Set the NOISE FILTER to ON using the RS-232C command. (See pages **73**–**75**.)
480P images do not appear.	• Set the resolution mode to 480P. (See page **50**.)
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 **47**.)
Lens comes off.	• Align the mark on the lens with the corresponding mark on the projector, push the lens firmly in place, and rotate to the right.

For SHARP Assistance (U.S.A. only)

If you encounter any problems during setup or operation of this projector, first refer to the "Troubleshooting" section on this page. If this operation manual does not answer your question, please call toll free 1-888-GO-SHARP (1-888-467-4277) for further assistance. Or, send us an e-mail at lcdsupport@sharplcd.com .
Our World Wide Web address is http://www.sharplcd.com .

Maintenance & Troubleshooting

Connecting Pin Assignments

INPUT 1 RGB and OUTPUT (INPUT 1, 2) Signal Ports: 15-pin Mini D-sub female connector
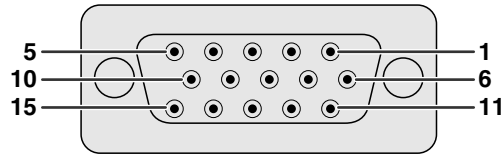
RGB Input
Analog

1. Video input (red)
2. Video input
   (green/sync on green)
3. Video input (blue)
4. Reserve input 1
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

Component Input
Analog

1. P_R (C_R)
2. Y
3. P_B (C_B)
4. Not connected
5. Not connected
6. Earth (P_R)
7. Earth (Y)
8. Earth (P_B)
9. Not connected
10. Not connected
11. Not connected
12. Not connected
13. Not connected
14. Not connected
15. Not connected

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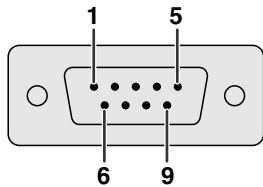
Pin No.	Signal	Name	I/O	Reference
1	CD			Not connected
2	RD	Receive Data	Input	Connected to internal circuit
3	SD	Send Data	Output	Connected to internal circuit
4	ER			Not connected
5	SG	Signal Ground		Connected to internal circuit
6	DR	Data Set Ready	Output	Not connected
7	RS	Request to Send	Output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

INPUT 3 DVI Port: 29-pin

Pin No.	Name
1	T.M.D.S. Data 2 −
2	T.M.D.S. Data 2 +
3	T.M.D.S. Data 2/4 Shield
4	T.M.D.S. Data 4 − [3]
5	T.M.D.S. Data 4 + [3]
6	DDC Clock
7	DDC Data
8	Analog Vertical Sync
9	T.M.D.S. Data 1 −
10	T.M.D.S. Data 1 +
11	T.M.D.S. Data 1/3 Shield
12	T.M.D.S. Data 3 − [3]
13	T.M.D.S. Data 3 + [3]
14	+5 V Power
15	Ground[1]
16	Hot Plug Detect
17	T.M.D.S. Data 0 −
18	T.M.D.S. Data 0 +
19	T.M.D.S. Data 0/5 Shield
20	T.M.D.S. Data 5 − [3]
21	T.M.D.S. Data 5 + [3]
22	T.M.D.S. Clock Shield
23	T.M.D.S. Clock +
24	T.M.D.S. Clock −
C1	Analog Red
C2	Analog Green
C3	Analog Blue
C4	Analog Horizontal sync
C5	Analog Ground[2]

NOTE

- [1] Return for +5 V, Hsync. and Vsync.
- [2] Analog R, G and B return
- [3] These pins are not used on this equipment.

(RS-232C) Specifications and Command Settings

PC control

A computer can be used to control the projector by connecting an RS-232C cable (null modem, cross type, sold separately) to the projector. (See page `16` for connection.)

Communication conditions

Set the serial port settings of the computer to match that of the table.
Signal format: Conforms to RS-232C standard.
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

Command 4-digit   Parameter 4-digit

Return code (0DH)
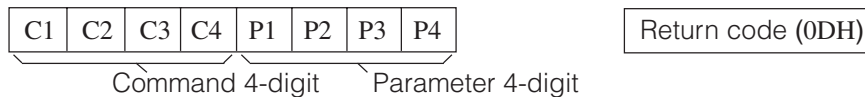
Response code format

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 "BRIGHT" of INPUT 1 (RGB 1) image adjustment is set to − 10.

Computer   Projector

R	A	B	R	_	−	1	0	↵

O	K	↵
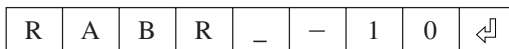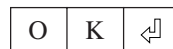
CONTROL CONTENTS	COMMAND				PARAMETER				RETURN
POWER ON	P	O	W	R	_	_	_	1	OK OR ERR
POWER OFF	P	O	W	R	_	_	_	0	OK OR ERR
VOLUME (0 – 60)	V	O	L	A	_	_	*	*	OK OR ERR
MUTE ON	M	U	T	E	_	_	_	1	OK OR ERR
MUTE OFF	M	U	T	E	_	_	_	0	OK OR ERR
LENS FOCUS (− 30 − + 30)	L	N	F	O	_	*	*	*	OK OR ERR
LENS ZOOM (− 30 − + 30)	L	N	Z	O	_	*	*	*	OK OR ERR
KEYSTONE (− 127 − + 127)	K	E	Y	S	*	*	*	*	OK OR ERR
V-SIZE (− 30 − + 30)	V	S	I	Z	_	*	*	*	OK OR ERR
DIGITAL SHIFT (− 96 − + 96)	L	N	D	S	_	*	*	*	OK OR ERR

BUTTONS & REMOTE CONTROL KEY

CONTROL CONTENTS	COMMAND				PARAMETER				RETURN
BLACK SCREEN ON	I	M	B	K	_	_	_	1	OK OR ERR
BLACK SCREEN OFF	I	M	B	K	_	_	_	0	OK OR ERR
INPUT 1 (RGB 1)	I	R	G	B	_	_	_	1	OK OR ERR
INPUT 2 (RGB 2)	I	R	G	B	_	_	_	2	OK OR ERR
INPUT 3 (RGB 3)	I	R	G	B	_	_	_	3	OK OR ERR
INPUT 4 (VIDEO 1)	I	V	E	D	_	_	_	1	OK OR ERR
INPUT 5 (VIDEO 2)	I	V	E	D	_	_	_	2	OK OR ERR
INPUT CHECK	I	C	H	K	_	_	_	0	OK OR ERR
FREEZE ON	F	R	E	Z	_	_	_	1	OK OR ERR
FREEZE OFF	F	R	E	Z	_	_	_	0	OK OR ERR
AUTO SYNC START	A	D	J	S	_	_	_	1	OK OR ERR

BUTTONS & REMOTE CONTROL KEY

(RS-232C) Specifications and Command Settings

BUTTONS & REMOTE CONTROL KEY

CONTROL CONTENTS	COMMAND	PARAMETER	RETURN
INPUT 1 (RGB 1) RESIZE : NORMAL	R A S R	_ _ _ 1	OK OR ERR
INPUT 1 (RGB 1) RESIZE : FULL	R A S R	_ _ _ 5	OK OR ERR
INPUT 1 (RGB 1) RESIZE : DOT BY DOT	R A S R	_ _ _ 3	OK OR ERR
INPUT 2 (RGB 2) RESIZE : NORMAL	R B S R	_ _ _ 1	OK OR ERR
INPUT 2 (RGB 2) RESIZE : FULL	R B S R	_ _ _ 5	OK OR ERR
INPUT 2 (RGB 2) RESIZE : DOT BY DOT	R B S R	_ _ _ 3	OK OR ERR
INPUT 3 (RGB 3) RESIZE : NORMAL	R C S R	_ _ _ 1	OK OR ERR
INPUT 3 (RGB 3) RESIZE : FULL	R C S R	_ _ _ 5	OK OR ERR
INPUT 3 (RGB 3) RESIZE : DOT BY DOT	R C S R	_ _ _ 3	OK OR ERR
INPUT 4 (VIDEO 1) RESIZE : NORMAL	R A S V	_ _ _ 1	OK OR ERR
INPUT 4 (VIDEO 1) RESIZE : FULL	R A S V	_ _ _ 5	OK OR ERR
INPUT 4 (VIDEO 1) RESIZE : BORDER	R A S V	_ _ _ 3	OK OR ERR
INPUT 4 (VIDEO 1) RESIZE : STRETCH	R A S V	_ _ _ 2	OK OR ERR
INPUT 4 (VIDEO 1) RESIZE : SMART STRETCH	R A S V	_ _ _ 4	OK OR ERR
INPUT 5 (VIDEO 2) RESIZE : NORMAL	R B S V	_ _ _ 1	OK OR ERR
INPUT 5 (VIDEO 2) RESIZE : FULL	R B S V	_ _ _ 5	OK OR ERR
INPUT 5 (VIDEO 2) RESIZE : BORDER	R B S V	_ _ _ 3	OK OR ERR
INPUT 5 (VIDEO 2) RESIZE : STRETCH	R B S V	_ _ _ 2	OK OR ERR
INPUT 5 (VIDEO 2) RESIZE : SMART STRETCH	R B S V	_ _ _ 4	OK OR ERR
RGB GAMMA : STANDARD	G A M R	_ _ _ 1	OK OR ERR
RGB GAMMA : PRESENTATION	G A M R	_ _ _ 2	OK OR ERR
RGB GAMMA : CINEMA	G A M R	_ _ _ 3	OK OR ERR
RGB GAMMA : CUSTOM	G A M R	_ _ _ 4	OK OR ERR
VIDEO GAMMA : STANDARD	G A M V	_ _ _ 1	OK OR ERR
VIDEO GAMMA : PRESENTATION	G A M V	_ _ _ 2	OK OR ERR
VIDEO GAMMA : CINEMA	G A M V	_ _ _ 3	OK OR ERR
VIDEO GAMMA : CUSTOM	G A M V	_ _ _ 4	OK OR ERR

PICTURE

CONTROL CONTENTS	COMMAND	PARAMETER	RETURN
INPUT 1 (RGB 1) CONTRAST (−30 − +30)	R A P I	_ * * *	OK OR ERR
INPUT 1 (RGB 1) BRIGHT (−30 − +30)	R A B R	_ * * *	OK OR ERR
INPUT 1 (RGB 1) RED (−30 − +30)	R A R D	_ * * *	OK OR ERR
INPUT 1 (RGB 1) BLUE (−30 − +30)	R A B E	_ * * *	OK OR ERR
INPUT 1 (RGB 1) COLOR (−30 − +30)	R A C O	_ * * *	OK OR ERR
INPUT 1 (RGB 1) TINT (−30 − +30)	R A T I	_ * * *	OK OR ERR
INPUT 1 (RGB 1) SHARP (−30 − +30)	R A S H	_ * * *	OK OR ERR
INPUT 1 (RGB 1) CLR TEMP (−3 − +3)	R A C T	_ _ * *	OK OR ERR
INPUT 1 (RGB 1) DISPLAY	R A R E	_ _ _ 0	OK OR ERR
INPUT 1 (RGB 1) ADJUSTMENT RESET	R A R E	_ _ _ 1	OK OR ERR
INPUT 2 (RGB 2) CONTRAST (−30 − +30)	R B P I	_ * * *	OK OR ERR
INPUT 2 (RGB 2) BRIGHT (−30 − +30)	R B B R	_ * * *	OK OR ERR
INPUT 2 (RGB 2) RED (−30 − +30)	R B R D	_ * * *	OK OR ERR
INPUT 2 (RGB 2) BLUE (−30 − +30)	R B B E	_ * * *	OK OR ERR
INPUT 2 (RGB 2) COLOR (−30 − +30)	R B C O	_ * * *	OK OR ERR
INPUT 2 (RGB 2) TINT (−30 − +30)	R B T I	_ * * *	OK OR ERR
INPUT 2 (RGB 2) SHARP (−30 − +30)	R B S H	_ * * *	OK OR ERR
INPUT 2 (RGB 2) CLR TEMP (−3 − +3)	R B C T	_ _ * *	OK OR ERR
INPUT 2 (RGB 2) DISPLAY	R B R E	_ _ _ 0	OK OR ERR
INPUT 2 (RGB 2) ADJUSTMENT RESET	R B R E	_ _ _ 1	OK OR ERR
INPUT 3 (RGB 3) CONTRAST (−30 − +30)	R C P I	_ * * *	OK OR ERR
INPUT 3 (RGB 3) BRIGHT (−30 − +30)	R C B R	_ * * *	OK OR ERR
INPUT 3 (RGB 3) RED (−30 − +30)	R C R D	_ * * *	OK OR ERR
INPUT 3 (RGB 3) BLUE (−30 − +30)	R C B E	_ * * *	OK OR ERR
INPUT 3 (RGB 3) COLOR (−30 − +30)	R C C O	_ * * *	OK OR ERR
INPUT 3 (RGB 3) TINT (−30 − +30)	R C T I	_ * * *	OK OR ERR
INPUT 3 (RGB 3) SHARP (−30 − +30)	R C C H	_ * * *	OK OR ERR
INPUT 3 (RGB 3) CLR TEMP (−3 − +3)	R C C T	_ _ * *	OK OR ERR
INPUT 3 (RGB 3) DISPLAY	R C R E	_ _ _ 0	OK OR ERR
INPUT 3 (RGB 3) ADJUSTMENT RESET	R C R E	_ _ _ 1	OK OR ERR

PICTURE (continued)

CONTROL CONTENTS	COMMAND	PARAMETER	RETURN
INPUT 1 (RGB 1) SIGNAL TYPE : RGB	I A S I	_ _ _ 0	OK OR ERR
INPUT 1 (RGB 1) SIGNAL TYPE : COMPONENT	I A S I	_ _ _ 1	OK OR ERR
INPUT 2 (RGB 2) SIGNAL TYPE : RGB	I B S I	_ _ _ 0	OK OR ERR
INPUT 2 (RGB 2) SIGNAL TYPE : COMPONENT	I B S I	_ _ _ 1	OK OR ERR
INPUT 1 (RGB 1) 2D PROGRESSIVE	R A I P	_ _ _ 0	OK OR ERR
INPUT 1 (RGB 1) 3D PROGRESSIVE	R A I P	_ _ _ 1	OK OR ERR
INPUT 1 (RGB 1) Film MODE	R A I P	_ _ _ 2	OK OR ERR
INPUT 2 (RGB 2) 2D PROGRESSIVE	R B I P	_ _ _ 0	OK OR ERR
INPUT 2 (RGB 2) 3D PROGRESSIVE	R B I P	_ _ _ 1	OK OR ERR
INPUT 2 (RGB 2) Film MODE	R B I P	_ _ _ 2	OK OR ERR
INPUT 3 (RGB 3) 2D PROGRESSIVE	R C I P	_ _ _ 0	OK OR ERR
INPUT 3 (RGB 3) 3D PROGRESSIVE	R C I P	_ _ _ 1	OK OR ERR
INPUT 3 (RGB 3) Film MODE	R C I P	_ _ _ 2	OK OR ERR
INPUT 4 (VIDEO 1) CONTRAST (−30 − +30)	V A P I	_ * * *	OK OR ERR
INPUT 4 (VIDEO 1) BRIGHT (−30 − +30)	V A B R	_ * * *	OK OR ERR
INPUT 4 (VIDEO 1) RED (−30 − +30)	V A R D	_ * * *	OK OR ERR
INPUT 4 (VIDEO 1) BLUE (−30 − +30)	V A B E	_ * * *	OK OR ERR
INPUT 4 (VIDEO 1) COLOR (−30 − +30)	V A C O	_ * * *	OK OR ERR
INPUT 4 (VIDEO 1) TINT (−30 − +30)	V A T I	_ * * *	OK OR ERR
INPUT 4 (VIDEO 1) SHARP (−30 − +30)	V A S H	_ * * *	OK OR ERR
INPUT 4 (VIDEO 1) CLR TEMP (−3 − +3)	V A C T	_ _ * *	OK OR ERR
INPUT 4 (VIDEO 1) DISPLAY	V A R E	_ _ _ 0	OK OR ERR
INPUT 4 (VIDEO 1) ADJUSTMENT RESET	V A R E	_ _ _ 1	OK OR ERR
INPUT 5 (VIDEO 2) CONTRAST (−30 − +30)	V B P I	_ * * *	OK OR ERR
INPUT 5 (VIDEO 2) BRIGHT (−30 − +30)	V B B R	_ * * *	OK OR ERR
INPUT 5 (VIDEO 2) RED (−30 − +30)	V B R D	_ * * *	OK OR ERR
INPUT 5 (VIDEO 2) BLUE (−30 − +30)	V B B E	_ * * *	OK OR ERR
INPUT 5 (VIDEO 2) COLOR (−30 − +30)	V B C O	_ * * *	OK OR ERR
INPUT 5 (VIDEO 2) TINT (−30 − +30)	V B T I	_ * * *	OK OR ERR
INPUT 5 (VIDEO 2) SHARP (−30 − +30)	V B S H	_ * * *	OK OR ERR
INPUT 5 (VIDEO 2) CLR TEMP (−3 − +3)	V B C T	_ _ * *	OK OR ERR
INPUT 5 (VIDEO 2) DISPLAY	V B R E	_ _ _ 0	OK OR ERR
INPUT 5 (VIDEO 2) ADJUSTMENT RESET	V B R E	_ _ _ 1	OK OR ERR
INPUT 4 (VIDEO 1) 2D PROGRESSIVE	V A I P	_ _ _ 0	OK OR ERR
INPUT 4 (VIDEO 1) 3D PROGRESSIVE	V A I P	_ _ _ 1	OK OR ERR
INPUT 4 (VIDEO 1) Film MODE	V A I P	_ _ _ 2	OK OR ERR
INPUT 5 (VIDEO 2) 2D PROGRESSIVE	V B I P	_ _ _ 0	OK OR ERR
INPUT 5 (VIDEO 2) 3D PROGRESSIVE	V B I P	_ _ _ 1	OK OR ERR
INPUT 5 (VIDEO 2) Film MODE	V B I P	_ _ _ 2	OK OR ERR
(INPUT 1–5) 2D PROGRESSIVE	I M I P	_ _ _ 0	OK OR ERR
(INPUT 1–5) 3D PROGRESSIVE	I M I P	_ _ _ 1	OK OR ERR
(INPUT 1–5) Film MODE	I M I P	_ _ _ 2	OK OR ERR

FINE SYNC [*1]

CONTROL CONTENTS	COMMAND	PARAMETER	RETURN
CLOCK (−150 − +150)	I N C L	* * * *	OK OR ERR
PHASE (−60 − +60)	I N P H	* * * *	OK OR ERR
H-POSITION (−150 − +150)	I A H P	* * * *	OK OR ERR
V-POSITION (−60 − +60)	I A V P	_ * * *	OK OR ERR
RGB INPUT DISPLAY	I A R E	_ _ _ 0	OK OR ERR
RGB ADJUSTMENT RESET	I A R E	_ _ _ 1	OK OR ERR
SAVE SETTING (1 − 7)	M E M S	_ _ _ *	OK OR ERR
SELECT SETTING (1 − 7)	M E M L	_ _ _ *	OK OR ERR
RGB HORIZONTAL FREQUENCY CHECK	T F R Q	_ _ _ 1	kHz (***. * OR _)
RGB VERTICAL FREQUENCY CHECK	T F R Q	_ _ _ 2	Hz (***. * OR _)
AUTO SYNC OFF	A A D J	_ _ _ 0	OK OR ERR
NORMAL AUTO SYNC	A A D J	_ _ _ 1	OK OR ERR
HIGH SPEED AUTO SYNC	A A D J	_ _ _ 2	OK OR ERR
AUTO SYNC DISPLAY ON	I M A S	_ _ _ 1	OK OR ERR
AUTO SYNC DISPLAY OFF	I M A S	_ _ _ 0	OK OR ERR

(RS-232C) Specifications and Command Settings

	CONTROL CONTENTS	COMMAND	PARAMETER	RETURN
AUDIO	BALANCE (−30 − +30)	A A B L	_ * * *	OK OR ERR
	TREBLE (−30 − +30)	A A T E	_ * * *	OK OR ERR
	BASS (−30 − +30)	A A B A	_ * * *	OK OR ERR
	AUDIO DISPLAY	A A R E	_ _ 0	OK OR ERR
	AUDIO ADJUSTMENT RESET	A A R E	_ _ 1	OK OR ERR
	FAO	A O U T	_ _ 1	OK OR ERR
	VAO	A O U T	_ _ 2	OK OR ERR
	SPEAKER ON	A S P K	_ _ 1	OK OR ERR
	SPEAKER OFF	A S P K	_ _ 0	OK OR ERR
OPTIONS (1)	PICT IN PICT : BOTTOM RIGHT	P I N P	_ 1 1	OK OR ERR
	PICT IN PICT : BOTTOM LEFT	P I N P	_ 1 2	OK OR ERR
	PICT IN PICT : UPPER RIGHT	P I N P	_ 1 3	OK OR ERR
	PICT IN PICT : UPPER LEFT	P I N P	_ 1 4	OK OR ERR
	PICT IN PICT RESET	P I N P	_ _ 0	OK OR ERR
	VIDEO DNR OFF	3 D N R	_ _ 0	OK OR ERR
	VIDEO 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
	BLACK SCREEN DISPLAY ON	I M B O	_ _ 1	OK OR ERR
	BLACK SCREEN DISPLAY OFF	I M B O	_ _ 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 : SHARP	I M B G	_ _ 1	OK OR ERR
	BACKGROUND SELECTION : CUSTOM	I M B G	_ _ 2	OK OR ERR
	BACKGROUND SELECTION : BLUE	I M B G	_ _ 3	OK OR ERR
	BACKGROUND SELECTION : NONE	I M B G	_ _ 4	OK OR ERR
	STARTUP IMAGE SELECTION : SHARP	I M S I	_ _ 1	OK OR ERR
	STARTUP IMAGE SELECTION : CUSTOM	I M S I	_ _ 2	OK OR ERR
	STARTUP IMAGE SELECTION : NONE	I M S I	_ _ 3	OK OR ERR
	MONITOR OUT OFF	M O U T	_ _ 0	OK OR ERR
	MONITOR OUT ON	M O U T	_ _ 1	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

	CONTROL CONTENTS	COMMAND	PARAMETER	RETURN
OPTIONS (2)	LAMP USAGE TIME	T L T T	_ _ 1	0–9999 (INTEGER)
	LAMP STATUS	T L P S	_ _ 1	0:OFF, 1:ON, 2:RETRY, 3:WAITING, 4:LAMP ERROR
	PRJ MODE : REVERSE OFF	I M R E	_ _ 0	OK OR ERR
	PRJ MODE : REVERSE ON	I M R E	_ _ 1	OK OR ERR
	PRJ MODE : INVERT OFF	I M I N	_ _ 0	OK OR ERR
	PRJ MODE : INVERT ON	I M I N	_ _ 1	OK OR ERR
	STACK SETTING : NORMAL	S T A K	_ _ 0	OK OR ERR
	STACK SETTING : MASTER	S T A K	_ _ 1	OK OR ERR
	STACK SETTING : SLAVE	S T A K	_ _ 2	OK OR ERR
	KEYLOCK LEVEL : NORMAL	K E Y L	_ _ 0	OK OR ERR
	KEYLOCK LEVEL : LEVEL A	K E Y L	_ _ 1	OK OR ERR
	KEYLOCK LEVEL : LEVEL B	K E Y L	_ _ 2	OK OR ERR
	SET INPUTS : INPUT 1 NO USE	R A S I	_ _ 0	OK OR ERR
	SET INPUTS : INPUT 1 USE	R A S I	_ _ 1	OK OR ERR
	SET INPUTS : INPUT 2 NO USE	R B S I	_ _ 0	OK OR ERR
	SET INPUTS : INPUT 2 USE	R B S I	_ _ 1	OK OR ERR
	SET INPUTS : INPUT 3 NO USE	R C S I	_ _ 0	OK OR ERR
	SET INPUTS : INPUT 3 USE	R C S I	_ _ 1	OK OR ERR
	SET INPUTS : INPUT 4 NO USE	V A S I	_ _ 0	OK OR ERR
	SET INPUTS : INPUT 4 USE	V A S I	_ _ 1	OK OR ERR
	SET INPUTS : INPUT 5 NO USE	V B S I	_ _ 0	OK OR ERR
	SET INPUTS : INPUT 5 USE	V B S I	_ _ 1	OK OR ERR
	ID NO. CHECK	R D I D	_ _ 1	001–250
LANGUAGE	LANGUAGE SELECTION : ENGLISH	M E L A	_ _ 0	OK OR ERR
	LANGUAGE SELECTION : DEUTSCH	M E L A	_ _ 1	OK OR ERR
	LANGUAGE SELECTION : ESPAÑOL	M E L A	_ _ 2	OK OR ERR
	LANGUAGE SELECTION : NEDERLANDS	M E L A	_ _ 3	OK OR ERR
	LANGUAGE SELECTION : FRANÇAIS	M E L A	_ _ 4	OK OR ERR
	LANGUAGE SELECTION : ITALIANO	M E L A	_ _ 5	OK OR ERR
	LANGUAGE SELECTION : SVENSKA	M E L A	_ _ 6	OK OR ERR
	LANGUAGE SELECTION : 日本語	M E L A	_ _ 7	OK OR ERR
	LANGUAGE SELECTION : PORTUGUÊS	M E L A	_ _ 8	OK OR ERR
	LANGUAGE SELECTION : 汉语	M E L A	_ _ 9	OK OR ERR
	LANGUAGE SELECTION : 한국어	M E L A	_ 1 0	OK OR ERR
	MODEL NAME CHECK	M N R D	_ _ 1	MODEL NAME
	NOISE FILTER OFF	N F I L	_ _ 0	OK OR ERR
	NOISE FILTER ON *2	N F I L	_ _ 1	OK OR ERR
	SERIAL NO. CHECK *3	S N R D	_ _ 1	SERIAL NO.
	PROJECTOR NAME SETTING *4	P J N A	_ _ 1	OK OR ERR
	PROJECTOR NAME CHECK	P J N A	_ _ 2	PROJECTOR NAME

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.
- *2 Noise may appear when used with certain computers. Set the NOISE FILTER to ON using the RS-232C command.
- *3 SERIAL NO. CHECK command is used to read out the 12 digits of serial No..
- *4 After OK is returned, enter PROJECTOR NAME, up to 12-character memory. The PROJECTOR NAME in memory can then be output (confirmed).

Specifications of wired remote control input
- ø3.5 mm minijack
- External: +5 V (1 A)
- Internal: GND

Function and transmission codes

CONTROL ITEM	SYSTEM CODE					DATA CODE						EXTERNAL 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
VOLUME +	1	0	1	1	0	0	0	1	0	1	0	0	0	1	0
VOLUME −	1	0	1	1	0	1	0	1	0	1	0	0	0	1	0
MUTE	1	0	1	1	0	1	1	1	0	1	0	0	0	1	0
MENU	1	0	1	1	0	0	0	1	0	0	0	1	1	1	0
LENS	1	0	1	1	0	1	1	0	1	0	0	0	1	1	0
BLACK SCREEN	1	0	1	1	0	1	0	0	1	0	1	1	0	1	0
ENTER	1	0	1	1	0	1	1	1	0	1	0	1	0	1	0
RESIZE	1	0	1	1	0	0	1	1	1	0	1	1	0	1	0
UNDO	1	0	1	1	0	1	0	0	1	1	0	1	0	1	0

CONTROL ITEM	SYSTEM CODE					DATA CODE						EXTERNAL CODE			
	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15
Freeze	1	0	1	1	0	1	0	1	1	0	0	0	1	1	0
Enlarge	1	0	1	1	0	1	0	1	1	0	1	1	0	1	0
AUTO SYNC	1	0	1	1	0	0	1	0	1	1	1	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
GAMMA	1	0	1	1	0	0	0	0	0	0	0	1	0	1	0
INPUT 1. 2. 3	1	0	1	1	0	0	0	1	1	0	1	1	1	1	0
INPUT 4. 5	1	0	1	1	0	0	1	1	0	1	1	0	1	1	1

NOTE
- To operate the mouse, left-click and right-click functions through the wired remote control input, connect the cable from the WIRED REMOTE control input terminal on the projector to the remote control. The codes for these functions are complex and are, therefore, not listed here.

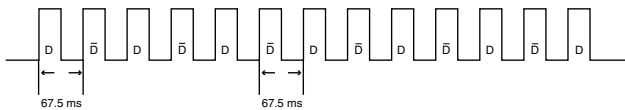### Wired remote control function code

LSB ─── MSB

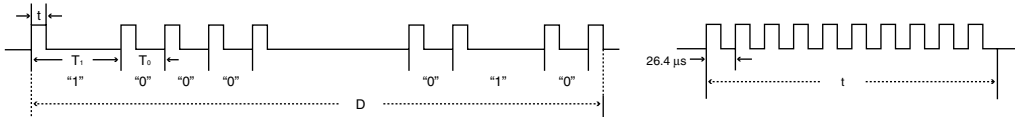	C1 ← System Code → C5					C6 ←			Data Code		→ C13		C14	C15
1	0	1	1	0	*	*	*	*	*	*	*	*	1	0

- 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"   D   26.4 µs   t

- t = 264 µs
- T_0 = 1.05 ms
- T_1 = 2.10 ms
- Pulse carrier frequency = 455/12 kHz
- Duty ratio = 1:1

Transmission control code

15 bit

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

Example of Reverse D to D̄

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

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

Computer Compatibility Chart

Horizontal Frequency: 15–126 kHz
Vertical Frequency: 43–200 Hz
Pixel Clock: 12–230 MHz
Compatible with sync on green and composite sync signals
UXGA and 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		
			61.8	120		
			78.5	150		
			80.9	160		
			100.4	200		
	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		
			77.2	120		
			98.3	150		
			102.1	160		
			125.6	200		
	XGA	1,024 × 768	35.5	43	×	True
			40.3	50		
			56.5	70	×	
			58.1	72		
			68.7	85	×	
			73.5	90		
			77.2	96		
			80.6	100		
			98.8	120		
			113.2	140		
			125.6	150		

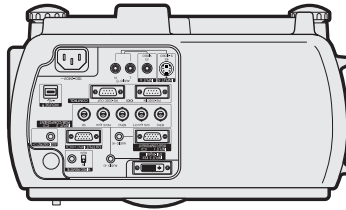| PC/MAC/WS	Resolution		Horizontal Frequency (kHz)	Vertical Frequency (Hz)	VESA Standard	Display
PC	SXGA	1,152 × 864	54.3	60		Advanced Intelligent Compression
			64.0	70		
			64.1	72		
			67.5	75	×	
			75.7	80		
			77.3	85		
			90.2	100		
			111.1	120		
		1,152 × 882	54.8	60		
			65.9	72		
			67.4	74		
		1,280 × 1,024	64.0	60	×	
			74.6	70		
			78.1	74		
			75.7	75		
			91.1	85	×	
			108.4	100		
	UXGA	1,600 × 1,200	74.7	52		Intelligent Compression
			75.0	60	×	
			81.3	65	×	
			87.5	70	×	
			90.1	72		
			93.8	75	×	
			106.3	85	×	
PC/MAC 13"	VGA	640 × 480	34.9	67		Upscale
PC/MAC 19"	XGA	1,024 × 768	48.4	60	×	True
			60.0	75	×	
PC/MAC 21"	SXGA	1,280 × 1,024	80.0	75	×	Advanced Intelligent Compression
MAC 16"	SVGA	832 × 624	46.8	75		Upscale
			49.6	75		
MAC 21"	SXGA	1,152 × 870	68.5	75		Advanced Intelligent Compression
HP (WS)		1,280 × 1,024	78.1	72		
PC (WS)		1,280 × 960	60.0	60	×	
WS	SXGA		85.9	85		
SGI (WS)		1,280 × 1,024	53.5	50		
			76.8	72		
SUN (WS)		1,152 × 900	60.9	66		
			71.9	76		

NOTE
- This projector may not be able to display images from notebook computers in simultaneous (CRT/LCD) mode. Should this occur, turn off the LCD display on the notebook computer and output the display data in "CRT only" mode. Details on how to change display modes can be found in your notebook computer's operation manual.
- This projector can receive 640 × 350 VESA format VGA signals, however, "640 × 400" will appear on the screen.
- When receiving 1,600 × 1,200 VESA format UXGA signals, sampling occurs and the image is displayed with 1,024 lines, causing part of the image to be blocked.
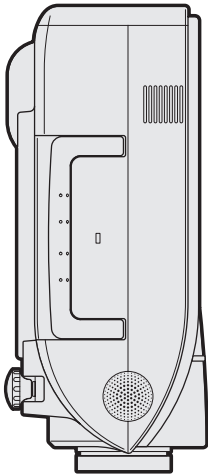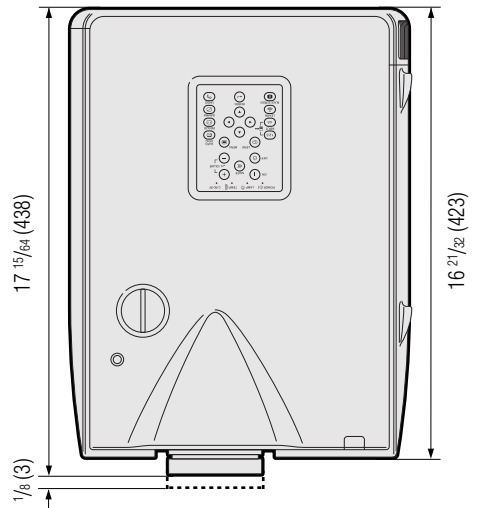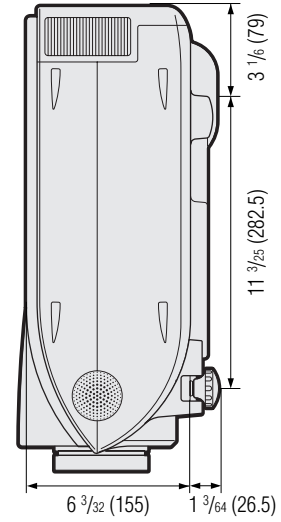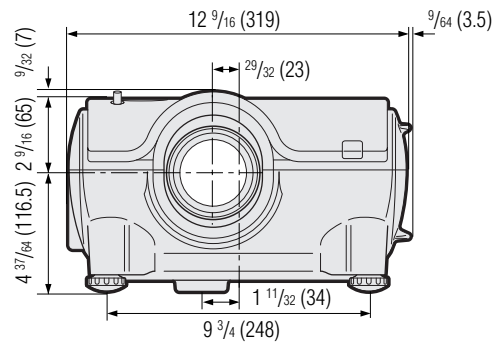
Appendix

Dimensions

Rear View

Side View   **Top View**   **Side View**

17 ¹⁵/₆₄ (438)

16 ²¹/₃₂ (423)

¹/₈ (3)

3 ¹/₆ (79)

11 ³/₂₅ (282.5)

6 ³/₃₂ (155)   1 ³/₆₄ (26.5)

12 ⁹/₁₆ (319)   ⁹/₆₄ (3.5)

⁹/₃₂ (7)

²⁹/₃₂ (23)

2 ⁹/₁₆ (65)

4 ³⁷/₆₄ (116.5)

Front View

1 ¹¹/₃₂ (34)

9 ³/₄ (248)

Bottom View
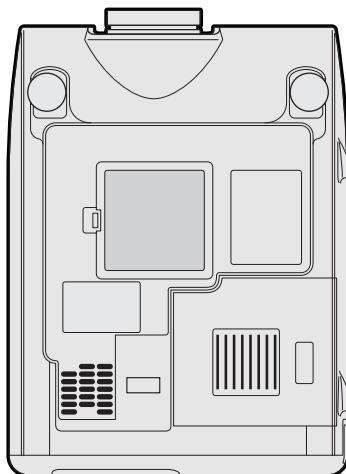
Units: inches (mm)

Specifications

Product type	LCD Projector
Model	XG-P20XU
Video system	PAL/PAL 60/PAL-M/PAL-N/SECAM/NTSC 3.58/NTSC 4.43
	DTV 480P/720P/1080i
Display method	LCD panel × 3, RGB optical shutter method
LCD panel	Panel size: 1.3″ (20.0 [H] × 26.6 [W] mm)
	Display method: Translucent TN liquid crystal panel
	Drive method: TFT (Thin Film Transistor) Active Matrix panel
	No. of dots: 786,432 dots (1,024 [H] × 768 [V])
Standard Lens	1–1.3 × zoom lens, F1.7–2.3, f = 49.1–63.8 mm
Projection lamp	AC 220 W lamp
Contrast ratio	600:1
Video input signal	RCA Connector: VIDEO, composite video, 1.0 Vp-p, sync negative, 75 Ω terminated
	RCA Connector: AUDIO, 0.5 Vrms more than 22 kΩ (stereo)
S-video input signal	4-pin Mini DIN connector
	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	BNC Connector (INPUT 2)
	Y: 1.0 Vp-p, sync negative, 75 Ω terminated
	P_B: 0.7 Vp-p, 75 Ω terminated
	P_R: 0.7 Vp-p, 75 Ω terminated
Horizontal resolution	520 TV lines (S-video input), 750 TV lines (DTV 720P input, STRETCH mode)
RGB input signal	15-PIN MINI D-SUB CONNECTOR (INPUT 1), 5 BNC CONNECTOR (INPUT 2):
	RGB separate/composite sync/sync on green type analog input: 0–0.7 Vp-p, positive, 75 Ω terminated
	DVI CONNECTOR (29-PIN) (INPUT 3), RGB (DIGITAL), 250–1,000 mV, 50 Ω
	HORIZONTAL SYNC. SIGNAL: TTL level (positive/negative) or composite sync (Apple only)
	VERTICAL SYNC. SIGNAL: Same as above
	STEREO MINIJACK: AUDIO, 0.5 Vrms, more than 22 kΩ (stereo)
Pixel clock	12–230 MHz
Vertical frequency	43–200 Hz
Horizontal frequency	15–126 kHz
Computer control signal	9-pin D-sub connector (RS-232C Input Port/Output Port)
Speaker system	1 ⁴⁹⁄₆₄″ (4.5 cm) round × 2
	2 W + 2 W (stereo)
Rated voltage	AC 100–240 V
Input current	3.95 A
Rated frequency	50/60 Hz
Power consumption	330 W
Power dissipation	< 1,250 BTU/hour
Operating temperature	41°F to 104°F (+5°C to +40°C)
Storage temperature	−4°F to 140°F (−20°C to +60°C)
Cabinet	Plastic
GyroRemote	Radio Frequency Range: 49.825–49.895 MHz
Dimensions (approx.)	12 ⁹⁄₁₆″ (W) × 6 ³⁄₃₂″ (H) × 16 ²¹⁄₃₂″ (D) (319.0 × 155.0 × 423.0 mm) (main body only)
	12 ¹¹⁄₃₂″ (W) × 7 ²⁷⁄₆₄″ (H) × 17 ¹⁵⁄₆₄″ (D) (322.5 × 188.5 × 438.0 mm) (including standard lens, adjustment feet and projecting parts)
Weight (approx.)	21.0 lbs. (9.5 kg)
Supplied accessories	GyroRemote, Four AAA size batteries, Power cord (11′ 10″, 3.6 m), RGB cable (9′ 10″, 3 m), USB mouse control cable (3′ 3″, 1 m), Computer audio cable (9′ 10″, 3 m), ø2.5–ø3.5 mm wired remote control cable (6 ⁴⁵⁄₆₄″, 15 cm), Three BNC-RCA adaptors, Extra air filter, Lens cap, CD-ROM, LCD projector operation manual, LCD projector quick guide, Sharp Advanced Presentation Software operation manual, ID number seal
Replacement parts	Standard lens unit (CLNS-0236CE01), Lamp unit (Lamp/cage module) (BQC-XGP20X//1), GyroRemote (RRMCG1631CESA), AAA size batteries, Power cord (QACCU5013DE01), RGB cable (QCNW-5304CEZZ), USB mouse control cable (QCNW-5916CEZZ), Computer audio cable (QCNW-4870CEZZ), ø2.5–ø3.5 mm wired remote control cable (QCNW-5943CEZZ), BNC-RCA adaptors (QPLGJ0107GEZZ), Air filter (PFILD0080CEZZ), Lens cap (PCAPH1056CESA), CD-ROM (UDSKA0043CEN1), LCD projector operation manual (TINS-7354CEZZ), LCD projector quick guide (TINS-7355CEZZ), Sharp Advanced Presentation Software operation manual (TINS-7356CEZZ), ID number seal (TLABZ0781CEZZ)

This SHARP projector uses LCD (Liquid Crystal Display) panels. These very sophisticated panels contain 786,432 pixels (× RGB) TFTs (Thin Film Transistors). 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 TFTs within acceptable tolerances which may result in illuminated or inactive dots on the picture screen. This will not affect the picture quality or the life expectancy of the unit. If you have any questions about this matter, please call toll free 1-888-GO-SHARP (1-888-467-4277). U.S.A. ONLY

Specifications are subject to change without notice.

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
Optimizes projected computer images by automatically adjusting certain characteristics.

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

Border
Displays the 4:3 image as the biggest size (768×576) that can be displayed on the WIDE mode screen (1024×576).

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

CLR Temp (Color temperature)
Function that can be used to adjust the color temperature to suit the type of image input to the projector. Decrease the color 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 shift
Shifts image up or down easily by ▲/▼ buttons when RESIZE mode of input image is BORDER, STRETCH or SMART STRETCH of COMPUTER (except for SXGA and UXGA), VIDEO and DTV inputs.

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

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

DVI
Digital Visual Interface that supports both digital and analog displays.

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, PRESENTATION, CINEMA and CUSTOM.

GyroRemote
Remote control device with a built-in sensor that can operate projectors and computers. GyroRemote communicates with a projector via radio signals and therefore does not encounter the line-of-sight problems found in infrared devices.

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

Intelligent digital keystone correction
Function to digitally correct a distorted image when the projector is set up at an angle, smooths out jaggies on keystone images and compresses the image not only horizontally but vertically keeping the 4:3 aspect ratio, and at the same time, calculates the aspect ratio automatically adjusting to the lens shift width.

Keylock level
Mode that can lock the operation of projector buttons to prevent mischief.

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

Magnification (Enlarge)
Digitally zooms in on a portion of an image.

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.

Picture in Picture
Allows you to add video images onto a data screen image, providing you with even more effective presentations.

Presentation tools
Helpful tools used to emphasize keypoints throughout a presentation.

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 customize the picture display mode to enhance the input image. You can select six different modes: NORMAL, FULL, DOT BY DOT, BORDER, STRETCH and SMART STRETCH.

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

Set Inputs
Function to limit inputs. For example, when setting Input 2 to "OFF", the input is switchable only between Input 1 and Input 3, skipping Input 2.

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

Stack Setting
Prevents trouble with adjustment and operation when stack projecting. When setting two projectors, one to master and the other to slave, the slave follows the master's operation.

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 color signal pin.

Index

SHARP CORPORATION