MITSUBISHI

sRGB

DATA
Projector
User Manual

XD200
SD200

MODEL   XD200U / SD200U

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

Use the attached PS/2 adapter cable, USB adapter cable and RGB cable with this equipment so as to keep interference within the limit of a FCC Class B device.

This apparatus must be grounded.

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

When using the projector in Europe COMPLIANCE NOTICE
This Projector complies with the requirements of the EC Directive 89/336/EEC "EMC Directive" and 73/23/EEC "Low Voltage Directive" as amended by Directive 93/68/EEC.

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

WARNING
Use the attached PS/2 adapter cable, USB adapter cable and RGB cable with this equipment so as to keep interference within the limit of a EN55022 Class B. Please follow WARNINGS instructions.

Contents

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Macintosh is registered trademark of Apple Computer Inc.

PS/2 is trademark or registered trademarks of International Business Machines Corporation.

DLP, Digital Micromirror Device and DMD are all trademarks of Texas Instruments.

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Important safeguards

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

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

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

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

4. Instructions
   All operating instructions must be followed.

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

6. Attachments and equipment
   Never add any attachments and/or equipment without the approval of the manufacturer as such additions may result in the risk of fire, electric shock or other personal injury.

7. Water and moisture
   Do not use this projector near water or in contact with water.

8. Accessories
   Do not place this projector on an unstable cart, stand, tripod, bracket or table. Use only with a cart, stand, tripod bracket, or table recommended by the manufacturer or sold with the projector. Any mounting of the appliance should follow the manufacturer's instructions and should use a mounting accessory recommended by the manufacturer.

An appliance and cart combination should be moved with care. Quick stops, excessive force and uneven surfaces may cause the appliance and cart combination to overturn.

9. Ventilation
   Slots and openings in the cabinet are provided for ventilation, ensuring reliable operation of the projector and to protect it from overheating. Do not block these openings or allow them to be blocked by placing the projector on a bed, sofa, rug, or bookcase. Ensure that there is adequate ventilation and that the manufacturer's instructions have been adhered to.

10. Power sources
    This projector should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power, please consult your appliance dealer or local power company.

11. Power-cord protection
    Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them. Pay particular attention to cords at plugs, convenience receptacles, and points where they exit from the appliance. Do not put the power cord under a carpet.

12. Overloading
    Do not overload wall outlets and extension cords as this can result in a fire or electric shock.

13. Objects and liquids
    Never push objects of any kind through openings of this projector as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the projector.

14. Servicing
    Do not attempt to service this projector yourself. Refer all servicing to qualified service personnel.

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

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

17. Safety check
    Upon completion of any service or repair to this projector, ask the service technician to perform safety checks determining that the projector is in a safe operating condition.

WARNING:
Unplug immediately if there is something wrong with your projector.

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

Never remove the cabinet.

This projector contains high voltage circuitry. An inadvertent contact may result in an electric shock. Except as specifically explained in the Owner's Guide, do not attempt to service this product yourself. Please contact your dealer when you want to fix, adjust or inspect the projector.

Do not modify this equipment.

It can lead to fire or electric shock.

If you break or drop the cabinet.

Do not keep using this equipment if you break or drop it. Unplug the projector and contact your dealer for inspection. It may lead to fire if you keep using the equipment.

Do not face the projector lens to the sun.

It can lead to fire.

Use correct voltage.

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

Do not place the projector on uneven surface.

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

Do not look into the lens when it is operating. It may hurt your eyes.

Never let children look into the lens when it is on.

Do not turn off the main power abruptly or unplug the projector during operation.

It can lead to lamp breakage, fire, electric shock or other trouble. It is best to wait for the fan to turn off before turning main power off.

Do not touch Air outlet grille and Bottom plate which becomes hot.

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

Do not look into the air outlet grille when projector is operating.

Heat, dust etc. may blow out of it and hurt your eyes.

Place of installation

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

- Operating temperature: between +41°F (+5°C) and +95°F (+35°C)
- Operating humidity: between 30 and 90%
- Never put any heat-producing device under the projector so that the projector does not overheat.
- Do not attach the projector to a place that is unstable or subject to vibration.
- Do not install the projector near any equipment that produces a strong magnetic field. Also refrain from installing near the projector any cable carrying a large current.
- Place the projector on a solid, vibration free surface: otherwise it may fall, causing serious injury to a child or adult, and serious damage to the product.
- Do not stand the projector: it may fall, causing serious injury and damage to the projector.
- Slanting the projector more than ±10°(right and left) or ±15° (front and rear) may cause trouble or explosion of the lamp.
- Do not place the projector near air-conditioning unit or heater to avoid hot air to the exhaust and ventilation hole of the projector.

COMPLIANCE NOTICE OF FCC

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

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

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

COMPLIANCE NOTICE OF INDUSTRY CANADA

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

Overview
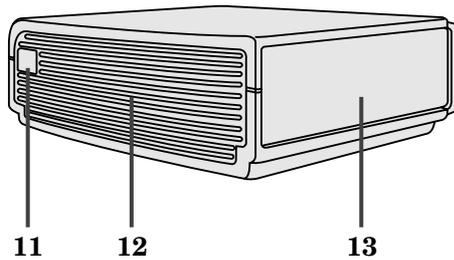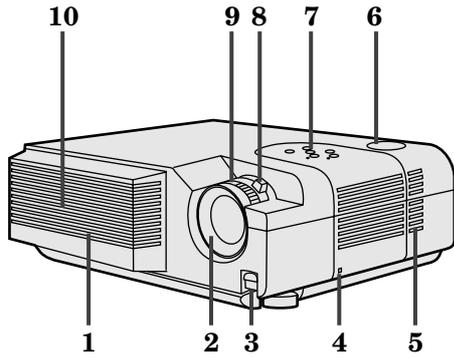
1 Air inlet grille (Front)
2 Lens
3 Foot adjustment buttons
4 Kensington Security Lock Standard connector
5 Air inlet grille (Side)
6 Speaker
7 Control panel
8 Zoom ring
9 Focus ring
10 Remote control sensor (Front)
11 Remote control sensor (Rear)
12 Air outlet grille (Rear)
13 Terminal board

Control panel
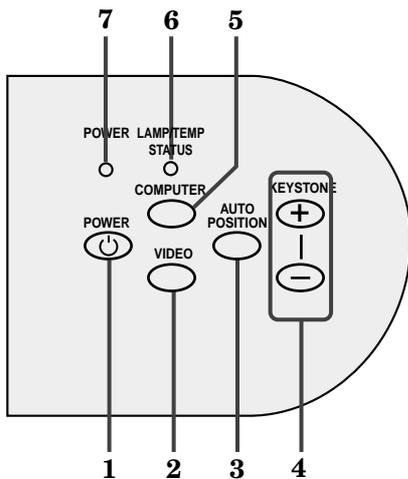
1 POWER button
2 VIDEO button
3 AUTO POSITION button
4 + , – (KEYSTONE) button
5 COMPUTER button
6 STATUS indicator
7 POWER indicator

Terminal board
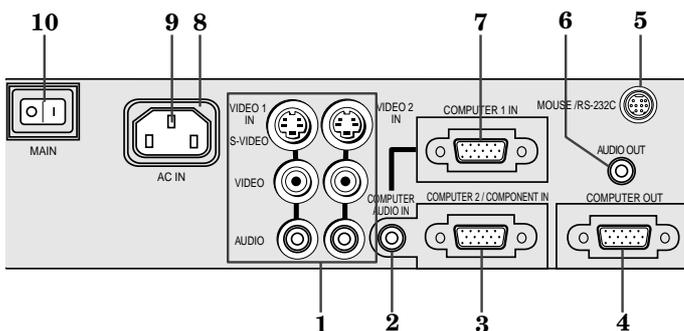
1 Video / Audio input terminals
2 COMPUTER AUDIO IN terminal
3 COMPUTER 2 / COMPONENT IN terminal (D-SUB mini 15P)
4 COMPUTER OUT terminal (D-SUB mini 15P)
5 MOUSE / RS-232C (Mini DIN 9P) terminal
6 AUDIO OUT terminal
7 COMPUTER 1 IN terminal (D-SUB mini 15P)
8 Power jack
9 Ground terminal
10 Main power
   I : ON
   O : OFF

Bottom side
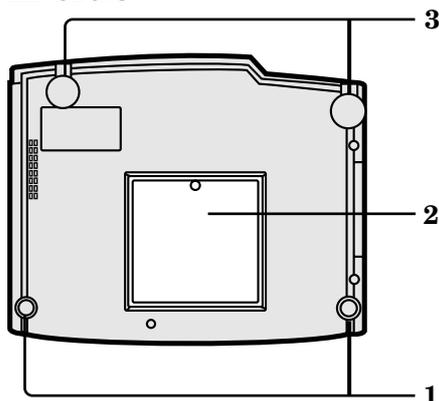
1 **Rear adjustment feet**
2 **Lamp cover**
3 **Front adjustment feet**

Caution:
Do not replace the lamp right after using the projector. The lamp is very hot.

Remote control
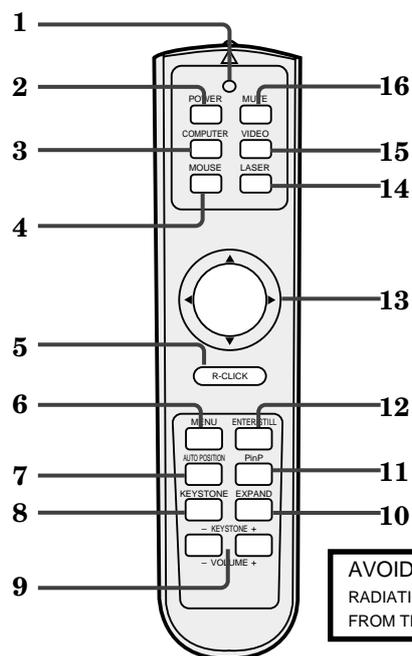
1 **Transmitter indicator**
2 **Power button**
3 **COMPUTER button**
4 **Mouse button**
5 **Right click button (For mouse)**
6 **MENU button**
7 **AUTO POSITION button**
8 **KEYSTONE button**
9 **+ , – (KEYSTONE/VOLUME) buttons**
10 **EXPAND button**
11 **PinP button**
12 **ENTER / STILL button**
13 **Mouse pointer / Direction buttons**
14 **LASER button**
15 **VIDEO button**
16 **MUTE (Audio/Video) button**
17 **Laser aperture**
18 **Left click button (For mouse)**

- **When pressing Mouse button, it illuminates and Direction buttons work as the mouse pointer. Press the Mouse button or MENU button to set off. (Direction buttons work as Direction buttons.)**
- **Pressing LASER button emits the laser beam about 1 minute. Release LASER button and press it again if you wish to emits the laser beam.**

AVOID EXPOSURE -LASER RADIATION IS EMITTED FROM THIS APERTURE.
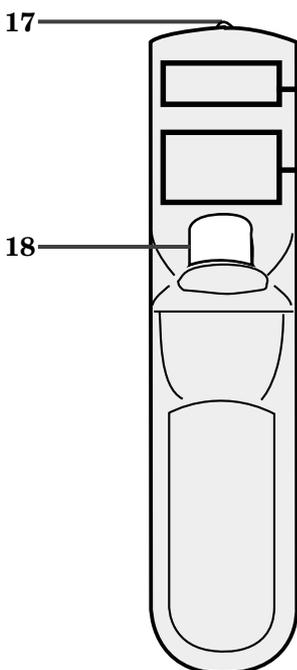
About laser beam
This remote control is class 2 (max. output 1 mW laser diode 640 - 660 nm) laser equipment.
Beam Divergence : 6m distance about 10mm x 10mm (±6mm)

CAUTION

LASER RADIATION
DO NOT STARE INTO BEAM

WAVE LENGTH : 640 - 660 nm
MAX OUTPUT : 1 mW
CLASS 2 LASER PRODUCT
IEC 60825-1:1993+A1:1997

CAUTION :
- Pressing the LASER button provided remote control emits laser beam. Do not look into the beam light directly. Do not point the laser beam at people. Looking the laser beam directly may damage eyesight.
- Use of controls or adjustments or procedures other than those specified herein may result in hazardous radiation exposure.

Using the remote control

Battery installation

Use two AAA size batteries.

1. Remove the back cover of the remote control by pushing the battery compartment door in the direction of the arrow.

2. Load the batteries making sure that they are positioned correctly (+ to +, and - to -).
   • Load the batteries from - spring side, and make sure to set them tightly.

3. Replace the back cover.

1   **2**   **3**
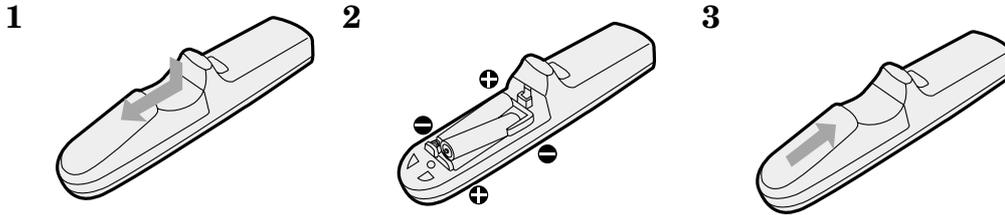
Important:
• Do not combine a new battery with an old one.
• Load batteries in the correct position.
• Do not heat, take apart, or throw batteries into fire.
• Do not try to recharge batteries. Do not use rechargeable batteries.
• If the solution of batteries comes in contact with your skin or clothes, rinse with water. If the solution comes in contact with your eyes, rinse them with water and then consult your doctor.

Operation area

The range for operation is about 10 m (33 feet) when the remote control points to the projector. The distance to the screen back to the projector must be less than 6 m (20 feet). Depending on the type of screen, the effective distance may be different.
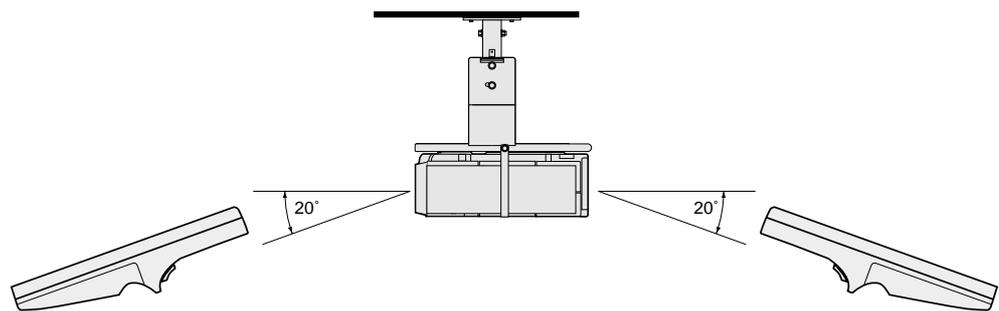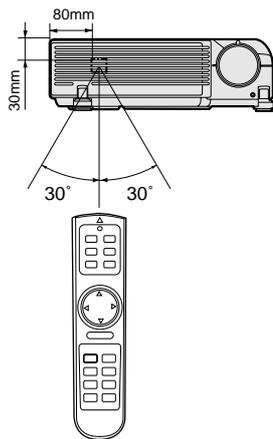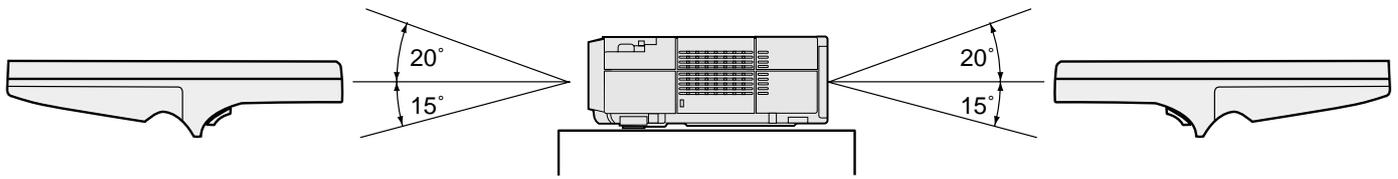
Important:

Avoid direct sunlight or fluorescent light on the remote control sensor. Also keep the distance of more than 2 m between the remote control sensor and fluorescent lamp or the remote control may not work correctly. The remote control may become less effective near an inverter fluorescent lamp. In such a case, put the attached light-shielding seal on of the remote control sensors that is closer to the fluorescent lamp.

Installation

Orientation of the projector

Picture size can be set by changing the distance between the screen and the projector.

Front projection
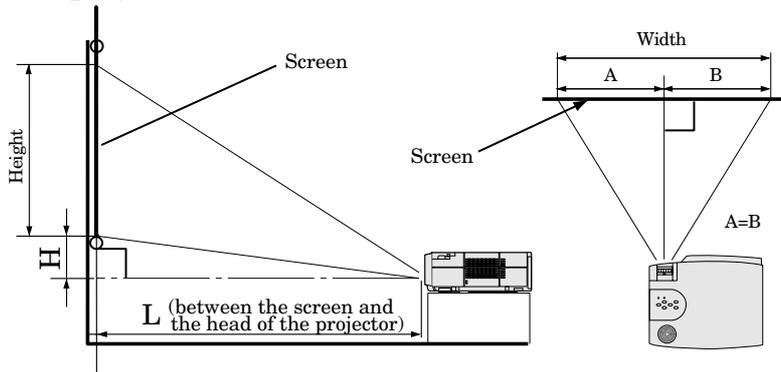
To find the approximate distance between the projector and screen: Multiply the width of the screen x 1.8 (min.) , Multiply the width of the screen x 2.2 (max.).

- Refer to the chart for recommended distances in maximum zoom and minimum zoom.

| Screen			Distance from screen (L) / (approximate)				Height projected image (H)	
			Maximum zoom (WIDE)		Minimum zoom (TELE)			
Diagonal size (inch)	Height (inch)	Width (inch)	(m)	(inch)	(m)	(inch)	(cm)	(inch)
40 "	24 "	32 "	1.3	52	1.6	64	8.7	3.4
60 "	36 "	48 "	2.0	78	2.4	95	13.1	5.1
80 "	48 "	64 "	2.6	104	3.2	127	17.4	6.9
100 "	60 "	80 "	3.3	130	4.0	159	21.8	8.6
150 "	90 "	120 "	4.9	194	6.0	238	32.7	12.9
200 "	120 "	160 "	6.6	259	8.1	318	43.5	17.1
250 "	150 "	200 "	8.2	234	10.1	397	54.4	21.4
300 "	180 "	240 "	9.9	389	12.1	476	65.3	25.7

- The above numbers are approximate, and may be slightly different from the actual measurements.

Front projection, ceiling mount

For ceiling mount, you need the ceiling mount kit. Ask a specialist for installation. For more details, consult your dealer.

- This warranty does not cover damage caused by the use of any unrecommended ceiling mount kit and the installation of the ceiling mount kit at an improper location.
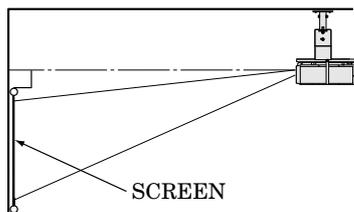
- When using the ceiling mount, set IMAGE RE-VERSE in the INSTALLATION menu to MIR-ROR INVERT. See Page 16.
- Projected images may appear darker when the unit is used as a ceiling installation than when it is used in the tabletop position. This does not signify a product malfunction.

Rear projection

Ask a specialist for installation. For more details, consult your dealer.
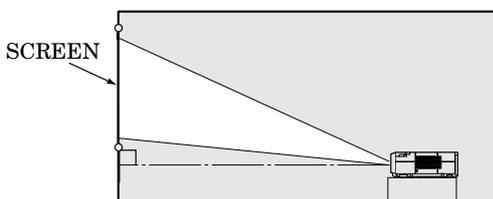
- For rear projection, set IMAGE REVERSE in the INSTALLATION menu to MIRROR. See Page 16.

Caution:
- Placing the projector on a carpet reduces ventilation from the fan at the bottom and might cause problems. Place a hard board or similar item under the projector to facilitate ventilation of the unit.
- Place the projector more than 50cm (20 in.) from the wall to prevent blocking the intake, exhaust slots and ventilation of this projector because hot air comes out of it.
- Do not use the projector under the following circumstances, which may cause fire or electric shock.
  - in a dusty or humid place
  - while the projector is lying sideways
  - near a heater
  - in a kitchen or oily, smoky or damp place
  - in direct sunlight
  - where the temperature is lower than +41°F (+5°C) or higher than +95°F (+35°C)

Important:
- Do not put stress on the lens, as this may cause damage.

Basic connections

This projector can be connected to equipment such as PC, VCRs, video cameras and DVD players.

Important:
* Make sure that your equipment is turned off before connection.
* Plug in firmly and unplug by holding the plug, not by pulling the AC power cord.
* If connected units are set too close to one another, the image may be affected.
* Refer to the user manual of each component for details of connections.

Projector + AV equipment

Important:
* Match the color of video and audio plugs on the AV cable with the connections.
* S-video signals take priority over video signals. If you input both S-video signals and normal video signals at the same time, the normal video input automatically is inhibited.

Connect either one of these.

to S-VIDEO (1or2) IN

to VIDEO (1or2) IN

to AUDIO (1or2) IN

to audio output

to video output

VCR etc.
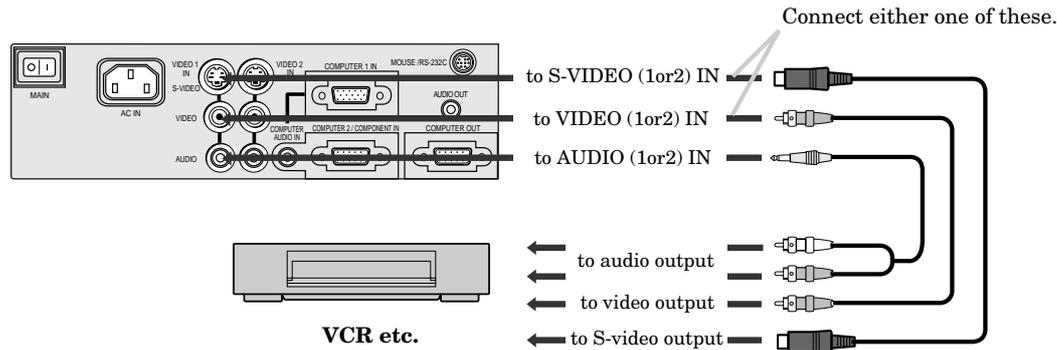
to S-video output

* Speaker output is mono.

Projector + DVD player or HDTV decoder

In the case of a DVD player equipped with a COMPONENT VIDEO output (525i / 625i), connect the DVD player with the COMPUTER 2 / COMPONENT IN connector.

DVD player or HDTV decoder

AUDIO cable

to AUDIO OUT

to AUDIO IN

Y   CB(PB)   CR(PR)

BNC - RCA connector
(optional)

No connection

G   B   R   HD/CS   VD

Mini D-SUB 15 pin-BNC
conversion cable (optional)

to COMPUTER 2 IN
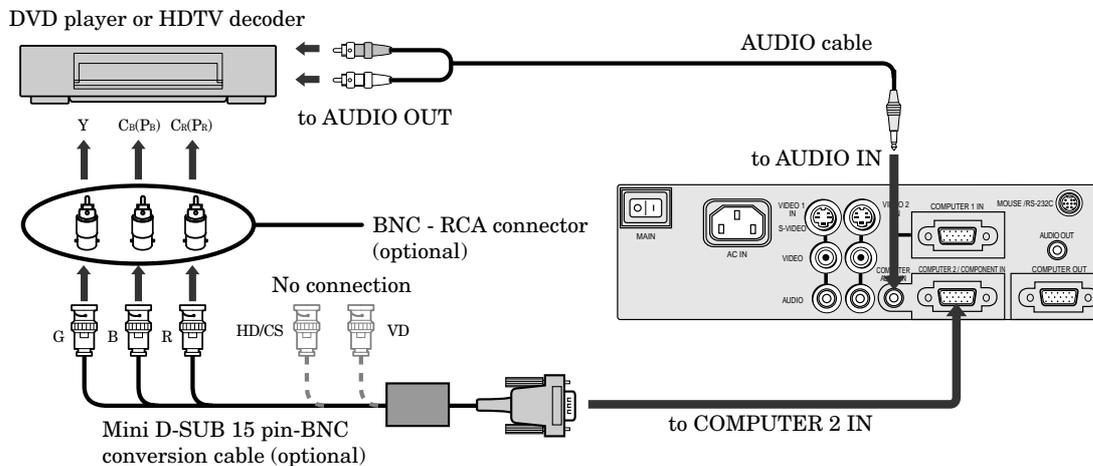
* When a DVD player is connected with the COMPUTER 1 IN connector, the image may not be projected correctly.
* When a 525p signal is inputted, select YC_BC_R/ YP_BP_R for the COMPUTER INPUT in the SIGNAL menu.
* Y, P_B, P_R is an example of the terminal names for a HDTV decoder.
* The terminal name is different depending on the connected equipment.
* Use mini D-SUB 15 pin-BNC conversion cable for connection.
* Some DVD players may not project the image correctly.
* When connecting with HDTV equipment which has R, G, B output, select RGB for the COMPUTER INPUT in the SIGNAL menu.
* A TV60 or TV50 signal corresponds to component video signal only. When the RGB signal with 5 line form is inputted, the image will not be projected correctly.

Projector + Personal computer

RGB cable for PC

to COMPUTER (1or2) IN

computer

to monitor port

to AUDIO IN

to COMPUTER OUT

RGB cable for PC (option)

When outputting to both a
PC monitor and the projector.

to PC audio output

Audio cable (option)
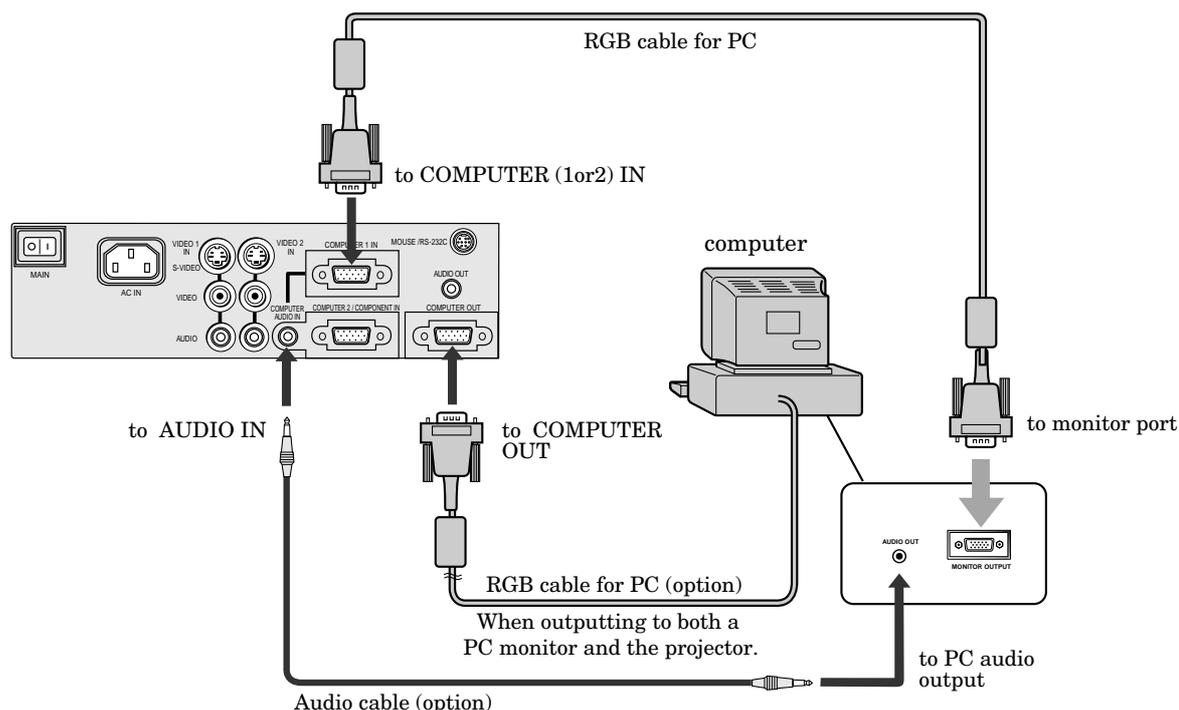
Important:
- When you use a long RGB cable instead of the cable provided, the picture quality may deteriorate.
- Connectors or analog RGB output adapters may be necessary depending on the PC connected to this projector. Please contact your dealer.
- The audio input for this projector is a stereo pin jack. (Speaker output is mono.) Please check the available cable for the audio input terminal of the PC. Some personal computer may not have the audio output terminal.

For using Macintosh
- A monitor output adapter is necessary for a Macintosh if it has no video port. Please contact your dealer.
- A MAC adapter for RGB cable may be necessary depending on the personal computer connected to this projector. Please contact your dealer.

About DDC™ (For COMPUTER 1 IN connector)
The projector complies with VESA™ DDC™ 1/2B (EDID) specification. If your computer provides DDC™ 1/2B (EDID) function, setup will be done automatically. If your system is Windows® 98 or higher, your computer supported in standard. If your system is Windows® 95 or lower, you must down load the driver from our Internet Home Page for use this function. Please contact your dealer or Mitsubishi sales office for more details.

Preparing the projector for operation

Getting ready for projection

1. Connect the power cord provided to the projector.
2. Connect the power cord to the wall power outlet.
3. Remove the lens cap.

Warning:

- Do not look directly into the lens when projector is "ON".
- The lens cap is for protecting the lens. If you leave the power on with the cap on, the cap may be warped. Please remove the lens cap when you turn the power on.
- This projector is equipped with the power cords for both U.S. and Europe. Use the appropriate power cord for your country.
- A three-pin grounding type power plug is used with the projector. Do not remove the grounding pin on the power plug. If you are unable to insert the plug into the outlet, contact your electrician to replace your A/C outlet.
- The supplied power cord for U.S. is used for 120V only. Never connect to any outlet or power supply having a different voltage or frequency. If you connect to the power supply having a different voltage, please use the appropriate power cord.
- Use 100-240V AC 50/60Hz correct voltage otherwise it may lead to fire or electric shock.
- Do not place any objects on the power cord, and keep the projector away from heat sources to avoid breaking the power cord. A broken power cord can cause fire or electric shock.
- Do not revise or alter the power cord otherwise it may cause fire or electric shock.
  Contact your dealer if the cord is broken.

Caution:

- Plug in firmly and unplug by holding the plug, not by pulling the cable out.
- Do not plug in or out with wet hands. It may cause an electric shock.

Adjusting the angle of projection

For the best result, project onto a flat screen with a 90 degree angle to the floor. If necessary, tilt the projector by adjusting the adjustment feet on the bottom of the projector.
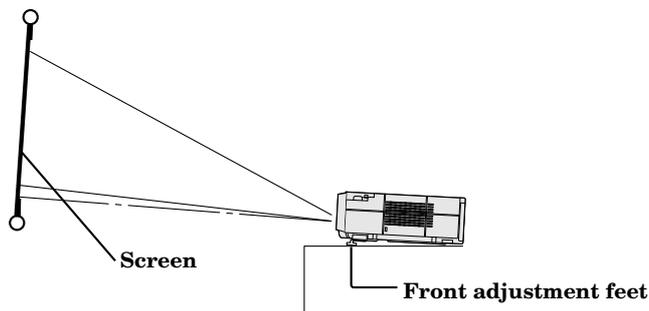
1. Lift the projector to an appropriate angle.
2. Press the foot adjustment buttons, and the front adjustment feet will slide out to their appropriate positions.
3. Release the foot adjustment buttons to fix the feet in those positions.
4. Turn the feet for fine adjustment.
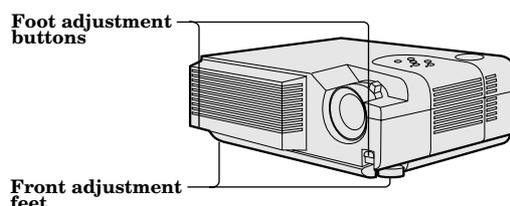
- The projection angle can be adjusted by turning the rear adjustment feet.

After using the projector
5. Put the front adjustment feet back into the projector.

Important:

- When the screen or projector is not placed flatly, the projected image becomes distorted to shape a trapezoid. When the image shape isn't corrected even after adjusting the projector and the screen, adjust the widths of the top and bottom of the image to be equal by pressing the KEYSTONE + or - button. When adjusting by the remote control, press the KEYSTONE button to display the "KEYSTONE CORRECTION" menu first, and adjust the widths by pressing the + or - button.
- Screen on a flat wall with a 90° angle to the floor.
- Align projector to produce a full screen display as illustrated on page 9.
- The distance from the projector to the screen must be compatible with screen size chart on page 9. Note the distance from the screen chart.

To operate projector power ON

2•9

3•7•8

4

MUTE button

AUTO POSITION button

3•7•8

4

AUTO POSITION button

POWER LAMP/TEMP STATUS

COMPUTER

KEYSTONE

POWER

AUTO POSITION

VIDEO
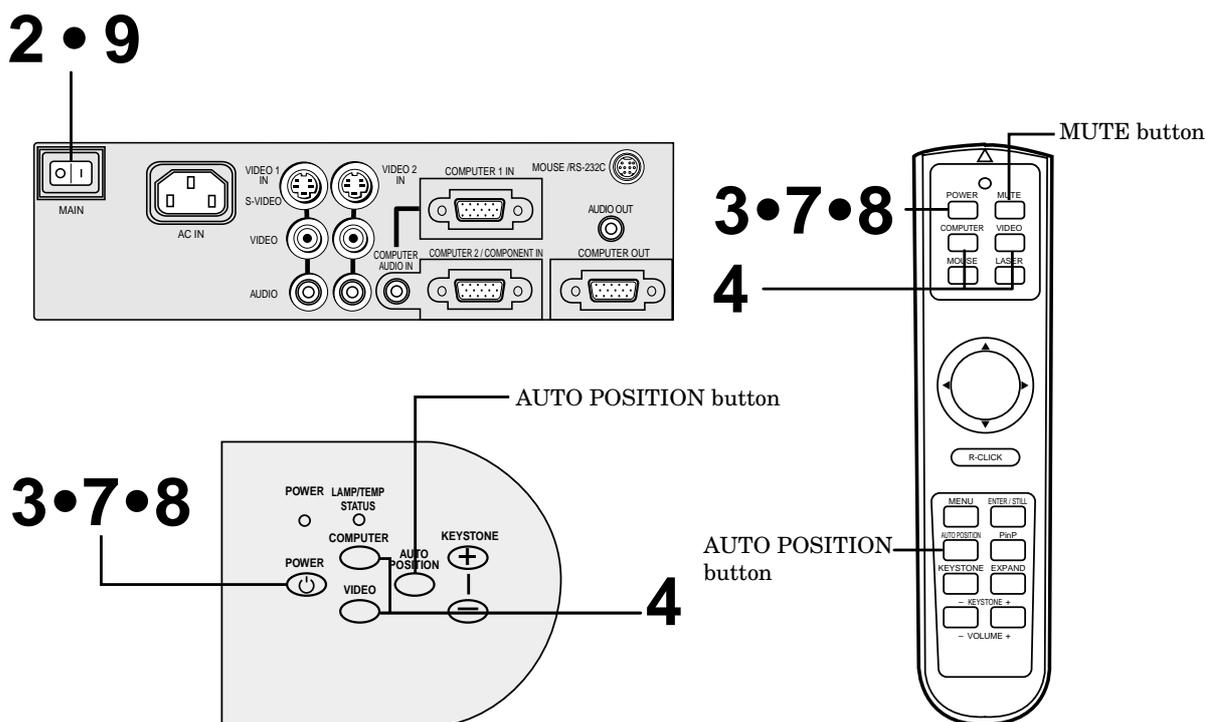
1. Turn on the equipment connected to the projector.

2. Put the projector into standby mode by pressing the main power switch. The POWER indicator lights up red.

3. Turn the projector on by pressing the POWER button. The light source lamp starts warming up, eventually turning completely on.
   - When the light source lamp does not light up, wait until the STATUS indicator is turned off, then press the POWER button again.
   - If the main power switch to the unit is turned off within two minutes of turning off the light source lamp, power will not be applied to the lamp for one minute when the next time the main unit power switch is turned on. When this happens, the STATUS indicator will blink for one minute.

Condition \ Indicator	STATUS	POWER
Stand-by	-	Red
When light source lamp is on	Green	Green
Light source lamp held off temporarily	-	Red

Important:
- A darkened image may be seen right after pressing the POWER button due to warming up of this projector. While warming up, no other commands can be accepted.
- After the power is turned on, the screen may flicker before the lamp operation becomes stable. This is due to the characteristics of the lamp, not a failure of the lamp.
- When the STATUS indicator is blinking red, the lamp should be replaced. Replace the lamp. See pages 22 and 23 .

- The picture might not be of optimum performance in extreme hot or cold conditions. (The projector is not malfunctioning.)

4. Select the desired external input source by using the COMPUTER or VIDEO button.
- The COMPUTER or VIDEO button does not work when MENU is displayed. At this time, the prohibition mark (⊘) appeares on the screen.
- The projector automatically selects the appropriate signal format. The selected signal format is displayed on the screen.
- When selecting the COMPUTER input, the image may flicker. Press the ◀ or ▶ button to adjust the image.

5. Adjust the image size with the zoom ring by turning it.

6. Adjust the focus with the focus ring by turning it.

focus ring

far
tele

near
wide

zoom ring

Turning off the projector

7. Press the POWER button.
   The message "POWER OFF? YES : PRESS AGAIN" appears on the screen.

8. Press the POWER button within 10 seconds again.

- The light source lamp will be turned off.
- When the POWER button is not pressed within 10 seconds, the message will be disappeared.
- Pressing the POWER button second time will shut off the light source lamp, but the exhaust fan continues to operate for 120 seconds to cool down the light source lamp.

9. Turn off the main power switch. When turning off the main switch, the POWER indicator turns off.

- In cases where the main power switch is accidentally turned off when either the intake/exhaust fan or the power source lamp is in operation, allow the unit to cool down for 10 minutes with the power turned off. Repeat step 3 when turning on the power source lamp. If the lamp does not turn on immediately, repeat this step two or three times. Replace the lamp if it should still fail to turn on.

AUTO POSITION button

When the source is selected to COMPUTER and the image is not in the right place, follow as shown below.
1. Set screen to the brightest display as possible (e.g., full-screen display of the "Trash" window).
2. If the screen saver is running, turn off the screen saver.
3. Press the AUTO POSITION button.
- If the image is still not in the right place, adjust the image position by using the SIGNAL menu.

The volume from the speaker

Press the VOLUME + or – button to change the volume from the speaker.
The volume control bar will appear on the screen.
- The volume control bar will disappear about 4 seconds after releasing the volume buttons.
- The volume buttons do not work when MENU selection bar or MENU is displayed.
- The volume from the AUDIO OUT jack is also changed by pressing the VOLUME + or – button on the remote control.

AV mute

Image and audio are temporarily erased with pressing the MUTE button. To restore the image and audio to the normal mode, press the MUTE button again.
- The audio from the AUDIO OUT jack is also muted by pressing the MUTE button.

Caution:

- When you have finished using this equipment, wait 120 seconds for the exhaust fans to stop. Then turn off the main switch and unplug the power cable from the wall outlet, for safety purposes.
- After the lamp is turned off, the lamp cannot be switched on again for 60 seconds as a precautionary measure. It will take another 60 seconds before the STATUS indicator goes off. If you wish to turn on the projector again, wait until the indicator is off then press the POWER button.
- The exhaust fan rotates faster when the temperature around the projector rises.
- When the temperature around the projector becomes too high, the sign "TEMP!!" blinks red on the screen. If the temperature stays too high, the lamp will be shut off automatically.

Menu operation

IMAGE		CONTRAST	± 20		RED	± 30
		BRIGHTNESS	± 20		YELLOW	± 30
		sRGB	ON, OFF		GREEN	± 30
		COLOR MATRIX *1	VIDEO		CYAN	± 30
			COMPUTER		BLUE	± 30
			USER ◘		MAGENTA	± 30
			OFF		SATURATION	± 10
		COLOR TEMP	STANDARD		CONTRAST R	± 15
			LOW		CONTRAST B	± 15
			HIGH		BRIGHTNESS R	± 15
			USER ◘		BRIGHTNESS B	± 15
		TINT *2,*5	± 10			
		COLOR *5	± 10			
		SHARPNESS *5	± 5			

INSTALLATION		AUTO POWER ON	ON, OFF
		AUTO POWER OFF	OFF, 5, 10, 15, 30, 60 min
		SPLASH SCREEN	ON, OFF
		BACK COLOR	BLUE, BLACK
		IMAGE REVERSE	OFF, MIRROR, INVERT, MIRROR INVERT

FEATURE		MENU POSITION	UPPER LEFT, LOWER RIGHT
		EXPAND MODE	EXPAND, REAL
		VIDEO MODE *5	1 - 4
		CINEMA MODE *5,*6	AUTO, OFF
		VIDEO SIGNAL *5	AUTO, NTSC, PAL, SECAM, 4.43NTSC, PAL-M, PAL-N, PAL-60
		LANGUAGE	日本語, English, Español, Deutsch, Français, Italiano, 中文
		RESET ALL	OK ◘

SIGNAL		HORIZ.POSITION	0 - 999	*3		
		VERT.POSITION	0 - 999	*3		
		TRACKING *4	0 - 9999	*3		
		FINE SYNC. *4	0 - 31			
		COMPUTER INPUT *4	RGB, YCBCR / YPBPR			
		ANAMORPHIC	ON, OFF			
		HOLD *4	ON ◘		BEGIN	0 - 15
			OFF		END	0 - 15
		USER	OK ◘		CLAMP POSITION *4	0 - 127	*3
					CLAMP WIDTH *4	0 - 63	*3
					VERT.SYNC	AUTO, OFF
					SHUTTER (U)	0 - 20
					SHUTTER (L)	0 - 20
					SHUTTER (LS)	0 - 20
					SHUTTER (RS)	0 - 20

* 1: The item can not be selected when the sRGB is set to ON.
* 2: The item can not be selected with certain signals.
* 3: Setting range is different with certain signals.
* 4: The item can not be selected when the source is selected VIDEO or S-VIDEO.
* 5: The item can not be selected when the source is selected to COMPUTER.
* 6: The item can not be selected when the VIDEO MODE is not set to 1.

Basic operation

Several settings can be adjusted using Menu.

EXAMPLE: Auto power off time setting

1. Press the MENU button.

    TV60
    IMAGE

2. Press the ◄ or ► button to select the INSTALLA-TION menu.

    TV60
    INSTALLATION

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

    TV60
    INSTALLATION
    AUTO POWER ON   ◄   OFF   ►
    AUTO POWER OFF   ◄   OFF   ►
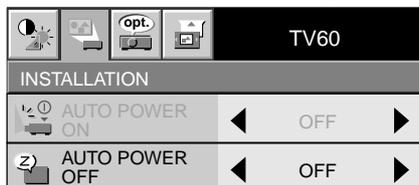
4. Press the ▲ or ▼ button to select AUTO POWER OFF.

    AUTO POWER ON   ◄   OFF   ►
    AUTO POWER OFF   ◄   OFF   ►

5. Press the ◄ or ► button to adjust auto power off time.

    AUTO POWER ON   ◄   OFF   ►
    AUTO POWER OFF   ◄   30min   ►

6. Exit the menu system by pressing the MENU button several times.

- If the menu operation is not working, turn off the main power, wait about 10 minutes, and turn on the main power again.
- The settings with ◘ mark, you should press the ENTER button after selecting.

EN – 15

Menu operation (continued)

① **IMAGE**

CONTRAST .... Adjusts the picture contrast. The contrast becomes higher as the number increases.

BRIGHTNESS .... Adjusts the image brightness. The image becomes brighter as the number increases.

sRGB .... Select ON to display an image emphasizing on the color reproducibility.
- When sRGB is ON, COLOR MATRIX can't be adjusted.
- When sRGB is ON, the image will become darker.
- When COLOR TEMP. is set to other than STANDARD while sRGB is ON, colors won't be reproduced as per the standard value of sRGB.
- Though sRGB can be ON while a signal is input from VIDEO-IN or S-VIDEO IN, reproduced colors won't be in accordance with the sRGB standard value. Use sRGB to suit your color preference.

COLOR MATRIX .... Adjusts the color balance in each color of the image. See page 18.

COLOR TEMP. ... Adjusts the color temperature. See page 18.

TINT .... Adjusts the color balance of the image. The color balance of the image shifts green as the number increases and shifts to purple as the number decreases. (Available only when VIDEO is selected as the source.)
- TINT cannot be adjusted when a TV50 (PAL or SECAM) signal is being displayed.

COLOR .... Adjusts the color intensity of the image. (Available only when VIDEO is selected as the source.)

SHARPNESS ...... Adjusts the image sharpness. The image sharpness rises as the number increases.

IMAGE		TV60
CONTRAST	◀	0 ▶
BRIGHTNESS	◀	0 ▶
sRGB	◀	OFF ▶
COLOR MATRIX	◀	OFF ▶
COLOR TEMP	◀	STANDARD ▶
TINT	◀	0 ▶
COLOR	◀	0 ▶
SHARPNESS	◀	0 ▶

② **INSTALLATION**

AUTO POWER ON .... Select ON to boot up the projector automatically by turning on an externally connected power switch such as a breaker even when the main power switch of the projector is off. Use this setting when the projector is hanging from the ceiling.
- The projector will be in the stand-by mode when the lamp is off. Use the remote control to turn on the lamp.

AUTO POWER OFF .. Set the time elapsed before the projector enters into the stand-by mode when there is no signal present at the selected source.

SPLASH SCREEN ..... Select ON to display the splash screen when the power is turned ON.

BACK COLOR .... Select the color of the background to blue or black, this will be displayed when there is no signal present at the selected source.

IMAGE REVERSE ..... Use to reverse or invert the projected image. Select MIRROR in rear projection. Select MIRROR, INVERT in rear projection with the projector hanging from the ceiling.

INSTALLATION		TV60
AUTO POWER ON	◀	OFF ▶
AUTO POWER OFF	◀	OFF ▶
SPLASH SCREEN	◀	ON ▶
BACK COLOR	◀	BLUE ▶
IMAGE REVERSE	◀	OFF ▶

③ **FEATURE**

MENU POSITION ..... Use to select the position of the menu on the screen, UPPER LEFT or LOWER RIGHT.

EXPAND MODE .. Select the mode for enlarging screen. See page 20.

VIDEO MODE .... Use to select the modes of the high quality line doubler. Select 1 for the Cross Color Suppression mode. Select 2 for DCDi mode. Select 3 for normal high quality line doubler mode. Select 4 for through mode.
- Though square-shaped noise may appear in the projected image when 1 is selected, this is not failure. If it is obtrusive, select other positions than 1.
- A playback signal on a deteriorated videotape or a poor-quality signal may not be projected properly. When projecting such a signal, change the setting of the Video mode and check the projection quality.

FEATURE		TV60
MENU POSITION	◀	UPPER LEFT ▶
EXPAND MODE	◀	EXPAND ▶
VIDEO MODE	◀	1 ▶
CINEMA MODE	◀	AUTO ▶
VIDEO SIGNAL	◀	AUTO ▶
LANGUAGE	◀	English ▶
RESET ALL	◀	OK ↵ ▶

CINEMA MODE .. When ON is selected, the film mode will be automatically activated when a film source signal is inputted. When OFF is selected, the film mode will not be activated.

VIDEO SIGNAL ... When AUTO is selected, the appropriate video format is automatically selected depending on the input signal. If the image isn't displayed correctly, select the desired video format manually.

LANGUAGE .... Use to select the language used in the menus. (日本語 / English / Español / Deutsch / Français / Italiano / 中文)

RESET ALL .... Use to reset the MENU settings (except LANGUAGE).

④ **SIGNAL**

HORIZ. POSITION ....Use to adjust the horizontal position of the image.

VERT. POSITION .....Use to adjust the vertical position of the image.

TRACKING ....Use to avoid image noise such as wide stripes.

FINE SYNC. ....Use to synchronize the projector with PC input signals so that the image is not blurred.

COMPUTER INPUT ......This will be set automatically to match the input signal to component video (YC$_B$C$_R$/YP$_B$P$_R$) or RGB. This can be overridden as required.

ANAMORPHIC...Select ON when playing DVD discs containing data of widescreen images.

HOLD ....Adjusts the image when flagging occurs near the top of the screen.

	XGA60
SIGNAL	
HORIZ.POSITION	◄ 0 ►
VERT.POSITION	◄ 0 ►
TRACKING	◄ 0 ►
FINE SYNC	◄ 0 ►
COMPUTER INPUT	◄ RGB ►
ANAMORPHIC	◄ OFF ►
HOLD	◄ ON ►
USER	◄ OK ►

⑤ **SIGNAL - USER** (Normally, there is no need for adjustments.)

CLAMP POSITION/
CLAMP WIDTH ....If you use something similar, the brighter colors of the projected image may become blurred. In this case, adjust CLAMP POSITION or CLAMP WIDTH.

VERT. SYNC ......Use to adjust the image when its motion does not run smoothly. Select AUTO for normal setting.

SHUTTER(U) .....Use to adjust the image when the noise etc. appears on top part of image.

SHUTTER(L) ......Use to adjust the image when the noise etc. appears on bottom part of image.

SHUTTER(LS)....Use to adjust the image when the noise etc. appears on left side of image.

SHUTTER(RS) ...Use to adjust the image when the noise etc. appears on right side of image.

	XGA60
SIGNAL	
SIGNAL - USER	
CLAMP POSITION	◄ 0 ►
CLAMP WIDTH	◄ 0 ►
VERT.SYNC	◄ AUTO ►
SHUTTER (U)	◄ 0 ►
SHUTTER (L)	◄ 0 ►
SHUTTER (LS)	◄ 0 ►
SHUTTER (RS)	◄ 0 ►

Picture adjustment

Adjusting the image

You can adjust the picture by using the IMAGE menu.

	TV60
IMAGE	
CONTRAST	◄ 0 ►
BRIGHTNESS	◄ 0 ►
sRGB	◄ OFF ►
COLOR MATRIX	◄ OFF ►
COLOR TEMP	◄ STANDARD ►
TINT	◄ 0 ►
COLOR	◄ 0 ►
SHARPNESS	◄ 0 ►

To control the level of white-to-black in the image :
Adjust CONTRAST in the IMAGE menu. Press the
► button to increase the contrast and the ◄ button
to reduce it.

To control the light level of the image :
Adjust BRIGHTNESS in the IMAGE menu. Press
the ► button to lighten the image and the ◄ button
to darken the image.

To adjust the red-green color balance of the image :
Adjust TINT in the IMAGE menu. Press the ►
button to increase the amount of red in the image
and the ◄ button to increase the amount of green in
the image.

To determine the intensity of the color :
Adjust COLOR in the IMAGE menu. Press the ►
button to increase the amount of color in the image
and the ◄ button to decrease it.

To adjust the detail and clarity of the image :
Adjust SHARPNESS in the IMAGE menu. Press the
► button to make the picture seem sharper and the
◄ button to make it softer.

Color matrix

This feature adjusts the color balance of the primary
colors (red, green, blue), and secondary colors (yellow,
cyan, magenta). You can use the color matrix adjust-
ment to emphasize a specific color without changing
the appearance of any of the other colors.

1. Select COLOR MATRIX in the IMAGE menu.

2. Press the ◄ or ► button to select USER▣ .

3. Press the ENTER button.

COLOR MATRIX	
RED	◄ 0 ►
YELLOW	◄ 0 ►
GREEN	◄ 0 ►
CYAN	◄ 0 ►
BLUE	◄ 0 ►
MAGENTA	◄ 0 ►
SATURATION	◄ 0 ►

4. Press the ▲ or ▼ button to select the desired color.
   • If you wish to adjust the color intensity of the
     image, select SATURATION.

5. Press the ◄ or ► button to adjust the color balance
   of the color.

6. Repeat steps 4 and 5 for more adjustments.

7. Exit the menu system by pressing the MENU but-
   ton several times.

• When using the setting which has been already
  prepared, select desired position VIDEO or COM-
  PUTER in step 2. When the source is selected to
  VIDEO or S-VIDEO, VIDEO will be selected auto-
  matically. When the source is selected to COM-
  PUTER, COMPUTER will be selected automati-
  cally.

• When not using Color matrix adjustment, select
  OFF in step 2.

Color temperature

1. Select COLOR TEMP. in IMAGE menu.

2. Press the ◄ or ► button to select USER▣.

3. Press the ENTER button.

COLOR TEMP- USER	
CONTRAST R	◄ 0 ►
CONTRAST B	◄ 0 ►
BRIGHTNESS R	◄ 0 ►
BRIGHTNESS B	◄ 0 ►

4. Press the ▲ or ▼ button to select the desired item.

5. Press the ◄ or ► button to adjust the item.

6. Repeat steps 4 and 5 for more adjustments.

7. Exit the menu system by pressing the MENU but-
   ton several times.

About color temperature
The appearance of white can be affected by adjusting the
color temperature. With low color temperature, white
appears reddish and with high color temperature white
appears to become more bluish. The color temperature
can be manually controlled by adjusting the red and
blue contrast level.
To set the color temperature high:
Set the contrast B (Blue) to a high number and the
contrast R(Red) to a low number.
To set the color temperature low:
Set the contrast B (Blue) to a low number and the
contrast R(Red) to a high number.

Adjustment from personal computer

This projector should automatically display the full computer image on the projection screen. However, with some computers signals this may not occur, in this case press the AUTO POSITION button. If the images are still not projected correctly, use the MENU display to adjust the projected images.

	XGA60
SIGNAL	
HORIZ.POSITION	◀ 0 ▶
VERT.POSITION	◀ 0 ▶
TRACKING	◀ 0 ▶
FINE SYNC	◀ 0 ▶
COMPUTER INPUT	◀ RGB ▶
ANAMORPHIC	◀ OFF ▶
HOLD	◀ ON ▣ ▶
USER	◀ OK ▣ ▶

Image moved to right or left :
Adjust HORIZ. POSITION in the SIGNAL menu. Press the ▶ button to move the image to left. Press the ◀ button to move the image to right.

Image moved to up or down :
Adjust VERT. POSITION in the SIGNAL menu. Press the ▶ button to move the image to upward. Press the ◀ button to move the image to down.

Image flickers / Image is slightly blurred :
Adjust FINE SYNC. in the SIGNAL menu.

	XGA60
SIGNAL	
SIGNAL - USER	
CLAMP POSITION	◀ 0 ▶
CLAMP WIDTH	◀ 0 ▶
VERT.SYNC	◀ AUTO ▶
SHUTTER (U)	◀ 0 ▶
SHUTTER (L)	◀ 0 ▶
SHUTTER (LS)	◀ 0 ▶
SHUTTER (RS)	◀ 0 ▶

Wide stripes appear :
Adjust CLAMP POSITION or CLAMP WIDTH in the SIGNAL - USER menu.

Noise appears on right or left side of image :
Adjust SHUTTER (LS), SHUTTER (RS) in the SIGNAL - USER menu.

Noise etc. appears on top or bottom part of image :
Adjust SHUTTER (U), SHUTTER (L) in the SIGNAL - USER menu.

Top part of image curves :
Change the setting of HOLD in the SIGNAL menu. Select ON▣, press the ENTER buttun and adjust BEGIN or END for image which top part is the least curved.

Image does not move naturally :
Adjust VERT. SYNC of the menu in the SIGNAL - USER menu. Select AUTO for normal setting.

• Do not change any other items in the SIGNAL - USER menu for normal operation.

Simple adjustment method
1. Select HORIZ. POSITION in SIGNAL menu.

2. Press the ◀ or ▶ button to adjust the horizontal start position (the left side of image).

3. Select TRACKING in SIGNAL menu.

4. Press the ◀ or ▶ button to adjust the horizontal end position (the right side of image).

5. Repeat steps 1 to 4 for fine adjustment.

6. Select VERT. POSITION in SIGNAL menu.

7. Press the ◀ or ▶ button to adjust the vertical start position (the top end of image).

Advanced features for presentation

Expand

By pressing the EXPAND button on the remote control, you can magnify the detailed image of the picture.

Using the Expand mode

1. Press the EXPAND button.
- You can magnify different areas of the active picture by pressing the ▲, ▼, ◀, ▶ button.
- You can change the magnification of the zoomed area by pressing the + or - button.

2. Press the EXPAND button on the remote control again.
   The normal screen display will appear on the screen.

- **Display enlargement does not work with video input or S-video input.**
- The EXPAND mode will not work with certain signals.

REAL screen display

You can view the screen displaying the picture as its original size (native resolution display).

Setting the Expand mode for REAL screen display

1. Press the MENU button.

2. Press the ◀ or ▶ to select the Feature menu.

3. Press the ENTER button.

4. Press the ▲ or ▼ button to select Expand Mode.

5. Press the ◀ or ▶ to set the EXPAND to REAL.

Expand Mode
(EXPAND)   (REAL)

Zooming   Native resolution
image   display
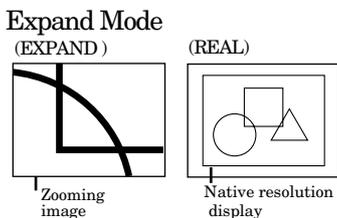
6. Press the MENU button twice to exit the menu system.

Viewing the REAL screen display

1. Press the EXPAND button.

2. Exit the REAL mode, by pressing the EXPAND button again.
   The normal screen display will appear on the screen.

- **Display enlargement does not work with video input or S-video input.**
- During REAL mode, Press the ◀ or ▶ buttons for fine adjustment.
- During REAL mode, the ▲ and ▼ buttons are not working. At this time, the prohibition mark (⊘) appears on the screen.
- The expanding rate cannot be changed by pressing either the + or - button. They are working for volume adjustment.

Picture in Picture (PinP)

One of the special features of this unit is the picture-in-picture (PinP) mode. PinP allows you to view different sources at the same time.

Using the PinP mode

1. Press the PinP button on the remote control.
   When the image from the COMPUTER IN terminal is displayed on the screen, the image from VIDEO IN or S-VIDEO IN terminal is displayed as sub-image.
- You can change the input source of the sub image by pressing the VIDEO button.
- When the COMPUTER button is pressed, the input source of the main image will be changed and the sub image will disappear.
- When the image from the VIDEO IN or S-VIDEO IN terminal is displayed on the screen, the PinP will not work.
- The PinP mode will not work with certain signals.

To change frame position
2. Press the ◀ or ▶ buttons on the remote control.

3. Press the PinP button on the remote control again.
   The sub image will disappear.

- In PinP mode, the audio of the Main image is output.
- In PinP mode, if the signal of the Main image is lost, the sub image will disappear.

Still

How to stop the picture temporarily (still picture).
1. Press the STILL button on the remote control.
   The picture will be freezed temporary.

To resume picture activity.
2. Press the STILL button on the remote control again.

Mouse remote control

By connecting to personal computer through the USB or PS/2 port, you can operate your computer with the projector remote control.

Connection

**Projector + PC through USB connector**

to MOUSE / RS-232C terminal   USB adapter cable   to USB port

Mini DIN 9P   USB 4P (type A)
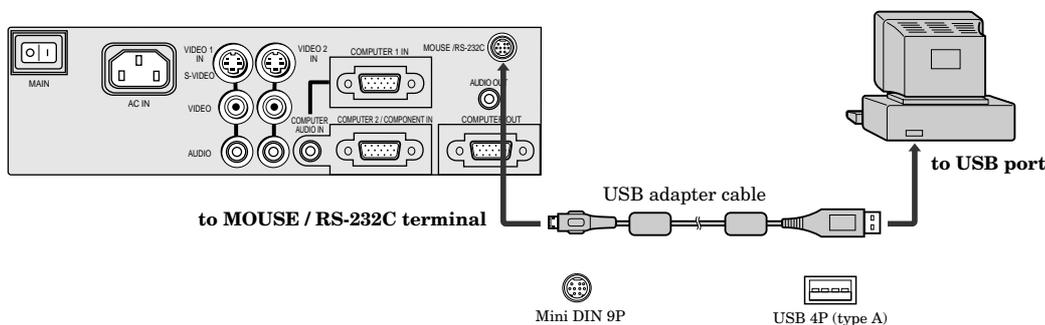
- Only PCs that support a USB mouse can be operated in this way. If your system is Windows® 98 or higher, your computer will support USB as standard. If your system is Windows® 95 or lower, please contact your dealer. If your computer is Macintosh with USB port, you can use this function.
- When the lamp is turned ON, the computer connected with the USB cable may not work correctly. In this case, restart the projector and the computer. If possible, you should connect the USB cable after the lamp is turned ON.

Projector + PC through PS/2 connector

to MOUSE / RS-232C terminal   PS/2 adapter cable   to mouse (PS/2) port

Mini DIN 9P   Mini DIN 6P
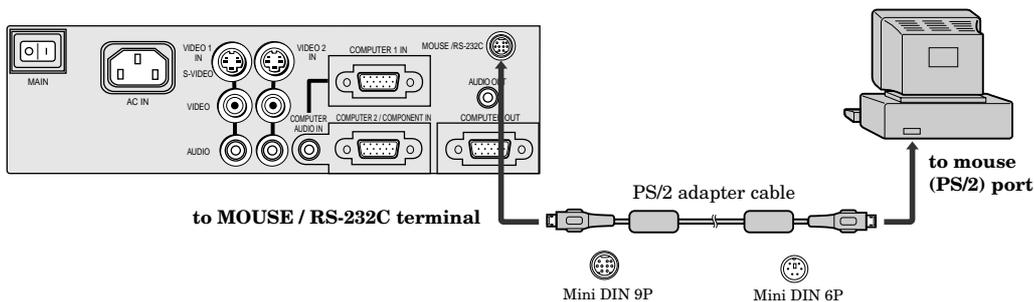
- Turn off the PC and the projector before connecting to the PCs PS/2 port. If you connect the PS/2 cable when the personal computer is on, the remote control mouse may not work. In that case, turn the projec-tor on, then restart the personal computer.
- When you use an extension cable, the function may not work correctly.

Operation

Mouse
When pressing this button, it illuminates. Mouse pointer/ direction button operates as mouse pointer.

Mouse pointer
Use to move the cursor on the image, instead of the computer mouse.

Right click
This operates in the same way as the right button on the computer mouse.

Left click
This operates in the same way as the left button on the computer.
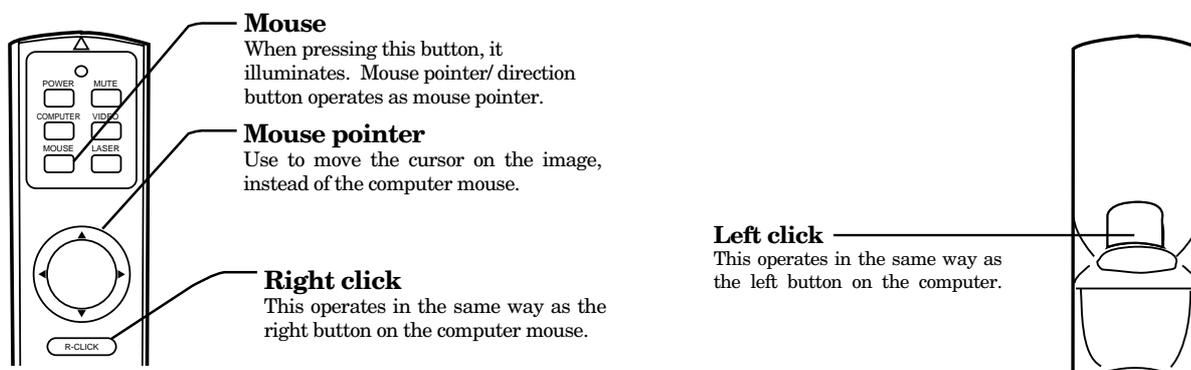
- When L/R click buttons and the mouse button are not used for 6 seconds, the mode will be changed to the normal mode automatically.

Lamp replacement

When the lamp no longer functions, replace it with a new one.

Caution:
- Do not remove the lamp immediately after turning off the projector, the high temperature of the lamp can burn you.
- For lamp replacement, press the power button to power off, then wait for 120 seconds in stand-by mode to allow the lamp to cool. Then turn off the main switch, unplug the power cord from the outlet, and wait one hour so that the lamp is cooled to the touch.
- Do not remove the lamp except for replacement. Careless treatment can cause injury or fire.
- Do not touch the lamp element directly. It may break and cause you to injure or burn yourself.
- Be sure not to drop the lamp lid screw into the projector. Also be sure not to insert metal or any flammable objects, it may cause fire or electric shock. If any objects are inserted, please unplug and contact your dealer.
- Install the lamp securely, failure may cause a fire.
- If the light bulb part breaks, some small glass fragments may fall out through the small cooling grille, and stick to the inside of projector or the lamp box. When taking the lamp out, make sure to turn over the projector and hold the handle of the lamp box to avoid injury from the glass fragments.
- Never shake the lamp or hold it in front of your face after removingthe lamp box. The glass fragments may fall out and cause injuries to your eyes and so on.

1. Gently turn the projector over.
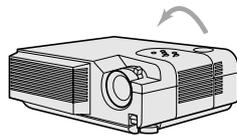
2. Loosen the screws of the lamp lid (a) using a phillips screw-driver (+), and remove the lid.
- Remove the lamp cover in the direction of the arrow as indicated.
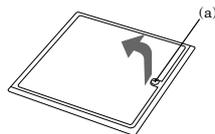
3. Loosen screws (b) using a phillips screwdriver (+).

4. Pull up the handle.
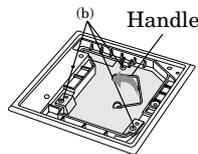
5. Hold onto the projector by the handle as you pull out the lamp.
  - Pull out the lamp straight upward.
  - Pull the lamp out of the projector slowly. Should the light bulb be broken, glass fragments will spill out if the lamp is pulled out too quickly.
  - Once the lamp has been removed, do not spill liquid on it, place it near flammable objects or where children can touch it. Otherwise, it may cause injury or fire.
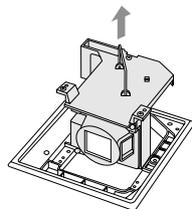
6. Insert the new lamp securely into the projector body in the right direction.
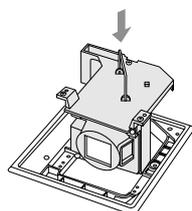
7. Put the handle back to the holding point.
  - Make sure that the handle is locked.
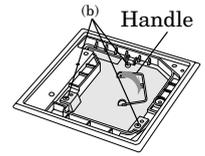
8. Tighten up the screws (b) using a phillips screwdriver (+).

9. Tighten up the screws of the lamp lid (a) using a phillips screwdriver (+).
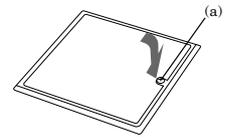
How to reset the operation time meter
Plug in the power cord, turn on the main power switch, and reset lamp time by pressing the AUTO POSITION button and POWER button for 3 seconds simultaneously.
- Make sure that the STATUS indicator flashed twice and the operation time meter has been reset.

Caution:
- Do not spill liquid on the lamp or place it near flammable objects or where children can touch it. Otherwise, it could cause injury or fire.
- Be sure that the projector guide is firmly inserted between the right and left lamp guides.

Important:
- The projector will not turn on if you do not secure the lamp lid.
- You must reset the **operation time meter** after you replace the lamp.
- Do not reset the operation time meter unless the lamp has been replaced.

Interval of the lamp replacement
The expected lamp lifetime is about 1,500 hours of operation. However, the lamp life may differ according to the operat-ing environment and may be shorter than 1,500 hours. Decreases in brightness will indicate that the projector lamp needs to be replaced. When lamp operation time exceeds 1,000 hours, the indicator will flash alternately between green and red (while the lamp is in operation; when the lamp is not in operation, the STATUS indicator will appear red only). When the lamp has been used for about 1,400 hours, the message "LAMP!!." will appear on the screen for one minute everytime the power is turned on. When the lamp has been used for about 1,500 hours, the projector will automatically shut off for safety and the power and STATUS indicators light will be red. The projector cannot be used until the lamp has been replaced and operation timer has been reset.

Caution:
- The lamp is fragile. If broken, be careful not to cut yourself with glass fragments.
- The replacement span of the lamp depends on the environment. For replacement lamps, please contact your dealer.

The projector automatically shuts off when the lamp life exceeds 1,500 hours and cannot be used until the lamp is replaced and the internal timer is reset.

Indicators

The projector has two LED Indicators which show the working condition of the projector.
The below table offers solutions to possible problems. If a problem persists, turn the projector off and consult your dealer.

Power indicator

STATUS indicator

POWER LAMP TEMP
STATUS
COMPUTER KEYSTON
POWER AUTO POSITION
VIDEO
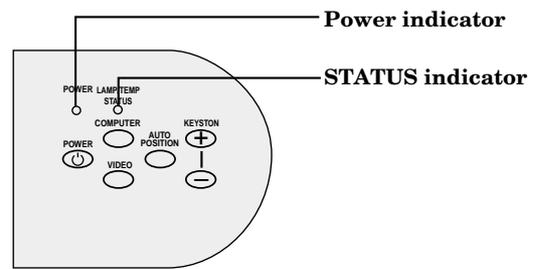
Normal condition

Power	STATUS	CONDITION	Notes
Steady red	○ Off	Stand-by	
Steady green	○⇄☀ Blinking green	Lamp stand-by (about for 1 minute)	The power button cannot be used to switch ON and OFF
Steady green	☀ Steady green	The POWER is ON. (Normal condition)	

Abnormal condition

Power	STATUS	CONDITION	POSSIBLE SOLUTIONS
Steady green / Steady red	○⇄☀ Blinking orange	Unusual temperature • The ventilation slits or air filter is clogged with dust or debris. • The room temperature is too high. • The filter is dirty.	• Remove the object from the ventilation slits. • Relocate the projector to a cooler place. • Clean the filter.
Steady red	○⇄☀ Blinking green	The protection circuit is working or the lamp is in an abnormal condition.	• Wait until the STATUS indicator is turned off, then press the POWER button. • If the above operation is not effective, replace the lamp.
Steady green	☀⇄☀ Blinking green/red	Lamp duration warning. (Lightning duration total about 1, 000 hours. When the POWER is ON.)	Replace the lamp. Exchange with a new lamp if the same problem recurs.
Steady red	○⇄☀ Blinking red	Lamp duration warning. (Lightning duration total about 1, 000 hours. When the POWER is OFF.)	
Steady red	☀ Steady red	Lamp duration warning. (Lightning duration total about 1,500 hours.)	
☀⇄☀ Blinking green/red	○ Off	The lamp cover is not closed.	Close the cover correctly.
☀⇄☀ Blinking green/red	☀ Steady or ○⇄☀ Blinking	Abnormal.	Contact your dealer.

Maintenance

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

Cleaning the projector and the ventilation grille

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

To protect the surface of the projector from fading or deteriorating:
• Do not spray insecticide on or inside the projector.
• Do not use benzine or thinner to clean it.
• Do not let rubber or plastic materials come into contact with the projector.

Cleaning the lens

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

Troubleshooting

The following offers solutions to some of the common problems you may encounter. We suggest that you consult this chart before contacting your dealer.

PROBLEMS	CAUSE	POSSIBLE SOLUTIONS
The power is off.	• The air inlet grille, outlet grille or air filter is clogged with dust or some other obstruction. **POWER indicator does not light up.** • Power cord is unplugged from the outlet. • Power cord is disconnected from the projector. • The main switch is turned off. • The lamp lid is open. **Power indicator blinks red.** • The projector has been turned on again too soon after having been turned off. • When the power switch was turned off while the fan was running, during or after lamp operation. • The room temperature is too high. (Does the STATUS indicator show an unusual condition?) • Lamp is no longer working. **POWER indicator blinks between red and green.** • The lamp cover is not closed. • When the STATUS indicator is on or blinking, the main unit requires repairs.	• Remove the obstruction. • Plug the power cord into the outlet. • Insert the power cord into the projector. • Turn the main switch on. • Close the lamp lid. • Wait for the lighting sequence. • Turn the power switch on and off several times. • Refer to "Indicators" on page 23. • Replace the lamp with a new one. • Close the cover correctly. • Contact your dealer.
No picture appears on the screen.	• Lens is covered by lens cap. • When the STATUS indicator is on or blinking, the main unit requires repairs. • The equipment connected to this projector is not turned on. • Other equipment is not connected properly. • The input source is not selected correctly.	• Take the lens cap off. • Replace the lamp with a new one. • Turn on the connected equipment. • Confirm the connections. • Select the correct source according to the equipment connected to this projector.
The image is turned off.	• The air inlet grille, outlet grille or air filter is clogged with dust or obstructed. (In this case, the STATUS indicator does not light up.)	• Remove the obstruction and turn off the main power switch. After about 10 minutes, turn the projector on.
The image is distorted.	• The projector is not at a right angle to the screen.	• Adjust the angle of the projector to make a right angle to the screen. See page 12.
The image is dark.	• Brightness, tint and color are not adjusted correctly.	• Adjust brightness, tint and color correctly.
The image is blurred.	• The projecting distance is beyond the focused area. • Lens is dirty. • Screen size exceeds screen size specifications. • Brightness and contrast are not adjusted correctly. • FINE adjustment is not made correctly. • Tracking is not adjusted. • The projector is not at a right angle to the screen.	• Adjust the projecting distance. See page 9. • Clean lens. • Use a screen size to within 40" to 300". • Adjust brightness, contrast. • Make FINE adjustment. • Adjust tracking. • Adjust the angle of the projector to make a right angle to the screen. See page 12.
The image is distorted on the screen and noise is heard.	• The cable for connection with other equipment is not plugged securely into the terminal. • The projector is installed too close to other equipment.	• Plug the connecting cable securely into the terminal. See pages 10-11. • Increasethe distance between the projector and other equipment.
No sound is heard.	• Volume is not turned up. • Connection to other equipment is not made correctly.	• Turn up the volume. • Check connections. See pages 10-11.
Nothing is displayed on the PC monitor.	• The PC monitor is not turned on.	• Turn on the monitor.
Warm air comes out of the exhaust vents.	• This is typical of the projector.	
Adjustments cannot be made.	• The operation is incorrectly made due to noise or interference.	• Turn off the main power, wait about 10 minutes, and turn on the main power again.
⊘ is displayed.	• This mark is displayed when an invalid operation is executed. This is not failure.	

Specifications

Type	DLP™ DATA projector
Model	XD200U | SD200U
Rated power supply	AC100V - 240V, 50 / 60Hz
Rated input	2.8 A
Display Technology	0.7" Single chip Digital Micromirror Device (DMD) with R,G,B,W color wheel
Resolution	1,024 × 768 (Total 786,432 pixels), 500 Video lines (XD200U)
	800 × 600 (Total 480,000 pixels), 500 Video lines (SD200U)
Colors	16,770,000 colors
Projection lens	F 2.5 - 3.0 f = 23.2 mm - 28.4 mm
Light source lamp	210 W NSH
Picture size	40 inch - 300 inch (aspect ratio 4:3)
PC compatibility	Resolution : 640 x 400 - 1,024 x 768 + Compressed 1,280 x 1,024 (XD200U)
	: 640 x400 - 800 x 600 + Compressed 1,024 x 768 (SD200U)
	Sync on Green available
Video compatibility	NTSC / NTSC 4.43 / PAL (including PAL-M, N) / SECAM, PAL-60
	DVD (Component) / HDTV (1080i) / 720p / (525p)
Audio output	2 W mono
Speaker	Round type (8Ω 2W)
S-video input	Luminance signal: Vp-p=1.0V 75Ω (negative sync.)
	Chroma signal: Vp-p=0.286V 75Ω (burst signal)
Video input	Vp-p=1.0V 75Ω (negative sync.)
Audio inputs	350 mVrms, 10kΩ or more
Analog RGB input (mini D-SUB 15P)	RGB: Vp-p=0.7V 75Ω
	YC_BC_R: Y: Vp-p=1.0V (negative sync.) C_BC_R: Vp-p=0.7V
	HD/CS : TTL level (positive or negative)
	VD : TTL level (positive or negative)
Control connector	Serial (DIN 9 pin female connector) RS-232C standards
Outside dimensions	300 mm × 90 mm × 245 mm (11.8 inch × 3.5 inch × 9.6 inch)
	(width × height × depth) Legs are not included.
Weight	Approx. 3kg
Length of power cord	2.9 m (9.5 feet)
Temperature, humidity (performance guarantee)	+41°F (+5°C) - +95°F (+35°C), 30 - 90%

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 Kensington System for instructions on how to use it to secure the projector. Please contact to Kensington Technology Group as shown below.

Kensington Technology Group
2855 Campus Drive
San Mateo, CA 94403, U.S.A.

Phone : (650)572-2700   Fax : (650)572-9675

Specifications (continued)

Connectors

PC analog RGB input

Use to input video signals (analog RGB) of a personal computer.
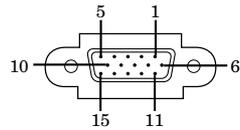
(Pin assignment of Mini D-SUB 15P jack)

PIN NO.	SPEC	PIN NO.	SPEC	
1	R(RED)/C$_R$	9	–	
2	G(GREEN)/Y	10	GROUND	
3	B(BLUE)/C$_B$	11	GROUND	
4	GROUND	12	DDC-DATA	*1
5	GROUND	13	HD/CS	
6	GROUND	14	VD	
7	GROUND	15	DDC-CLK	*1
8	GROUND			

*1) For COMPUTER 1 IN

RS-232C input

Use to control the projector with the personal computer, or control the personal computer with remote control. Use the RS-232C cable (Mini DIN 9P-D-SUB 9P) for the connection. For more details, consult your dealer.
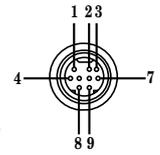
PIN NO.	NAME	I/O
1	RXD	IN
2	USB -	OUT
3	USB Vcc	IN
4	GND	–
5	PS/2 Vcc	IN
6	PS/2 CLK	OUT
7	TXD	OUT
8	PS/2 DATA	OUT
9	USB +	OUT

Dimensional drawings (mm)
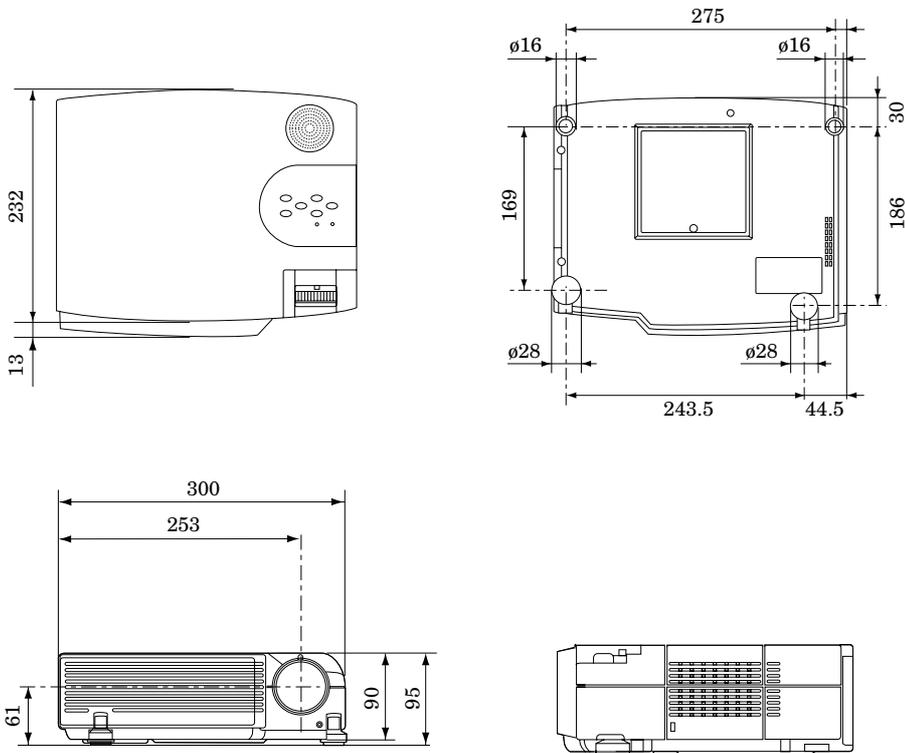
What's included in the box

2	AC power cord	246C383-10	1	USB adapter cable	246C428-10
		246C383-20	1	Remote control	939P892-10
1	Video cable	246C426-10	1	Light-shielding seal	620D070-10
1	S-Video cable	246C431-10	1	User manual	871D349-10
1	Audio cable	246C425-10	1	Quick reference card	857B057-10
1	RGB cable for PC	246C430-10	2	Battery for remote	–
1	PS/2 adapter cable	246C427-10	1	Carrying case	772P037-10

Replacement part
(Option / Not included in the box)

Spare Mercury lamp   499B029-10
                             (VLT-XD200LP)

Specification of RGB signals in each computer mode of the projector (For XD200U)

Signal mode	resolution (H x V)	horizontal frequency (kHz)	Vertical frequency (Hz)	Normal mode (H x V)	Real mode (H x V)
TV60	–	15.73	59.94	1024 x 768	–
TV50	–	15.63	50.00	1024 x 768	–
525p	–	31.47	59.94	1024 x 768	–
1080i	–	33.75	60.00	1024 x 576	–
720p	–	45.00	60.00	1024 x 576	–
PC98	640 x 400	24.82	56.42	1024 x 640	640 x 400
CGA70	640 x 400	31.47	70.09	1024 x 640	640 x 400
CGA84	640 x 400	37.86	84.14	1024 x 640	640 x 400
CGA85	640 x 400	37.86	85.08	1024 x 640	640 x 400
VGA60	640 x 480	31.47	59.94	1024 x 768	640 x 480
VGA72	640 x 480	37.86	72.81	1024 x 768	640 x 480
VGA75	640 x 480	37.50	75.00	1024 x 768	640 x 480
VGA85	640 x 480	43.27	85.01	1024 x 768	640 x 480
SVGA56	800 x 600	35.16	56.25	1024 x 768	800 x 600
SVGA60	800 x 600	37.88	60.32	1024 x 768	800 x 600
SVGA72	800 x 600	48.08	72.19	1024 x 768	800 x 600
SVGA75	800 x 600	46.88	75.00	1024 x 768	800 x 600
SVGA85	800 x 600	53.67	85.06	1024 x 768	800 x 600
XGA43i	1024 x 768	35.52	86.96	1024 x 768	1024 x 768
XGA60	1024 x 768	48.36	60.00	1024 x 768	1024 x 768
XGA70	1024 x 768	56.48	70.07	1024 x 768	1024 x 768
XGA75	1024 x 768	60.02	75.03	1024 x 768	1024 x 768
XGA85	1024 x 768	68.68	85.00	1024 x 768	1024 x 768
SXGA70a	1152 x 864	63.85	70.01	1024 x 768	1024 x 768
SXGA75a	1152 x 864	67.50	75.00	1024 x 768	1024 x 768
SXGA85a	1152 x 864	77.49	85.06	1024 x 768	1024 x 768
SXGA60b	1280 x 960	60.00	60.00	1024 x 768	1024 x 768
SXGA75b	1280 x 960	75.00	75.00	1024 x 768	1024 x 768
SXGA43i	1280 x 1024	46.43	86.87	1024 x 768	1024 x 768
SXGA60	1280 x 1024	63.98	60.02	1024 x 768	1024 x 768
SXGA75	1280 x 1024	79.98	75.03	1024 x 768	1024 x 768
MAC13	640 x 480	35.00	66.67	1024 x 768	640 x 480
MAC16	832 x 624	49.72	74.55	1024 x 768	832 x 624
MAC19	1024 x 768	60.24	75.02	1024 x 768	1024 x 768
MAC21	1152 x 870	68.59	74.96	1024 x 768	1024 x 768
HP75	1024 x 768	62.94	74.92	1024 x 768	1024 x 768
HP72	1280 x 1024	78.13	72.00	1024 x 768	1024 x 768
SUN66a	1152 x 900	61.85	66.00	1024 x 768	1024 x 768
SUN76a	1152 x 900	71.81	76.63	1024 x 768	1024 x 768
SUN66	1280 x 1024	71.68	66.68	1024 x 768	1024 x 768
SUN76	1280 x 1024	81.13	76.11	1024 x 768	1024 x 768
SGI72	1280 x 1024	76.92	72.30	1024 x 768	1024 x 768
SGI76	1280 x 1024	82.00	76.00	1024 x 768	1024 x 768
IBM60	1280 x 1024	63.42	60.00	1024 x 768	1024 x 768

• When the EXPAND MODE of FEATURE menu is set to real screen display, by pressing the EXPAND button on the remote control, it will switch to the screen displaying the picture as its original size (real screen display). In the real screen display, pictures will be black-framed when picture resolution is lower than 1,024 x 768.

Important:
• Some computers may not be compatible with the projector.
• The projector's maximum resolution is 1,024 x 768 pixels. It may not display correctly for the pictures of higher resolutions than 1,024 x 768.
• The picture with a SYNC on G (Green) signal may jitter.
• The picture with a SYNC on G (Green) signal may be tinged with green.

• If the resolution and frequency of your computer are not shown on the table, change the resolution of your computer. You may find the compatible resolution and frequency.
• Set the COMPUTER INPUT in SIGNAL menu to RGB, when inputting the HDTV signal as RGB signal.
• When the COMPUTER INPUT in the SIGNAL menu is set to RGB and a 525p signal is inputted, the image will be projected in the VGA 60 format. In this case, select YC_BC_R/ YP_BP_R for the COMPUTER INPUT , and the format will be changed to 525p automatically.
• A TV60 or TV50 signal corresponds to component video signal only. When the RGB signal with 5 line form is inputted, the image will not be projected correctly.
• When an unspecified signal is inputted, the projector may not work correctly.

Specifications (continued)

Specification of RGB signals in each computer mode of the projector (For SD200U)

Signal mode	resolution (H x V)	horizontal frequency (kHz)	Vertical frequency (Hz)	Normal mode (H x V)	Real mode (H x V)
TV60	–	15.73	59.94	800 x 600	–
TV50	–	15.63	50.00	800 x 600	–
525p	–	31.47	59.94	800 x 600	–
1080i	–	33.75	60.00	800 x 450	–
720p	–	45.00	60.00	800 x 450	–
PC98	640 x 400	24.82	56.42	800 x 500	640 x 400
CGA70	640 x 400	31.47	70.09	800 x 500	640 x 400
CGA84	640 x 400	37.86	84.14	800 x 500	640 x 400
CGA85	640 x 400	37.86	85.08	800 x 500	640 x 400
VGA60	640 x 480	31.47	59.94	800 x 600	640 x 480
VGA72	640 x 480	37.86	72.81	800 x 600	640 x 480
VGA75	640 x 480	37.50	75.00	800 x 600	640 x 480
VGA85	640 x 480	43.27	85.01	800 x 600	640 x 480
SVGA56	800 x 600	35.16	56.25	800 x 600	800 x 600
SVGA60	800 x 600	37.88	60.32	800 x 600	800 x 600
SVGA72	800 x 600	48.08	72.19	800 x 600	800 x 600
SVGA75	800 x 600	46.88	75.00	800 x 600	800 x 600
SVGA85	800 x 600	53.67	85.06	800 x 600	800 x 600
XGA43i	1024 x 768	35.52	86.96	800 x 600	800 x 600
XGA60	1024 x 768	48.36	60.00	800 x 600	800 x 600
XGA70	1024 x 768	56.48	70.07	800 x 600	800 x 600
XGA75	1024 x 768	60.02	75.03	800 x 600	800 x 600
XGA85	1024 x 768	68.68	85.00	800 x 600	800 x 600
MAC13	640 x 480	35.00	66.67	800 x 600	640 x 480
MAC16	832 x 624	49.72	74.55	800 x 600	800 x 600
MAC19	1024 x 768	60.24	75.02	800 x 600	800 x 600
MAC21	1152 x 870	68.59	74.96	800 x 600	800 x 600
HP75	1024 x 768	62.94	74.92	800 x 600	800 x 600

- When the EXPAND MODE of FEATURE menu is set to real screen display, by pressing the EXPAND button on the remote control, it will switch to the screen displaying the picture as its original size (real screen display). In the real screen display, pictures will be black-framed when picture resolution is lower than 800 x 600.

Important:
- Some computers may not be compatible with the projector.
- The projector's maximum resolution is 800 x 600 pixels. It may not display correctly for the pictures of higher resolutions than 800 x 600.
- The picture with a SYNC on G (Green) signal may jitter.
- The picture with a SYNC on G (Green) signal may be tinged with green.
- If the resolution and frequency of your computer are not shown on the table, change the resolution of your computer. You may find the compatible resolution and frequency.

- Set the COMPUTER INPUT in SIGNAL menu to RGB, when inputting the HDTV signal as RGB signal.
- When the COMPUTER INPUT in the SIGNAL menu is set to RGB and a 525p signal is inputted, the image will be projected in the VGA 60 format. In this case, select YC_BC_R/ YP_BP_R for the COMPUTER INPUT, and the format will be changed to 525p automatically.
- A TV60 or TV50 signal corresponds to component video signal only. When the RGB signal with 5 line form is inputted, the image will not be projected correctly.
- When an unspecified signal is inputted, the projector may not work correctly.

MITSUBISHI

DATA Projector
XD200U
SD200U

Control projector by using a personal computer

This projector can be controlled by connecting a personal computer with RS-232C terminal.

Functions can be controlled by a personal computer:
• Turn the ON or OFF
• Changing input signals
• Menu setting (for picture related setting only)

Connection

to RS-232C terminal

RS-232C cable

Mini DIN 9P

D-SUB 9P

to Com1
Comport
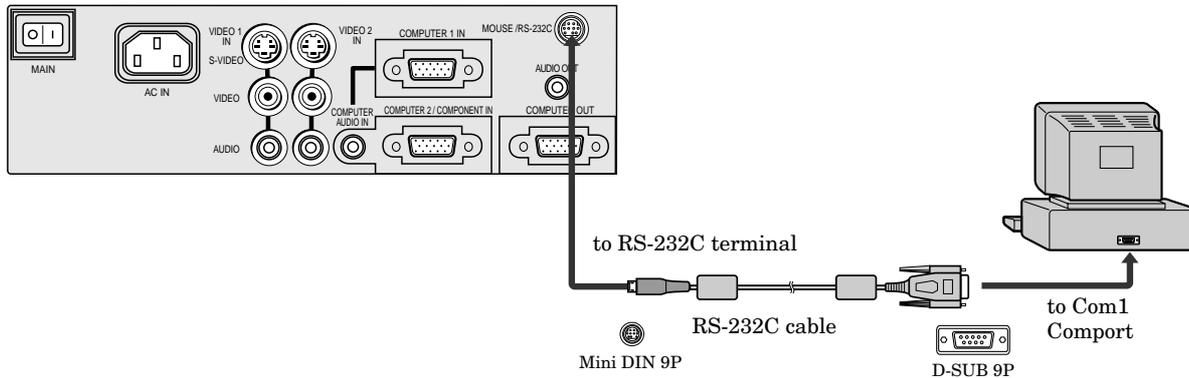
• This cable is a special cable. For more details, consult your dealer.

Important:
• Make sure that your computer and projector are turned off before connection.
• Turn on the projector after the computer is started up.
  (If you do not follow this order, the Comport may not function.)
• Adapters may be necessary depending on the PC connected to this projector. Contact your dealer for details.

1) Interface

PROTOCOL	RS-232C
BAUD RATE	9600 [bps]
DATA LENGTH	8 [bits]
PARITY BIT	NONE
STOP BIT	1 [bit]
FLOW CONTROL	NONE
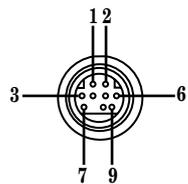
1 RXD (IN: on the Projector side)
4 GND
7 TXD (OUT: on the Projector side)

This projector uses RXD, TXD and GND lines for RS-232C control.
For RS-232C cable,the reverse type cable should be used.

2) Control command diagram

The command is structured by the address code, function code, data code and end code. The length of the command is different by each function.

	Address code	Function code	Data code	End code
HEX	30h 30h	Function	Data	0Dh
ASCII	'0' '0'	Function	Data	↵

[Address code]   30h 30h (In ASCII code, '0' '0') fixed.
[Function code]   A code of each fixed control move.
[Data code]   A code of each fixed control data (number) and not always indicated.
[End code]   0Dh (In ASCII code, '↵') fixed.

1

3) Control sequence

(1) Send the command from a personal computer to the projector. (The commands must be sent at least 400ms apart.)

(2) The projector will send a return command 400ms* after it has received an end code. If the command is not received correctly, the projector will not send the return command.

(3) The personal computer checks the command and confirms if the command which has been sent has been executed or not.

(4) This projector sends various codes other than the return code. When having a control sequence by RS-232C, reject other codes from personal computer side.

- The first character of the Status code from projector may not be displayed correctly. In this case, reject the first character on the computer side.
- * : The sending time of return command may delay depending on the condition (during changing the input signal, etc.).

[Example] Turn the power ON (' 'is for ASCII code)

Sending commands from the PC etc.	Status code from projector	Meaning
30 30 21 0D '0' '0' '!' '↵'		Command for POWER ON
	30 30 21 0D '0' '0' '!' '↵'	Command received (Command echo back)

4) Operation commands

The operation commands execute the basic operation setting of this projector. It may not operate when changing the signal.

Operation	ASCII	HEX		
POWER ON	!	21h		
POWER OFF	"	22h		
INPUT COMPUTER 1	_r1	5Fh	72h	31h
INPUT COMPUTER 2	_r2	5Fh	72h	32h
INPUT VIDEO 1	_v1	5Fh	76h	31h
INPUT VIDEO 2	_v2	5Fh	76h	32h

- POWER OFF command will not work for 1 minute after the power is turned on.
- POWER ON command will not work for 1 minute after the power is turned off.

[Example] Set the input signal to COMPUTER (' 'is for ASCII code)

Sending commands from the PC etc.	Status code from projector	Meaning
30 30 5F 72 31 0D '0' '0' '_' 'r' '1' '↵'		Command for setting the input signal to COMPUTER
	30 30 5F 72 31 0D '0' '0' '_' 'r' '1' '↵'	Command received (Command echo back)

5) Volume commands

The volume commands execute the volume setting of this projector with the value.

ITEM	ASCII	HEX		VALUE
VOLUME	VL	56h	4Ch	**00 - 31**

How to set the grade

Use ASCII letters code to set the grade for setting data. Please refer to the table below for HEX code.

ASCII	'0'	'1'	'2'	'3'	'4'	'5'	'6'	'7'	'8'	'9'
HEX	30h	31h	32h	33h	34h	35h	36h	37h	38h	39h

[Example] Set the volume to 15 (Standard value) (' 'is for ASCII code)

Sending commands from the PC etc.	Status code from projector	Meaning
30 30 56 4C 31 35 0D '0' '0' 'V' 'L' '1' '5' '↵'		Command for setting the volume
	30 30 56 4C 31 35 0D '0' '0' 'V' 'L' '1' '5' '↵'	Command received (Command echo back)

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6) Remote commands

Some remote control operations can be done by remote command codes.

Button's name on remote	ASCII	HEX		
KEYSTONE	r43	72h	34h	33h
+ (KEYSTONE/VOLUME)	r06	72h	30h	36h
− (KEYSTONE/VOLUME)	r07	72h	30h	37h
EXPAND	r02	72h	30h	32h
PinP	r04	72h	30h	34h
▲	r53	72h	35h	33h
▼	r2b	72h	32h	62h
◀	r4f	72h	34h	66h
▶	r59	72h	35h	39h
MENU	r54	72h	35h	34h
ENTER	r10	72h	31h	30h
AUTO POSITION	r09	72h	30h	39h
STILL	ra4	72h	61h	34h

[Example] Display MENU selection bar. (' 'is for ASCII code)

Sending commands from the PC etc.	Status code from projector	Meaning
30 30 72 35 34 0D '0' '0' 'r' '5' '4' '⏎'		Command as same as MENU button
	30 30 72 35 34 0D '0' '0' 'r' '5' '4' '⏎'	Command received (Command echo back)

7) Reading command diagram

Monitor projector operation status. The power ON, OFF and input terminal settings can be monitored.

	ASCII		HEX	
	Function	Data (Receive)	Function	Data (Receive)
POWER ON	vP	1	76h 50h	31h
POWER OFF	vP	0	76h 50h	30h
INPUT COMPUTER 1	vI	r1	76h 49h	72h 31h
INPUT COMPUTER 2	vI	r2	76h 49h	72h 32h
INPUT VIDEO 1	vI	v1	76h 49h	76h 31h
INPUT VIDEO 2	vI	v2	76h 49h	76h 32h

When a personal computer sends the command, data code will not be attached. On the other hand, the projector which has received a command will attach the recent operating status and then send.

[Example] Input was Video 1 when the operating status of the input terminal was confirmed.

Sending commands from the PC etc.	Status code from projector	Meaning
30 30 76 49 0D '0' '0' 'v' 'I' '⏎'		Command to confirm input
	30 30 76 49 76 31 0D '0' '0' 'v' 'I' 'v' '1' '⏎'	Command (Input is Video 1) carried out

8) Menu setting commands

The menu setting commands execute the menu setting of this projector. If the personal computer doesn't send the commands without attaching the data code, the projector which has received the command replays the setting data as data code.

ITEM	ASCII	HEX				VALUE
CONTRAST	P	50h				**±20**
BRIGHTNESS	Q	51h				**±20**
sRGB	SRGB	53h	52h	47h	42h	**0** (OFF), **1** (ON)
COLOR MATRIX (MODE)	CMT	43h	4Dh	54h		**1** (VIDEO), **2** (COMPUTER), **3** (USER), **4** (OFF)
COLOR MATRIX (R, G, B)	MRGB	4Dh	52h	47h	42h	**±30±30±30** (R+G+B)
COLOR MATRIX (Y, C, M)	MYCM	4Dh	59h	43h	4Dh	**±30±30±30** (Y+C+M)
COLOR MATRIX (SATURATION)	MSAT	4Dh	53h	41h	54h	**±10**
COLOR TEMP.	A	41h				**1** (Standard), **2** (High), **3** (Low), **4** (User)
TINT	S	53h				**±10**
COLOR	T	54h				**±10**
SHARPNESS	R	52h				**±05**
LANGUAGE	LG	4Ch	47h			**0** (日本語), **1** (English), **2** (Español), **3** (Deutsch) , **4** (Français), **5** (Italiano), **6** (中文)
RESET ALL	RSTALL	52h 53h 54h 41h 4Ch 4Ch				
MUTE	MUTE	4Dh	55h	54h	45h	**0** (MUTE OFF), **1** (MUTE ON)

How to set the grade

Use ASCII letters code to set the grade for setting data. Please refer to the table below for HEX code.

ASCII	'+'	'-'	'0'	'1'	'2'	'3'	'4'	'5'	'6'	'7'	'8'	'9'
HEX	2Bh	2Dh	30h	31h	32h	33h	34h	35h	36h	37h	38h	39h

[Example 1]   Set the MUTE to ON.

Sending commands from the PC etc.	Status code from projector	Meaning
30 30 4D 55 54 45 31 0D '0' '0' 'M' 'U' 'T' 'E' '1' '↵'		Command for setting the MUTE to ON
	30 30 4D 55 54 45 31 0D '0' '0' 'M' 'U' 'T' 'E' '1' '↵'	Command received (Command echo back)

[Example 2]   The TINT was set to +10 when the setting status was confirmed.

Sending commands from the PC etc.	Status code from projector	Meaning
30 30 53 0D '0' '0' 'S' '↵'		Command to confirm setting of TINT
	30 30 53 2B 31 30 0D '0' '0' 'S' '+' '1' '0' '↵'	Command (setting of TINT is +10) carried out