



Please read this manual carefully before operating your set.

Retain it for future reference.

Record model number and serial number of the set.

See the label attached on the bottom of the set and quote this information to your dealer when you require service.

Model number :

Serial number :

LG LCD PROJECTOR

RL-JA20 OWNER'S MANUAL



LCD PROJECTOR

Warning

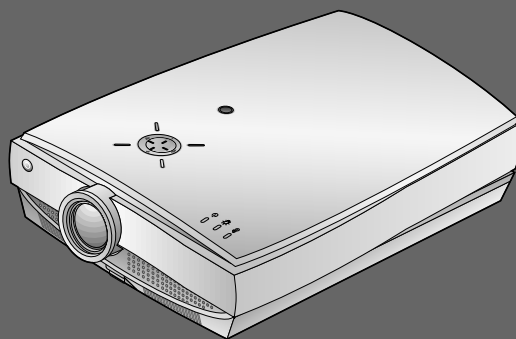
This is a class B product. In a domestic environment this product may cause radio interference, in which case the user may be required to take adequate measures.

FCC NOTICE

• A Class B digital device

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.
- **Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.**



CONTENTS

INTRODUCTION

Safety Instructions	4
Names of parts	12

INSTALLATION AND COMPOSITION

Installation Instructions	18
Composition	20
Turning on the Projector	22
Turning off the Projector	23
Operating the Projector	24
Selecting source mode	25

CONNECTION

Connecting to a Desktop PC	26
Connecting to a Notebook PC	27
Connecting to a Macintosh Desktop PC	28
Connecting to a Macintosh PowerBook	31
Connecting to a wireless transmitter (option)	32
Connecting to a wireless receiver (option)	33
Connecting to a Video Source	34
Connecting to a DVD	35
Connecting to a D-TV Set-Top Box	36

BASIC FUNCTIONS

Function checking	37
Using Still function	38

SPECIAL FUNCTIONS

Selecting language	39
Checking lamp time	40
Manual Color Temperature Control	41
Using Blank function	42
Using Flip Horizontal / Vertical function	44
Twin Picture function	46

POSITIONING

Adjusting screen display	48
Using Keystone function	49
Using Zoom function	50
Using ARC function	51

VIDEO

Adjusting Video	52
-----------------------	----

TRACKING

Using Tracking function	54
-------------------------------	----

RS-232C

External control device setup	56
-------------------------------------	----

INFORMATION

Supported Monitor Display	63
Maintenance	64
Memo	65
Specifications	67

Before operating the unit, please read this manual carefully.

Safety Instructions

► Please take note of the safety instructions to prevent any potential accident or misuse of the projector.

► Safety Instructions are given in two forms as detailed below.

⚠ WARNING The violation of this instruction may cause serious injuries and even death.

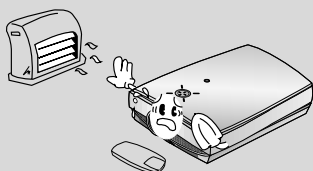
⚠ NOTES The violation of this instruction may cause light injuries or damage to the projector.

► After reading this manual, keep it in the place that the user always can contact easily.

⚠ Indoor Installation-WARNING

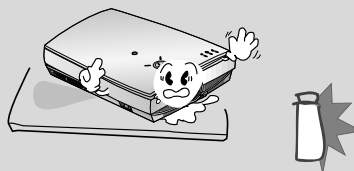
Do not place the Projector in direct sunlight or near heat sources such as radiators, fires and stove etc.

- This may cause a fire hazard !



Do not place inflammable materials beside the projector

- This may cause a fire hazard !



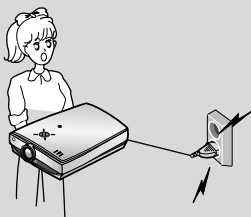
Do not make the children hang on or climb the installed projector.

- It may cause the display to fall, causing an injury or a death.



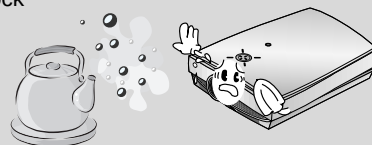
⚠ Indoor Installation-NOTES

Disconnect from the mains and remove all connections before moving.



Do not place the projector close to sources of steam or oil such as a humidifier.

- This may create a fire hazard or an electric shock hazard !





Indoor Installation-NOTES

Do not place the projector where it might be exposed to dust.

- This may cause a fire hazard !



When installing the projector on a table, be careful not to place it near the edge.

- This may cause the projector to fall causing serious injury to a child or adult and serious damage to the projector.
- **Only use a suitable stand.**



Only use the projector on a level and stable surface.

- It may become unstable and affect operation.



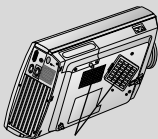
Ensure good ventilation around the projector. The distance between the projector and the wall should be more than 30cm.

- An excessive increase in its internal temperature may cause a fire hazard!

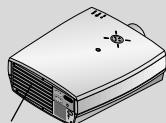


Don't clog the vents(air intake/exhaust) of the projector.

This would cause the internal temperature to increase and could cause a fire hazard!



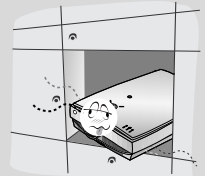
Air intake



exhaust pipe

Do not place the projector directly on a carpet, rug or place where ventilation is restricted.

- This would cause its internal temperature to increase and might create a fire hazard !



Outdoor Installation-WARNING

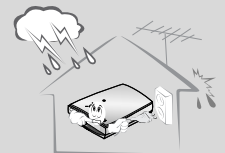
Do not use the projector in a damp place such as a bathroom where it is likely to get wet.

- This may cause a fire or an electric shock hazard !



In case of using a receiver (VCR, Digital Set Top Box), bend antenna cable between inside and outside building to prevent rain from flowing in.

- This may cause water damaged inside the projector and could give an electric shock.

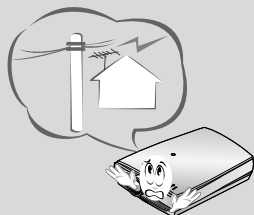




Outdoor Installation-NOTES

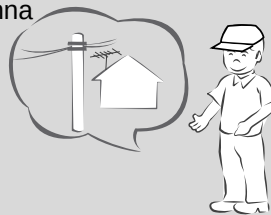
In case of using a receiver (VCR, Digital Set Top Box), do not place an antenna in the vicinity of power lines.

- This may cause an electric shock.



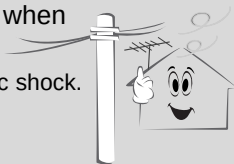
In case of using a receiver (VCR, Digital Set Top Box), contact your service center to construct an antenna because it needs a skilled man.

- This may cause an electric shock.



In case of using a receiver (VCR, Digital Set Top Box), there should be enough distance between an outside antenna and power lines to keep the former from touching the latter even when the antenna falls.

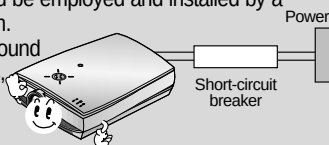
- This may cause an electric shock.



Power-WARNING

Earth wire should be connected.

- If the earth wire is not connected, there is possible a danger of electric shock caused by the current leakage.
- If grounding methods are not possible, a separate circuit breaker should be employed and installed by a qualified electrician.
- Do not connect ground to telephone wires, lightning rods or gas pipe.



The mains plug should be inserted fully into the power outlet to avoid a fire hazard !

- This may cause a fire hazard !



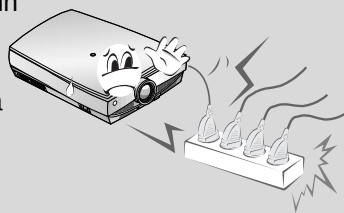
Do not place heavy objects on the power cord

- This may cause a fire or an electric shock hazard !



Do not use too many plugs on the Mains multi-outlet.

- It may result in overheating of the outlet and causes a fire hazard !





Power-NOTES

Never touch the power plug with a wet hand

- This may cause an electric shock hazard !



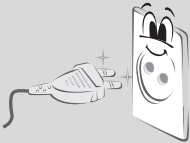
Hold the plug firmly when unplugging. If you pull the cord the cord may be damaged.

- This may cause a fire hazard !



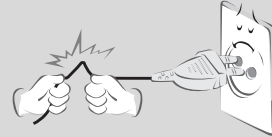
Prevent dust collecting on the power plug pins or outlet.

- This may cause a fire hazard !



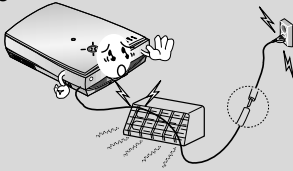
Do not plug when the power cord or the plug is damaged or the connecting part of the power outlet is loose.

- This may cause a fire or an electric shock hazard !

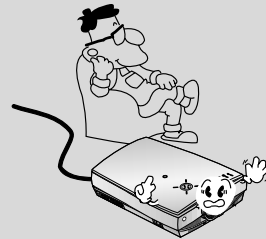


Ensure the power cord does not come into contact with sharp or hot objects such as a heater.

- This may cause a fire or an electric shock hazard !



Place the projector where people will not trip or tread on the power lead.



Do not turn the projector On/Off with plugging-in or unplugging the power plug to the wall outlet. (Do not use the power plug for switch.)

- It may cause mechanical failure or could give an electric shock.

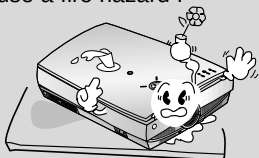




Using-WARNING

Do not place anything containing liquid on top of the projector such as flowerpot, cup, cosmetics or candle.

- This may cause a fire hazard !



In case of impact shock or damage to the projector switch it off and unplug it from the mains outlet and contact your service center.

- This may cause a fire or an electric shock hazard !



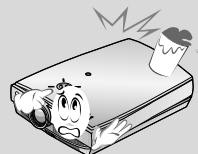
Do not allow any objects to fall into the projector.

- This may cause an electric shock hazard !



If water is spilt into the projector unplug it from the mains supply outlet immediately and consult your Service Agent.

- This may cause an electric shock hazard !



Dispose of used batteries carefully and safely.

- In the case of a battery being swallowed by a child please consult a doctor immediately.



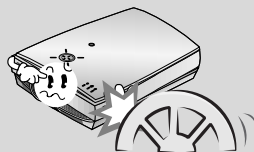
In the event that an image does not appear on the screen please switch it off and unplug it from the mains supply and contact your Service Agent.

- This may cause a fire or an electric shock hazard !



Do not use the projector in a moving vehicle.

- This may cause an accident.



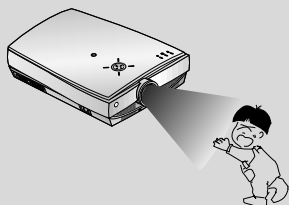
Do not remove any covers (except lens cover). High risk of Electric Shock!



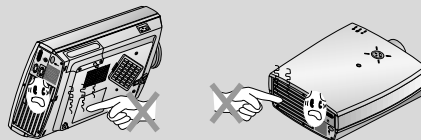


Using-WARNING

Don't look directly onto the lens when the projector is in use. Eye damage may occur!

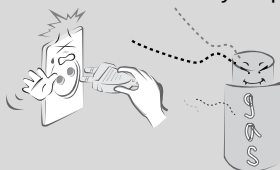


Do not touch metal parts during or soon after operation since the vents and lamp cover will remain very hot!



Never touch the wall outlet when there is leakage of gas, open the windows and ventilate.

- It can cause a fire or a burn by a spark.



Using-NOTES

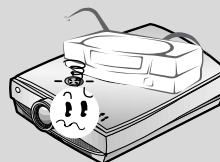
Do not drop the projector or allow impact shock.

- This may cause mechanical failure or personal injury !

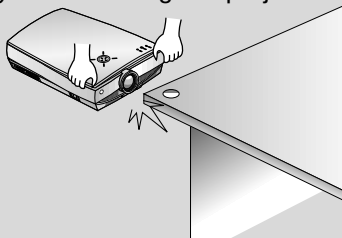


Do not place heavy objects on top of projector.

- This may cause mechanical failure or personal injury!



Take care not to cause impact to the lens particularly when moving the projector.

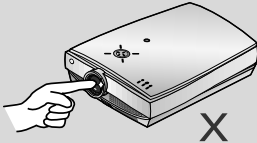


Safety Instructions

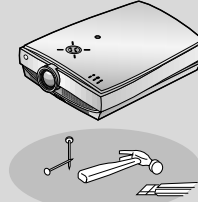


Using-NOTES

Do not touch the lens of the projector. It is delicate and easily damaged.



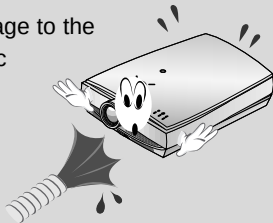
Do not use any sharp tools on the projector as this will damage the casing.



Cleaning-WARNING

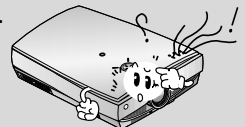
Do not use water while cleaning the projector

- This may cause damage to the projector or an electric shock hazard.

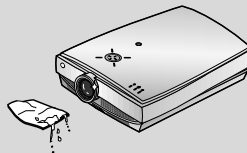


In the unlikely event of smoke or a strange smell from the projector, switch it off, unplug it from the wall outlet and contact your dealer or service centre.

- This may cause a fire or an electric shock hazard !



Use an air spray or soft cloth that is moist with a neutral detergent and water for removing dust or stains on the projection lens.





Cleaning-NOTES

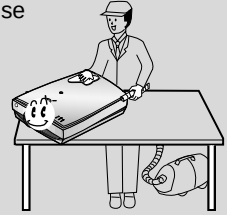
Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners.

- This may cause damage to the Projector or cause an electric shock hazard !



Contact the Service Center once a year to clean the internal parts of the projector.

- Accumulated dust can cause mechanical failure.



Others-WARNING

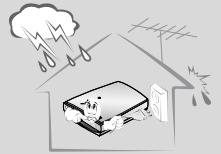
Do not attempt to service the projector yourself. Contact your dealer or service centre.

- This may cause damage to the projector and could give an electric Shock as well as invalidating the warranty !



In case of using a receiver (VCR, Digital Set Top Box), in the event of a lightning or thunder storm unplug the projector and aerial from the wall outlet.

- This will prevent damage to the projector and possible electric shock.



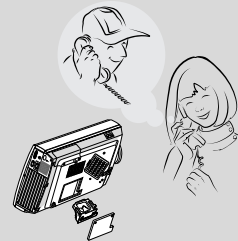
Others-NOTES

Be sure to unplug if the projector is not to be used for a long period.

Accumulated dust may cause a fire hazard!

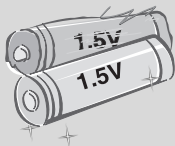


Refer lamp servicing to qualified service personnel.



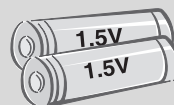
Do not mix new batteries with old batteries.

- It can cause a battery explosion, a fire by leakage or could give an electric shock.



Only use the specified type of battery.

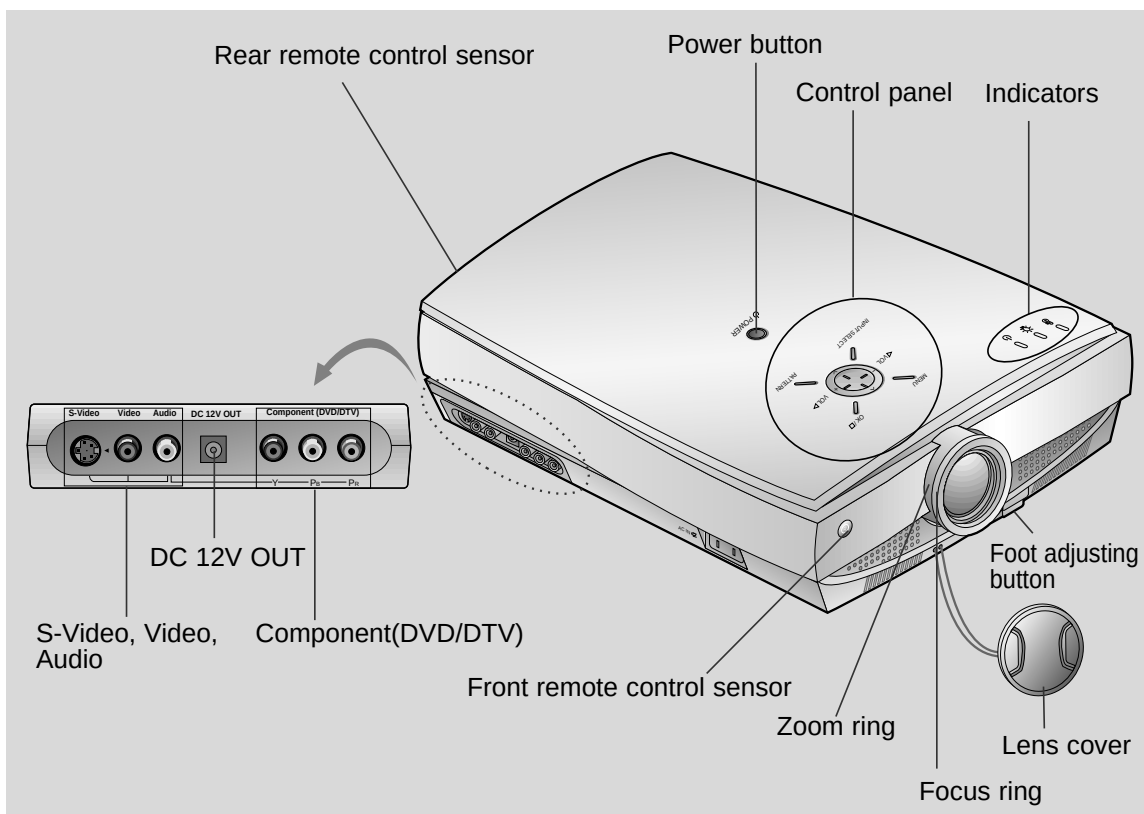
- This could cause damage to the remote control.



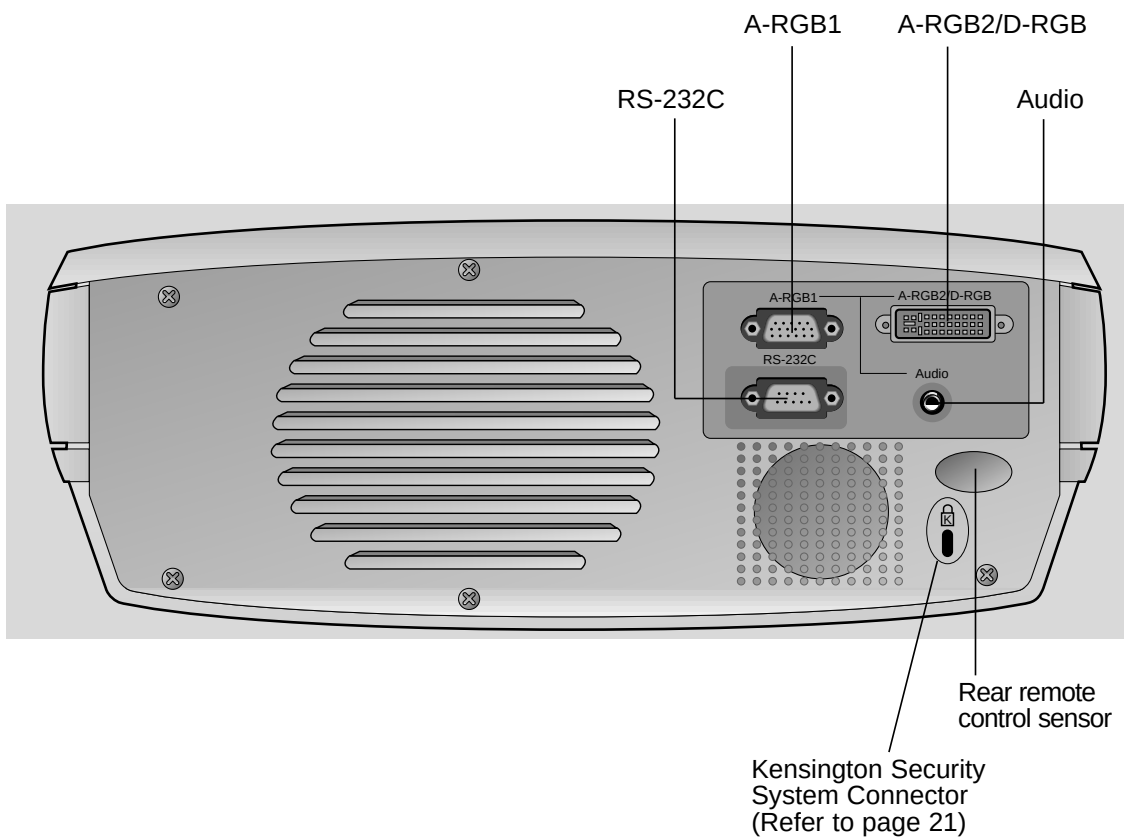
Names of parts

Main Body

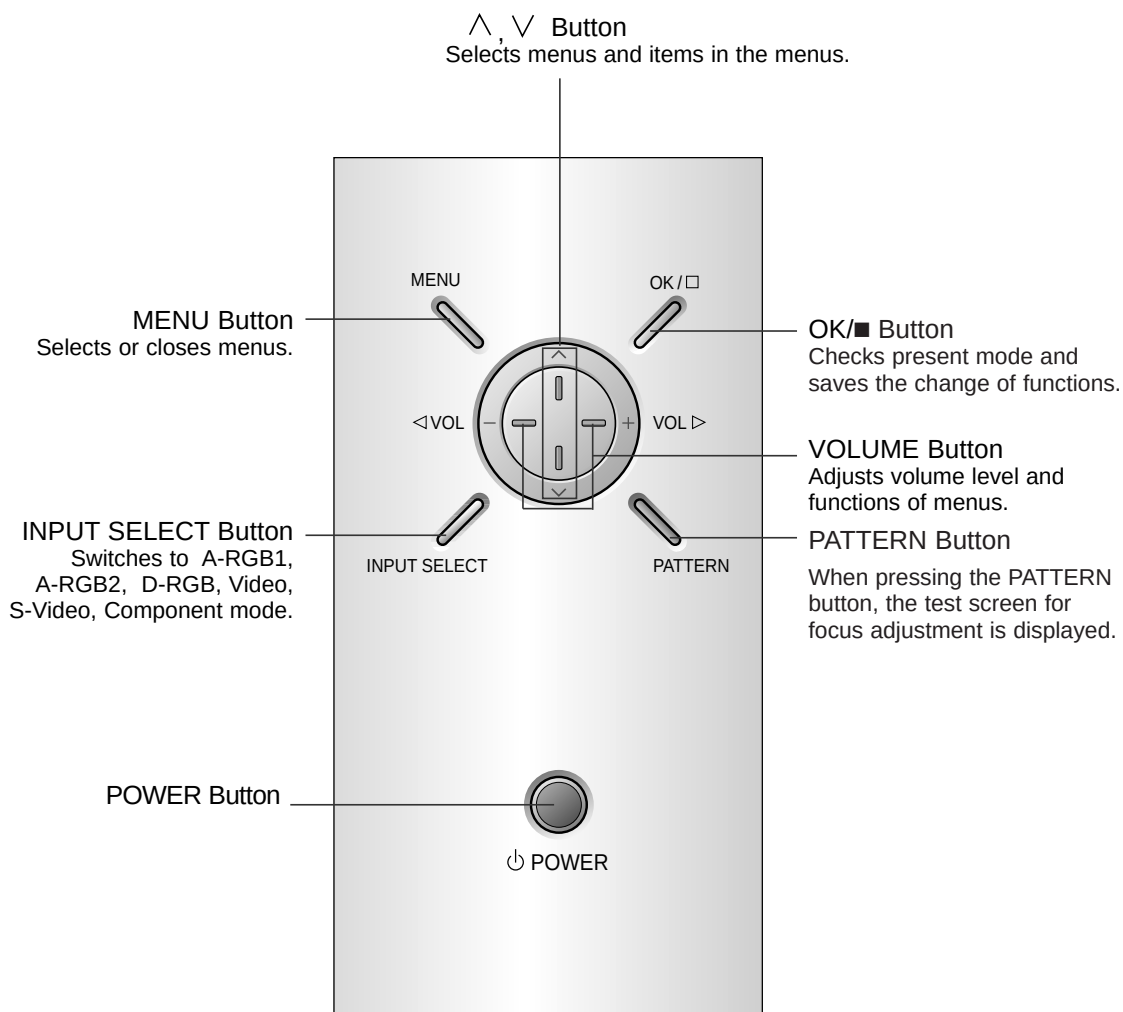
- * The LCD projector is manufactured using high-precision technology. You may, however, see tiny black points and/or bright points (red, blue, or green) that continuously appear on the LCD projector. This is a normal result of the manufacturing process and does not indicate a malfunction.



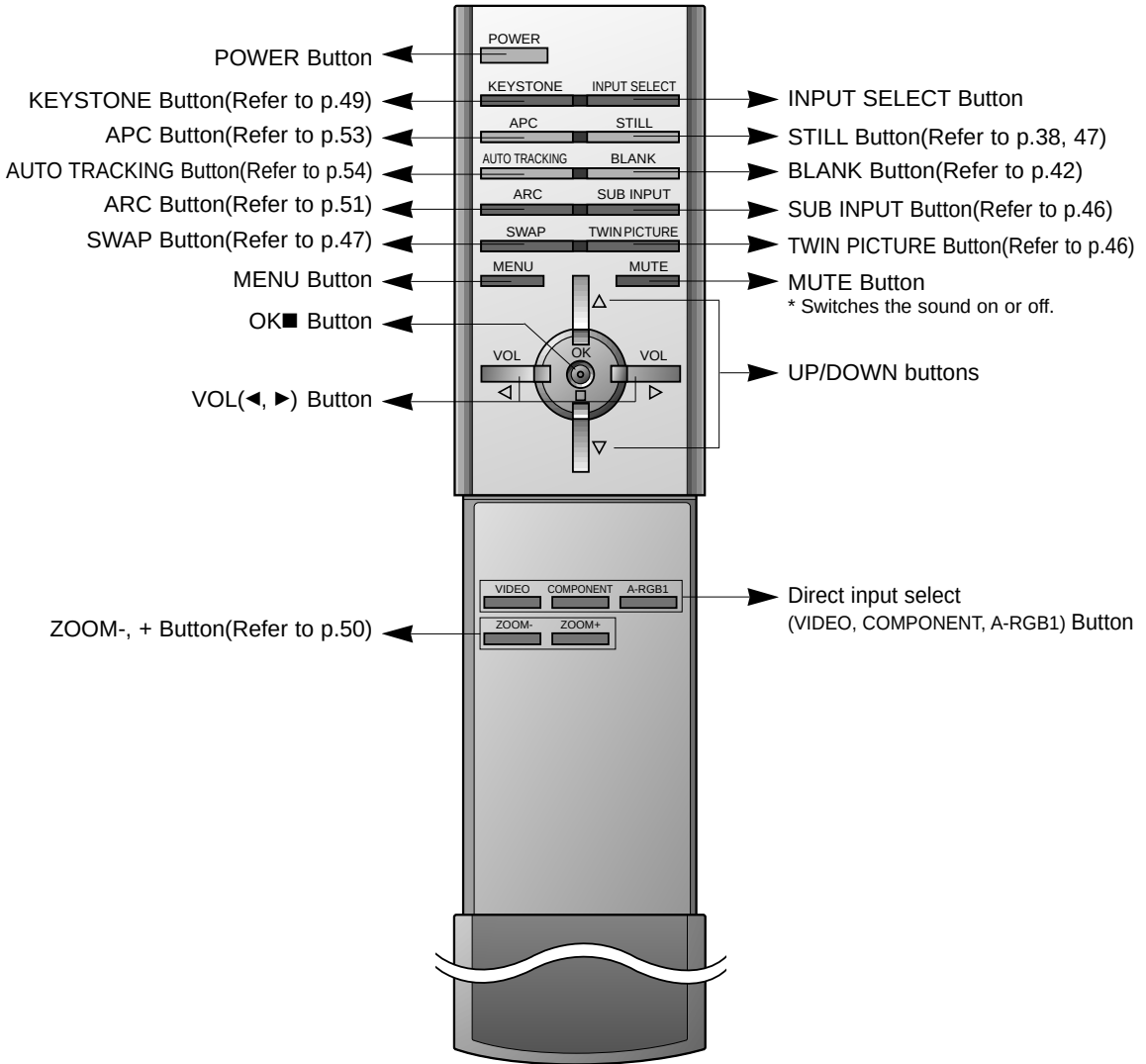
Rear Connecting Part



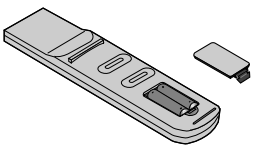
Control Panel



Remote Control



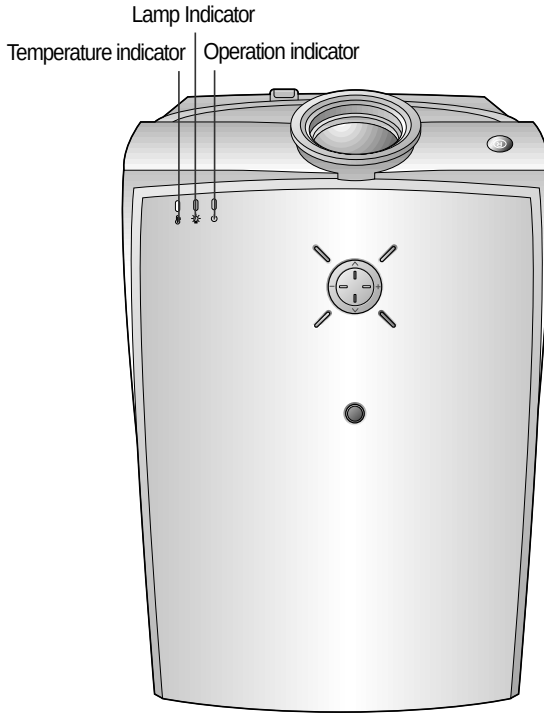
Inserting the batteries



- Open the battery compartment cover on the back of the remote control and insert the batteries with correct polarity, match "+" with "+", and match "-" with "-".
- Install two 1.5V "AAA" alkaline batteries. Don't mix used batteries with new batteries.

Projector Status Indicators

* Lamp Indicator, operation indicator and temperature indicator at the top of the projector show the user the operating status of the projector.



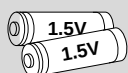
Operation Indicator	Red	Initializing hardware after the main power applied.
	Orange	Standby.
	Green	On operation.(Turn on the lamp)
	Orange(flashing)	Projector lamp is cooling as power out(2 minutes)
	Off	Power off.
Lamp Indicator	Red	Projector lamp is reaching the end of its life and needs to be replaced with a new lamp.(over 1500 hours) The OSD, "Replace the Lamp" is displayed 10 seconds from the first power on.
	Red(flashing)	The projector has trouble in the lamp or around it at power-on. Retry Power On again later. If lamp indicator is red(flashing) again, contact the service center.
	Green(flashing)	The lamp cover or absorption pipe cover is not closed.
Temperature Indicator	Orange	This projector is in high temperature. If you don't turn off the projector, it'll be turned off automatically. "Temperature is Too High"
	Red	The projector is turned off as its high temperature.
	Red (flashing)	Power has turned off due to problem with the internal cooling fan. Contact your service center.

" " is the warning message on screen.

Accessories



Remote Control



Batteries 2 (size AAA)



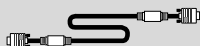
Power Cord



Audio/Video Cable



Audio Cable



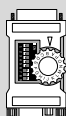
Computer Cable



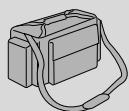
DVI Cable



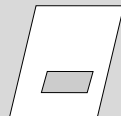
SCART to RCA jack (option)



MAC Desktop
Adaptor



Portable Bag

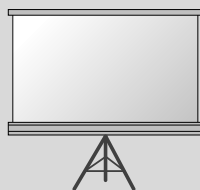


Operating guide

Optional Extras

* Contact your dealer for buying these items.

* Contact your dealer for replacing a new lamp.



Screen for projecting



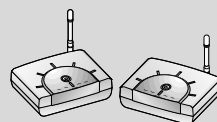
S-Video Cable



DVI to VGA Cable



Lamp



A/V wireless
transmitter-receiver

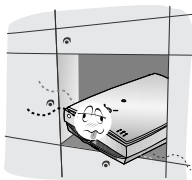
* See A/V wireless transmitter-receiver operating guide for installation and connection etc.

Installation Instructions

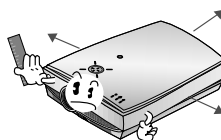
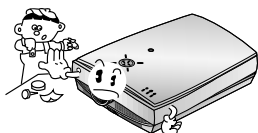
* Don't place the projector in the following conditions. It may cause malfunction or product damage.

Provide proper ventilation for this projector.

- The projector is equipped with ventilation holes(intake) on the bottom and ventilation holes(exhaust) on the front. do not block or place anything near these holes, or internal heat build-up may occur, causing picture degradation or damage to the projector.
- Do not place the projector on a carpet, rug or other similar surface. It may prevent a adequate ventilation of the projector bottom. This product should be mounted to a wall or ceiling only.

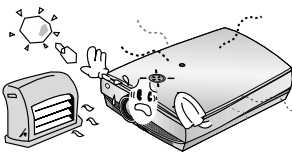


- Never push projector or spill liquid of any kind into the projector.
- Leave an adequate distance(30cm or more) around the projector.



Place this projector in adequate temperature and humidity conditions.

- Install this projector only in a location where adequate temperature and humidity is available. (refer p.67)

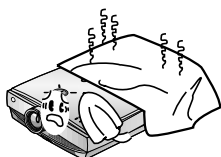


Don't place the projector where it can be covered with dust.

- This may cause overheating of the projector. Clean the Air filter periodically.



- Do not clog the slots and openings of the projector. It may cause overheating.



- The LCD projector is manufactured using high-precision technology. You may, however, see tiny black points and/or bright points (red, blue, or green) that continuously appear on the LCD projector. This is a normal result of the manufacturing process and does not indicate a malfunction.

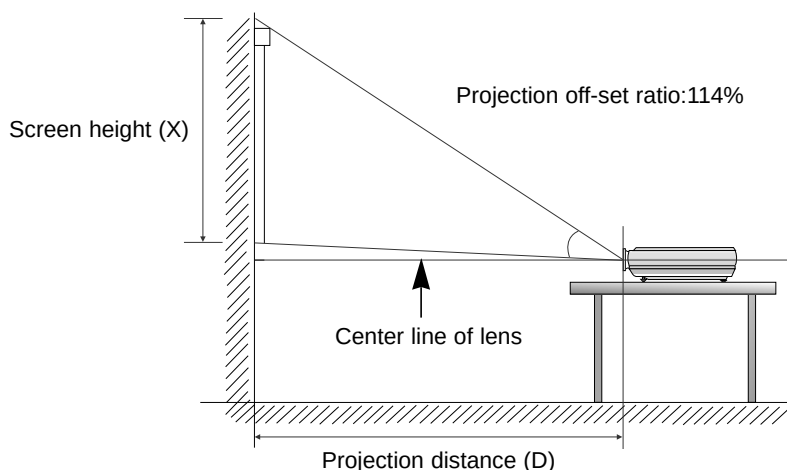
- To receive the DTV program, it is necessary to purchase DTV receiver (Settop Box) and connect it to the projector.

- If there is no input signal, Menu will not display on screen.

Basic Operation of the Projector

1. Place the projector on a sturdy and horizontal surface with the PC or AV source.
2. Place the projector the correct distance from the screen. The distance between the projector and the screen determines the actual size of the image.
3. Turn the projector so that the lens can be at a right angle to the screen. If the projector is not at a right angle, the screen image will be crooked. At this time perform keystone function.(Refer to page 49.)
4. Connect the cables of the projector to a wall power socket and other connected sources.

projection distance based on the picture format



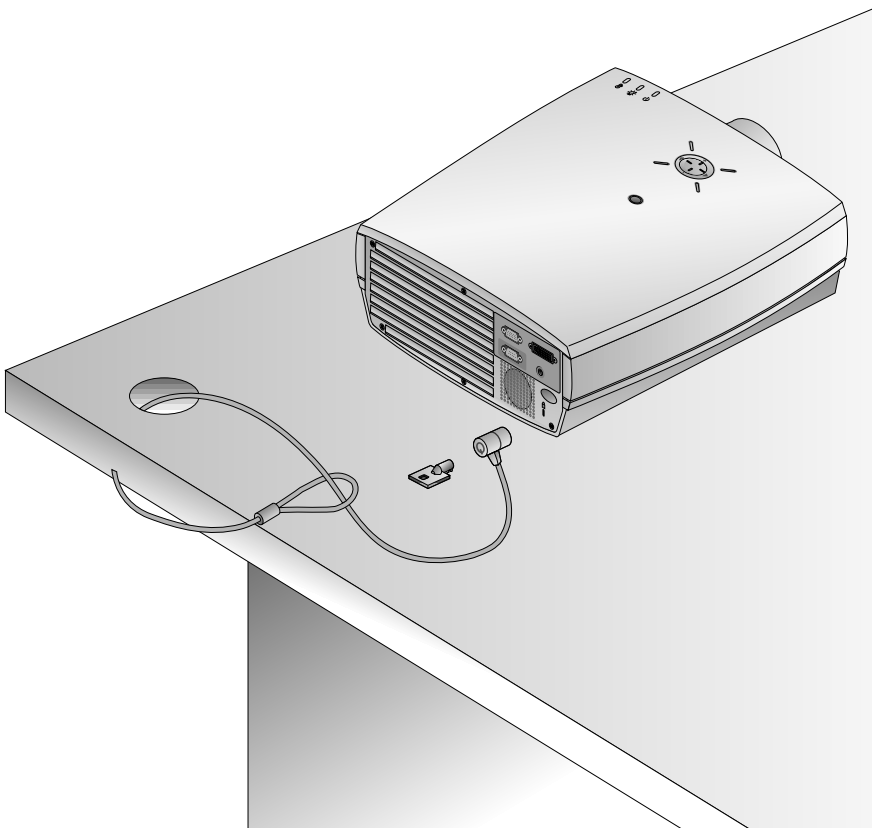
16:9 picture format									mm
screen size	40"	60"	80"	90"	100"	110"	120"	150"	200"
screen height (X)	498	747	996	1121	1245	1370	1494	1868	2491
The shortest distance (D)	1694	2540	3387	3811	4234	4657	5081	6351	8468
The longest distance (D)	2202	3302	4403	4954	5504	6054	6605	8256	11008

* The longest distance/the shortest distance show status what adjusted by zoom function.

4:3 picture format									mm
screen size	40"	60"	80"	90"	100"	110"	120"	150"	200"
screen height (X)	610	914	1219	1372	1524	1676	1829	2286	3048
The shortest distance (D)	2073	3109	4145	4663	5182	5700	6218	7772	10363
The longest distance (D)	2694	4042	5389	6062	6736	7410	8083	10104	13472

Using Kensington Security System

- The projector has Kensington Security System Connector on the back panel. Connect the Kensington Security system cable as below.
- For the detailed installation and use of the Kensington Security System, refer to the user's guide attached to the Kensington Security System set.
And for further information, contact <http://www.kensington.com>, the internet homepage of the Kensington company that deals with expensive electronic equipments such as notebook PCs or LCD projectors.
- Kensington Security System is an optional item.



Turning on the Projector

1 Connect power cord correctly.

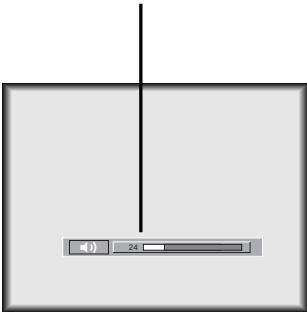
2 Remove the lens cover of the projector.

3 Press the **POWER** button on the remote control or top cover.(Green operation indicator flashes during cooling of the lamp.)

- It will take about 1 minute to display the picture after power on because the projector lamp has to warm up.
 - An image will appear after the operation indicator light up(Green).
 - Select the source mode with the **INPUT SELECT** button.
 - Leave the projector plugged in for at least 2 minutes after switching off the projector, as this will allow the lamp cooling to continue which will help to preserve the lamp life.
-

4 Adjust volume level.

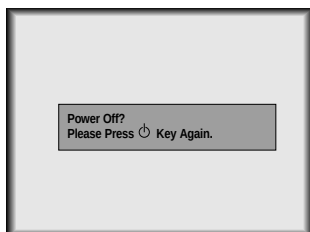
- If you press **VOLUME** ► button, sound and volume level number are increased.
- If you press **VOLUME** ◀ button, sound and volume level number are decreased.



* Don't turn main power off and don't unplug the power cord while the ventilation fan(inlet/outlet) is working.

Turning off the Projector

- 1 Press the **POWER** button on the top cover or remote control.



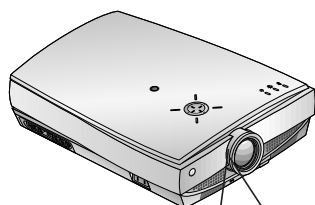
- 2 Press the **POWER** button on the top cover or remote control again to cut off the power.

- 3 If operation indicator is blinking in orange color, leave the power cord plugged into the outlet. Do not pull out from the outlet until operation indicator is light up(orange).
 - If operation indicator is blinking in orange color, the power button on the top cover or remote control may not operate.

Operating the Projector

Focus and Position of the Screen Image

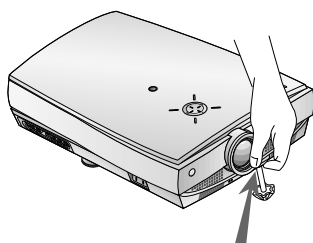
When an image appears on the screen, check if it is in focus and fits well to the screen.



Zoom ring Focus ring

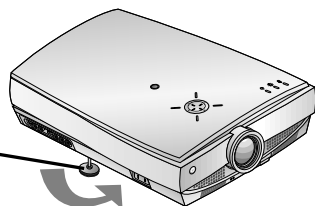
- To adjust the focus of the image, rotate the focus ring which is the outer ring on the lens.
- To adjust the size of the image, rotate the zoom ring which is the inner ring on the lens.

To raise or lower the image on the screen, extend or retract the foot at the bottom of the projector by pushing foot adjuster button as below.



1. Stand behind the projector and lift the foot adjuster levers while you support the front of the projector.
2. While pressing the foot adjuster button, raise or lower the projector to place the screen image in the proper position.
3. Release the button to lock the foot in its new position.
4. To fine-tune the height of the projector, rotate the front foot to raise or lower it. After raising the front foot, do not press down on the projector.

If the projector is installed on a place that is not stable or horizontal, the projected screen shape will be distorted.



Horizontal leveler

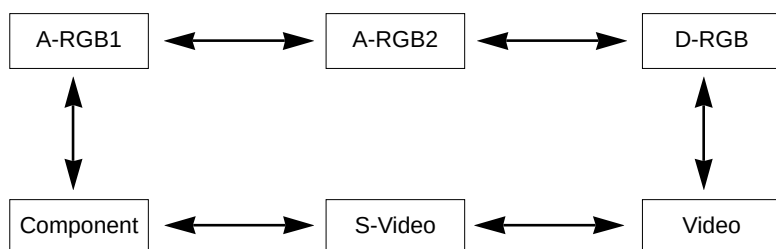
- Adjust the screen shape to be horizontal and rectangular with horizontal leveler as above.
- Avoid impact or extra weight on top of the projector as it may cause the feet to alter position or damage them.

Selecting source mode

- 1 Press the **INPUT SELECT** button.

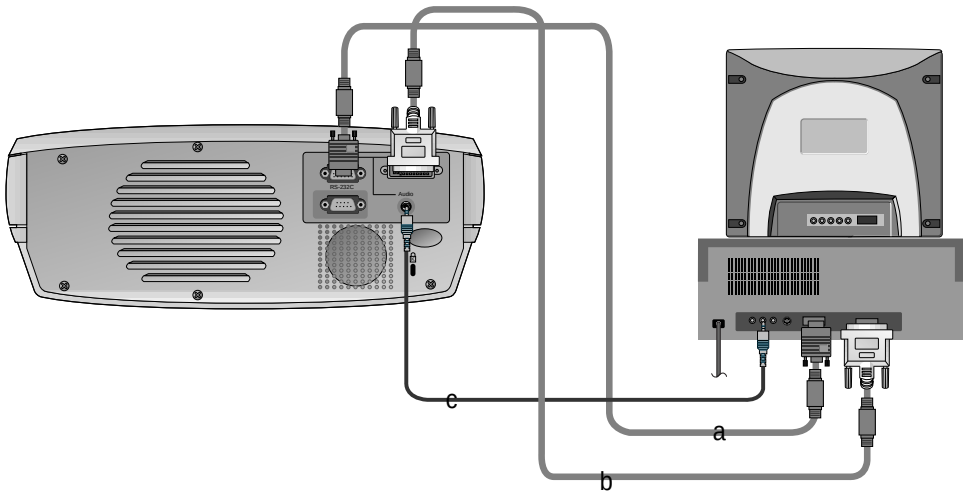


- 2 Each press of the **VOLUME** (◀, ▶) button changes the display as below.



Connecting to a Desktop PC

- * You can connect the projector to a computer of VGA, SVGA, XGA and SXGA output.
- * You can use ARC function for the RGB signals of the Aspect Ratio 4:3. (For HD wide input signals, you cannot use ARC function.)
- * Fundamentally, HD wide input signal is not included in the Spec, so the set may not support HD signal perfectly.
- * Refer to page 63 for the supported pc graphic card displays of the projector.

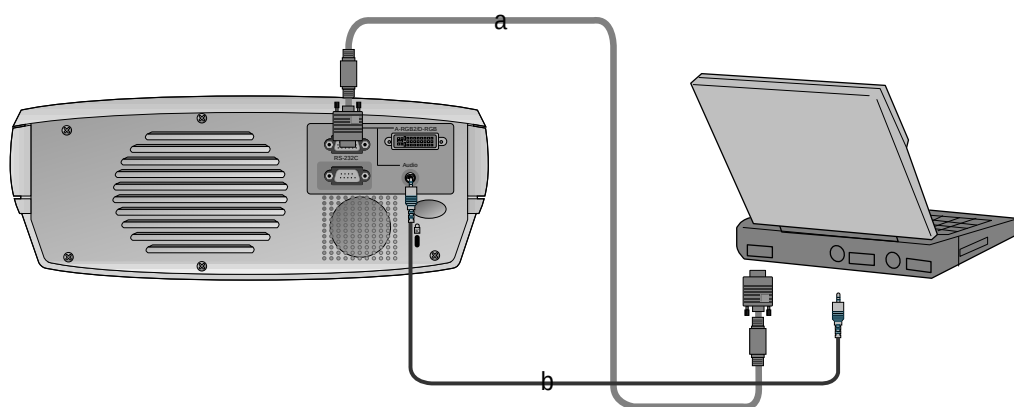


< How to connect >

- Connect computer cable to **A-RGB1** of the projector.
- If the PC has DVI output, connect DVI cable to **A-RGB2/D-RGB** of the projector.
- Connect the audio cable of PC (LINE OUT sound port) to **Audio** of the projector.

* If the PC has two audio out ports of SPEAKER OUT and LINE OUT, connect the LINE OUT port to get better sound quality.

Connecting to a Notebook PC



< How to connect >

- a. Connect computer cable to **A-RGB1** of the projector.

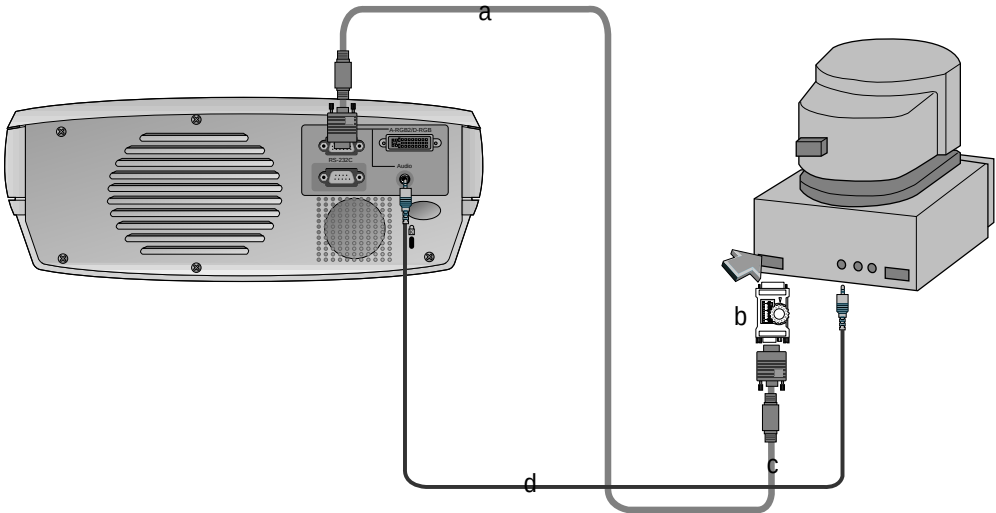
* If you set your computer, such as a notebook type IBM PC/AT compatible, to output the signal to both the display of your computer and the external monitor, the picture of the external monitor may not appear properly. In such cases, set the output mode of your computer to output the signal only to the external monitor. For details, refer to the operating instructions supplied with your computer.

* If the PC has DVI output, use DVI cable.

- b. Connect the audio cable of PC (LINE OUT sound port) to **Audio** of the projector.

Connecting to a Macintosh Desktop PC

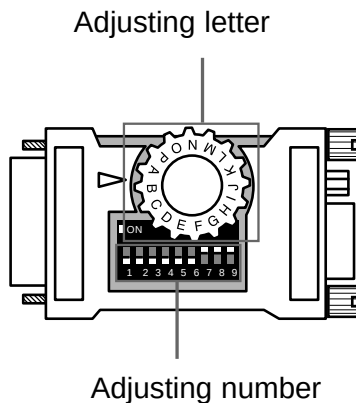
* You must use the Macintosh desktop adaptor to connect the projector to a Macintosh PC.



< How to connect >

- Connect computer cable to **A-RGB1** of the projector.
- Set the adjusting number and letter of the Macintosh desktop adaptor in accordance with the resolution you want to use and connect the adaptor to the Macintosh. (Refer to page 29 ~ 30)
- Connect the computer cable to the Macintosh desktop adaptor.
- Connect the audio cable of PC (LINE OUT sound port) to **Audio** of the projector.

How to use the Macintosh desktop adaptor



a. How to use

Usually set 1 ~ 6 to OFF status and 7 ~ 9 to ON status of the adjusting numbers. And select the adjusting letter which is correct to the Macintosh and the monitor. (Refer to page 30.)

b. Notes for Connecting to the Macintosh PowerBook

If you get problems when connecting it to the projector, set the adjusting number 9 to OFF status and restart the Macintosh PowerBook.

Connecting to a Macintosh Desktop PC

Adjusting letters of MAC desktop adaptor in accordance with kinds of MAC and output spec.

MAC S	output spec	output resolution horizontal frequency(KHz) vertical frequency(Hz)	12"RGB 512x384 24.5 60	13"1.4"RGB 640x480 35 66	15"Portrait 640x670 68.8 75	VGA 640x480 31 60	SVGA 800x600 35 56	SVGA 800x600 56 or 72	16"Color 832x624 50 75	19"Color 1024x768 60 75	19"Color 1024x768 60 or 70	21"Color 1152x870 68.7 75	21"Color 1152x870 68.7 75	NTSC 15.7 60	PAL 16 50
	adjusting letter		N	J	O	G	G	G	F	D	G	M	P	L	H
MAC IIx, IIs			N	J	O										
MAC IIx, IIsx			N	J		G									
LC			N	J		M									
LCII			N	J		G									
LCIII			N	J	O	G			F						
LC 475, LC 550			N	J	O	G	G		F						
LC 575			N	J	O	G	G		F	D		M	P	L	H
Performa															
400,405,410,430,600,600CD			N	J		G									
450			N	J	O	G			F						
Quadra															
700,900			N	J	O	G	G		F			M	P	L	H
605,610,650,800,950			N	J	O	G	G		F	D		M	P	L	H
840AV			N	J	O	G	G	G	F	D	G	M	P	L	H
Centris															
610,650			N	J	O	G	G		F	D		M	P	L	H
660AV			N	J	O	G	G	G	F	D	G	M	P	L	H
PowerBook															
160,165C,180,180C			N	J	O	G	G		F						
DUO DOC, MINI DOC			N	J	O	G	G		F						
824 BOARD			N	J	O				F			M	P	L	H