LG

LG DLP PROJECTOR

Please read this manual carefully before operating your set.
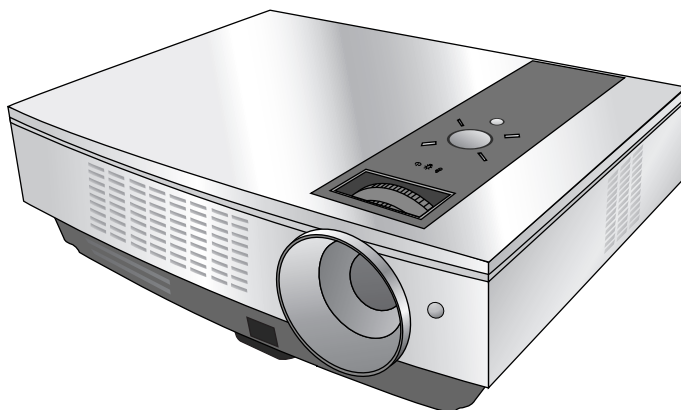Retain it for future reference.
Record model number and serial number of the set.
See the label attached on the bottom of the set and quote this information to your dealer when you require service.
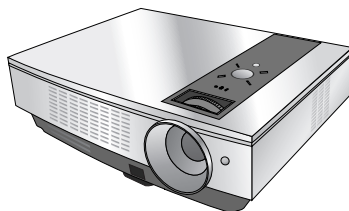
Model number :
Serial number :

BX401C
OWNER'S MANUAL

DLP PROJECTOR

Contents

Disposal of your old appliance

1. When this crossed-out wheeled bin symbol is attached to a product it means the product is covered by the European Directive 2002/96/EC.
2. All electrical and electronic products should be disposed of separately from the municipal waste stream via designated collection facilities appointed by the government or the local authorities.
3. The correct disposal of your old appliance will help prevent potential negative consequences for the environment and human health.
4. For more detailed information about disposal of your old appliance, please contact your city office, waste disposal service or the shop where you purchased the product.

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 allow children to hang on the installed projector. It may cause the projector to fall, causing injury or 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 !	Do not place the projector where it might be exposed to dust. This may cause a fire hazard or damage to the unit!
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 fall and cause injury and/or damage to the unit.	Ensure good ventilation around the projector. The distance between the projector and the wall should be more than 30cm/12 inches. An excessive increase in its internal temperature may cause a fire hazard or damage to the unit!
Do not block the vents of the projector or restrict air-flow in any way. This would cause the internal temperature to increase and could cause a fire hazard or damage to the unit!	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 or damage the unit.	

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 !		

Power	⚠ WARNING	
Earth wire should be connected. If the earth wire is not connected, there is a possible danger of electric shock caused by the current leakage. If grounding methods are not possible, a separate circuit breaker should be 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 or damage the unit.	Do not place heavy objects on the power cord. This may cause a fire or an electric shock hazard !

Power	⚠ WARNING

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, it 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 any part of the power outlet is loose.

This may cause a fire or an electric shock hazard or damage to the unit! | 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 or damage to the unit! | Place the projector where people will not trip or tread on the power lead.

This may cause a fire or an electric shock hazard or damage to the unit! |

Do not turn the projector On/Off by 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 cause 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 or damage to the unit! | 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 or damage to the unit! | Do not allow any objects to fall into the projector.

This may cause an electric shock hazard or damage to the unit! |
|---|---|---|
| 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 or damage to the unit! | 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 or damage to the unit! |
| Do not remove any covers (except lens cover). High risk of Electric Shock! | 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! |

CAUTION concerning the Power Cord
Most appliances recommend they be placed upon a dedicated circuit; that is,a single outlet circuit which powers only that appliance and has no additional outlets or branch circuits.Check the specification page of this owner's manual to be certain.

Do not overload wall outlets. Overloaded wall outlets,loose or damaged wall outlets, extension cords, frayed power cords,or damaged or cracked wire insulation are dangerous.Any of these conditions could result in electric shock or fire. Periodically examine the cord of your appliance,and if its appearance indicates damage or deterioration, unplug it, discontinue use of the appliance, and have the cord replaced with an exact replacement part by an authorized service personnel.

Protect the power cord from physical or mechanical abuse, such as being twisted, kinked, pinched, closed in a door, or walked upon. Pay particular attention to plugs, wall outlets, and the point where the cord exits the appliance.

Using	⚠ WARNING

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.	Do not drop the projector or allow impact shock. This may cause mechanical failure or personal injury !	Don't look at laser beam directly as it can cause eye damage!

Always open the lens door or remove the lens cap when the projector lamp is on.

Using	⚠ NOTES

Do not place heavy objects on top of projector. This may cause mechanical failure or personal injury!	Take care not to impact the lens particularly when moving the projector.	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 or damage to the unit!	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

Contact the Service Center once a year to clean the internal parts of the projector. Accumulated dust can cause mechanical failure.	When cleaning the plastic parts such as projector case, unplug the power and wipe it with a soft cloth. Do not use cleanser, spray water or wipe with a wet cloth. Especially, never use cleanser (glass cleaner), automobile or industrial shiner, abrasive or wax, benzene, alcohol etc., which can damage the product. 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. It can cause fire, electric shock or product damage (deformation, corrosion and damage).

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 !

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 or damage to the unit!	Refer lamp servicing to qualified service personnel.	Do not mix new batteries with old batteries. This may cause the batteries to overheat and leak.

Only use the specified type of battery.

This could cause damage to the remote control.

Names of parts

Main Body

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

Focus ring

Zoom ring

Power button

Control panel

Foot adjusting button

Front remote control sensor

Connecting Part

HDMI IN

RGB IN-1

USB(SVC Only)

RGB IN-2

RGB OUT

Rear remote control sensor

RS-232C

Video

AC IN

Kensington Security System Connector (Refer to page 14)

Control Panel

MENU Button
Selects or closes menus.

⟨ / ⟩/ ∧ / ∨ Button
Adjusts functions of menus.

AUTO Button
It automatically corrects the
position and the shaking of the
image at the RGB mode.

MENU

SOURCE

AUTO

⊙ OK

⏻ POWER

SOURCE Button
Switches to RGB(Component),
HDMI, Video mode.

⊙ OK Button
Checks present mode and saves the function
changes.

POWER Button
Turn ON/OFF the projector.

Remote Control

POWER Button

MENU Button

∧ / ∨ / < / > Button

EXIT Button

LASER Button
AUTO Button
ZOOM Button
RATIO Button

MODE Button

STILL Button

TIMER Button
W.PEAK Button

SOURCE Button

⊙ OK Button

LAMP Button

SLEEP Button
Brightness Button
Contrast Button
BLANK Button
KEYSTONE Button

GAMMA Button

POWER

MENU   SOURCE

EXIT   ⊙ OK

AUTO   LASER   LAMP

RATIO   ZOOM   SLEEP

MODE

STILL   BLANK   KEYSTONE

TIMER   W.PEAK   GAMMA

Laser Button

* Produces a bright red laser pointer on the
screen for the purpose of indication.
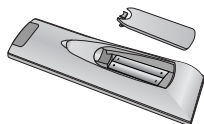**(Don't look at laser beam directly as it
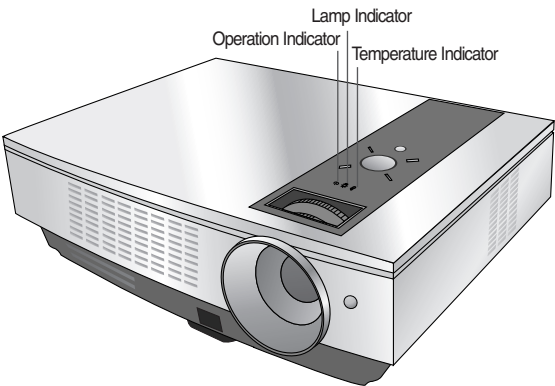can cause eye damage!)**

Installing Batteries

CAUTION
RISK OF EXPLOSION IF BATTERY IS REPLACED WITH AN INCORRECT TYPE.
DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

• Open the battery compartment cover on the back of the remote control.
• Insert the specified type of batteries with correct polarity, match "+" with "+", and
match "-" with "-".
• Install two 1.5V AAA 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.

Lamp Indicator

Operation Indicator | Temperature Indicator

Operation Indicator	Red	Standby.
	Green(flashing)	Lamp is starting up.
	Green	Unit is in operation (Lamp is turned on)
	Orange(flashing)	Projector lamp is cooling (10 sec.)
	Off	Power off.
	Orange	Standby-This mode cools the projector naturally for 4 minutes after it is turned off.
	Red(flashing)	This indicates a Colour Wheel problem.Please contact your local service centre.
Lamp Indicator	Red	Projector lamp is reaching the end of its life and needs to be replaced with a new lamp.
	Red(flashing)	The projector is experiencing an error. Retry Power On again later. If lamp indicator is red (flashing) again, contact the service center.
	Green(flashing)	The lamp cover is open.
Temperature Indicator	Orange	A high temperature state has been detected. Turn the Projector off.
	Red	The Projector has turned off due to excessive heat.
	Red (flashing)	Power has turned off due to problem with the internal cooling fan. Contact your service center.

Accessories
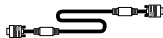
Remote Control

1.5V
1.5V
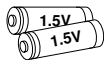
2 Batteries

Owner's manual

CD Owner's manual

Power Cord

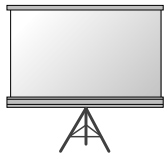Computer Cable

Lens cap and Strap

Optional Extras

* Contact your dealer to purchase these items.
* Contact your service personnel for replacing of lamp.
* The lamp is consumable and needs to be replaced with a new one when it is burned out.
* Optional parts can be changed without notice to improve the quality of the product, and new optional parts can be added.

Projection Screen

Lamp

Ceiling installer for projector
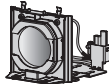
HDMI Cable

Component Cable

Video Cable

RS-232C Cable

RCA to D-Sub Adapter

HDMI to DVI Cable

Installing and Composition

Installation Instructions

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

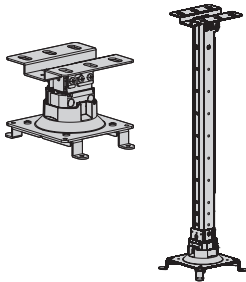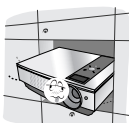**Provide proper ventilation for this projector.**

● 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.
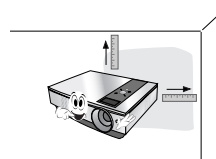
● Do not place the projector on a carpet, rug or other similar surface. It may prevent a adequate ventilation of the projector bottom. This product should be mounted to a wall or ceiling only.

● Never push projector or spill any kind of liquid into the projector.

● Leave an adequate distance(30cm/12 inches 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.41)

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

● This may cause overheating of the projector.

Do not obstruct the slots and openings of the projector. This may cause overheating and create a fire hazard.

The 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 projector Screen. This is a normal result of the manufacturing process and does not indicate a malfunction.

To display DTV programs, it is necessary to purchase a DTV receiver (Set-top Box) and connect it to the projector.
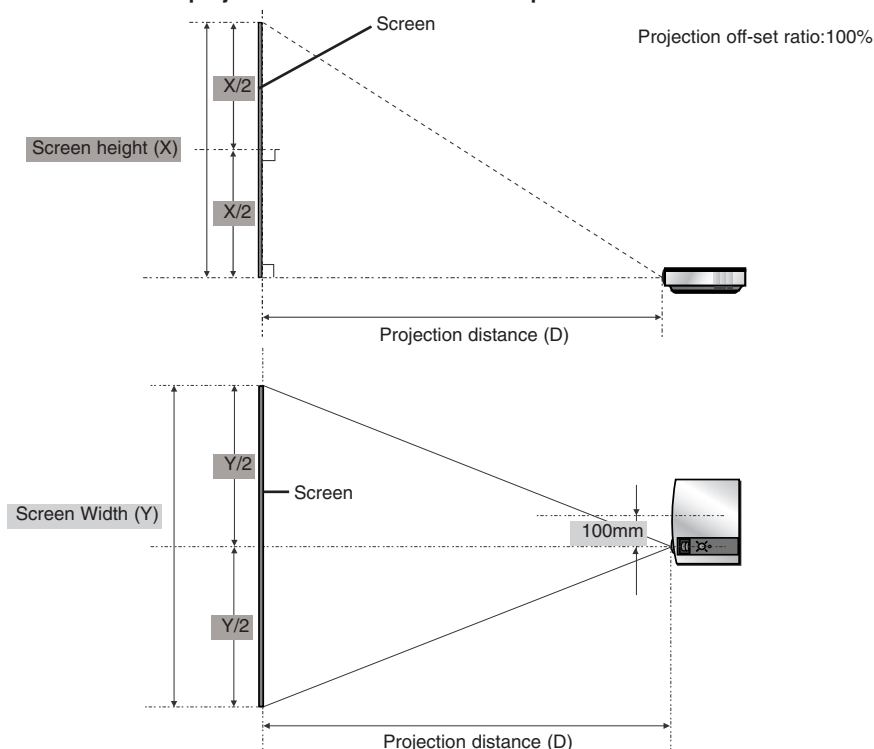
When the remote control does not work during operation.

● The remote control may not work when a lamp equipped with electronic ballast or a three-wavelength lamp is installed. Replace those lamps with international standard products to use the remote control normally.

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 with the desired distance from the screen. The distance between the projector and the screen determines the actual size of the image.
3. Position the projector so that the lens is set at a right angle to the screen. If the projector is not set at a right angle, the screen image will be crooked. If this is so then the keystone adjustment may correct this (Refer to page 27.).
4. Connect the cables of the projector to a wall power socket and other connected sources.

projection distance based on the picture format

Screen

Projection off-set ratio:100%

X/2

Screen height (X)

X/2

Projection distance (D)

Y/2

Screen — Screen

Screen Width (Y)

100mm

Y/2

Projection distance (D)

4 : 3 Scale					
Image				Projection Distance	
Diagonal Size (inch)	Diagonal Size (mm)	Horizontal Size (mm)	Vertical Size (mm)	Wide Distance (mm)	Tele Distance (mm)
40	1016	813	610	1265	1506
50	1270	1016	762	1586	1889
60	1524	1219	914	1906	2272
70	1778	1422	1067	2230	2656
80	2032	1626	1219	2552	3039
90	2286	1829	1372	2873	3422
100	2540	2032	1524	3195	3805
120	3048	2438	1829	3839	4571
140	3556	2845	2134	4482	5338
160	4064	3251	2438	5125	6104
180	4572	3658	2743	5769	6870
200	5080	4064	3048	6412	7636
220	5588	4470	3353	7056	8403
240	6096	4877	3658	7699	9169
260	6604	5283	3962	8343	9935
280	7112	5690	4267	8986	10701
300	7620	6096	4572	9630	11468

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

Using Kensington Security System

● The projector has a 'Kensington' Security System Connector on the side 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 equipment such as notebook PCs or projectors.

● Kensington Security System is an optional item.
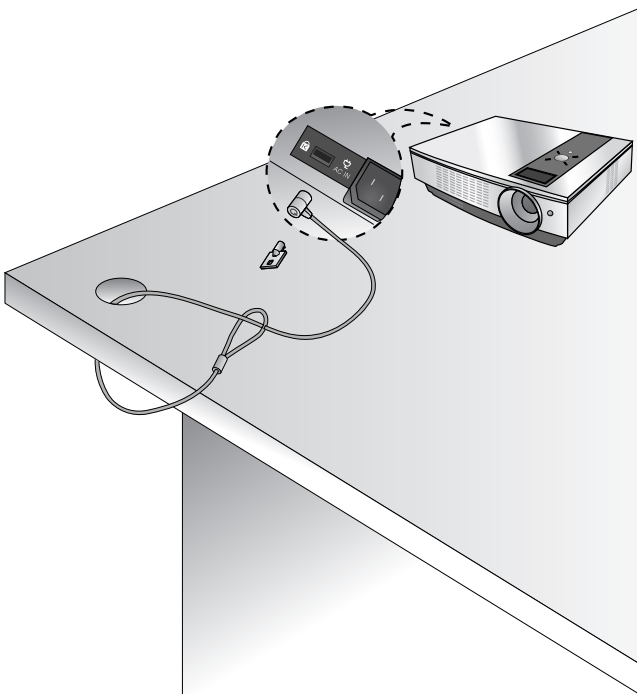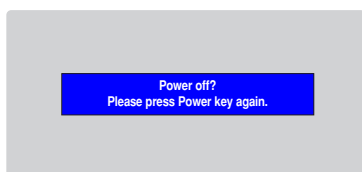
Turning on the Projector

1. Connect power cord correctly.

2. Remove the lens cap. If it is left on, it could become deformed due to the heat produced by the projection lamp.

3. Press the **POWER** button on the remote control or top cover.
   (Green operation indicator flashes if lamp is in start-up cycle.)
   ● An image will appear after the operation indicator light turns (Green).
   ● Select the source mode with the SOURCE button.

---Note!--

  * Do not disconnect the power cord during the suction/discharge fan in operation. If the power cord is disconnected during the suction/ discharge fan in operation, it may takes longer to activate the lamp after turning on the power and the lifespan of the lamp may be shortened.

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 turn off the power.

3. If the operation indicator LED is orange and blinking, do not disconnect(10 sec.) the supply until the operation indicator LED is lit constantly (orange).

   ● If the operation indicator LED is orange and blinking, the power button on the top cover or on the remote control will not operate.
   ● This projector features the Quick Power On/Off function that allows a user to turn it on and off quickly.

Power off?
**Please press Power key again.**

* What is the **Quick Power On/Off** function?

  The projector enters into Standby mode without waiting it is cooled.
  If Standby mode continues for a certain amount of time, the projector can operate without cooling when it is turned on.
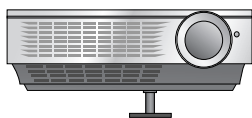
Focus and Position of the Screen Image

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

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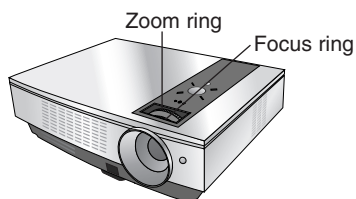
● To adjust the focus of the image, rotate the focus ring which is the outer ring on the lens.
● To adjust the size of the image, rotate the zoom ring which is the inner ring on the lens.

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

1. While pressing the foot adjusting button, raise or lower the projector to place the screen image in the proper position.
2. Release the button to lock the foot in its new position.
3. Turn the foot at the back left or right to make a fine tune of the length of the projector.
   After raising the front foot, do not press down on the projector.

Selecting source mode

1. Press the **SOURCE** button on the remote control or the control panel.

```
RGB1
RGB2
HDMI
Video
MENU  Exit        ⊙ OK
```
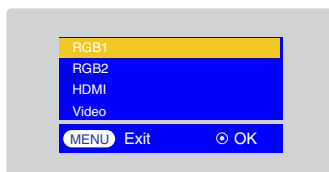
2. After moving into desiring input by pressing *,*button,please press the confirm button.

● When a signal cable is plugged in and there 's a signal,the selecting item is activated as white,and if there 's no signal,the selecting item is deactivated as gray.
● If pressing the input selection button,it is possible to select activated item.
● It is possible to watch by selecting RGB 1 for Component 1 input and RGB 2 for Component 2 input,and in case of Component,even though there 's an input signal,the OSD item is not activated.
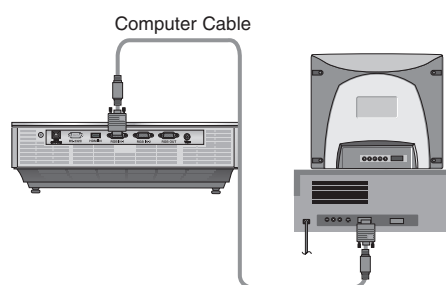
Connection

Connecting to a Desktop PC

* You can connect the projector to a computer of VGA, SVGA, XGA and SXGA output.
* Refer to page 40 for the supported monitor displays of the projector.
* You can select an RGB input from the Monitor Out menu that will be output to RGB OUT(RGB1 or RGB2).

<To use by connecting to RGB>

Computer Cable

Connect the **RGB IN-1** of the projector and the computer output port with computer cable.

  * You can also connect to the RGB IN-2 port.

<To use by connecting to HDMI terminal>

HDMI to DVI Cable

Please connect projector 's HDMI IN terminal and computer 's output terminal by using HDMI to DVI cable.
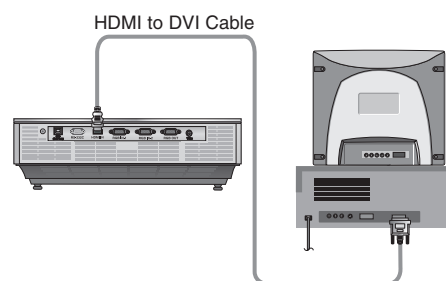
Connecting to a Notebook PC

< How to connect >

Computer Cable

Connect the **RGB IN-1** of the projector and the computer output port with computer cable.

  * If you set your computer to output the signal to both the display of your computer and the external projector, the picture of the external projector may not appear properly. In such cases, set the output mode of your computer to output the signal only to the external projector. For details, refer to the operating instructions supplied with your computer.

  * You can also connect to the RGB IN-2 port.
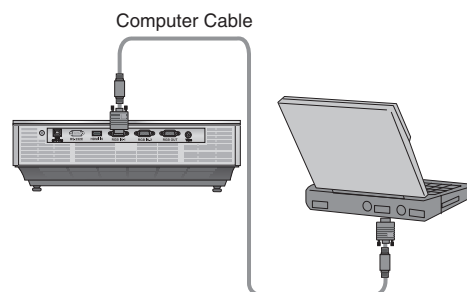
Connecting to a Video Source

* You can connect a VCR, a camcorder or any other compatible video image source to the projector.

< How to connect >

a. Connect the Video input jacks of the projector to the output
   jacks of the A/V source with Video cable.

<Video>

Connecting to a DVD

* The output jacks (Y, PB, PR) of the DVD might be labeled as Y, Pb, Pr / Y, B-Y, R-Y / Y, Cb, Cr according to the equipment.

< How to connect >

a. Connect the DVD Component cable to the **RCA to D-Sub
   Adapter** and then connect the **RCA to D-Sub Adapter** to
   RGB IN-1 of the projector.
   * When connecting the component cable, match the jack colors
     with the component cable.(Y=green, PB=blue, PR=red)
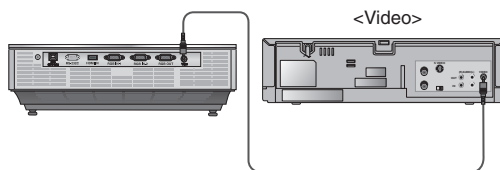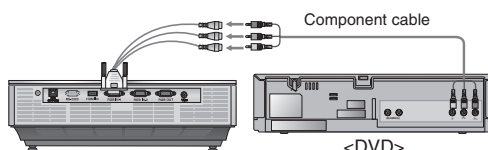
   * You can also connect to the RGB IN-2 port.

Component cable

<DVD>

Signal	Component
480i	O
480p	O
720p	O
1080i	O
576i	O
576p	O

Connecting to a D-TV Set-Top Box

* **To receive D-TV programmes, it is necessary to purchase a D-TV receiver (Set-Top Box) and connect it to the projector.**
* **Please refer to the owner's manual of the D-TV Set-Top Box for the connection between projector and D-TV Set-Top Box.**

< How to connect a HDMI source >

a. Connect the **HDMI IN** terminal of the projector to the **HDMI**
   output terminal of the D-TV Set-Top Box via HDMI cable.

b. Use a DTV receiver with DTV 480p(576p)/720p/1080i mode.
   * No support of audio.

HDMI Cable

<D-TV Set-Top Box>
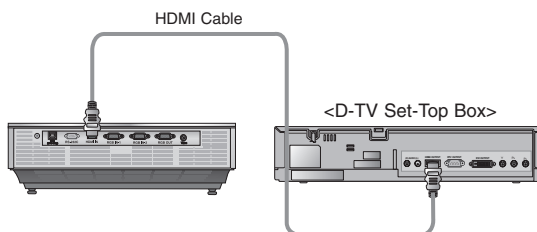
< How to connect a Component source >

a. Connect the D-TV Set-Top Box Component cable to the
   RCA to D-Sub Adapter and then connect the **RCA to D-
   Sub Adapter** to **RGB IN-1** of the projector.
   * When connecting the component cable, match the jack colors
     with the component cable.(Y=green, PB=blue, PR=red)
   * You can also connect to the RGB IN-2 port.
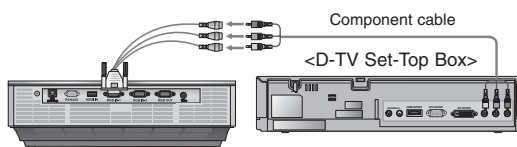   * No support of audio.

Component cable

<D-TV Set-Top Box>

Function

* In this manual, the OSD(On Screen Display) may be different from your Projector's because it is just an example to help with the Projector operation.
* This operating guide explains operation of RGB(PC) mode mainly.

Video Menu Options

< RGB mode >

Adjusting Video

1. Press the **MENU** button and then use $<$, $>$ button to select the ▣ menu.

2. Press the $\wedge$, $\vee$ button to select a video item you want to adjust.

3. Press the $<$, $>$ button to adjust the screen condition as you want.
   - Each adjustment of ▣ menu options will not affect other inputs.
   - When receiving an NTSC signal, the picture item **Tint** is displayed and can be adjusted.(60Hz only)
   - You can adjust contrast by pressing the ◑ button on the remote control.
   - You can adjust brightness by pressing the ☼ button on the remote control.
   - Press the **MENU** button twice or the **EXIT** button to exit the menu screen.

Picture mode	< Normal >
Contrast	50
Brightness	50
Sharpness	50
Color R	50
Color G	50
Color B	50
MENU Exit <> Move ⊙ OK	

< Video mode >

Picture mode	< Normal >
Contrast	80
Brightness	50
Color	50
Sharpness	50
Tint	0
MENU Exit <> Move ⊙ OK	
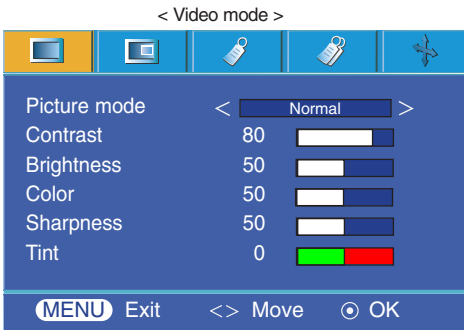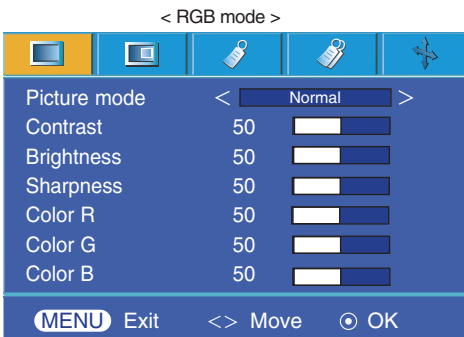
Picture mode

* Use Picture mode function to set the projector for the best picture appearance.

1. Press the **MODE** button on the remote control.

2. Press the $<$, $>$ button to adjust the screen condition as you want.

   - Each press of the $<$, $>$ button changes the screen as shown below.

< Normal >	< Presentation >	< Sports >
< User >		< Film >
< Bright >	< Golf >	< Game >
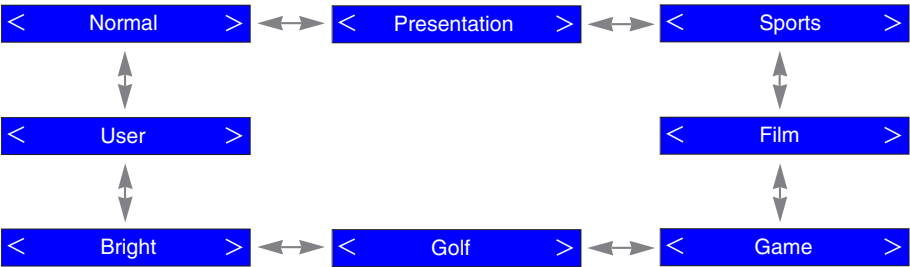
   - You can use this function through the **MENU** button.
   - To exit the menu display, press the **EXIT** button.

Color Temperature Control

- To initialize values (reset to default settings), select the **Natural** option.

1. Press the **MENU** button and then use $<$, $>$ button to select the 🔲 menu.

2. Press the $\wedge$, $\vee$ button to select **Color temp.** item.

3. Press the $<$, $>$ button to make desired adjustments.

- Each press of the $<$, $>$ button changes the screen as shown below.

| Natural | ←→ | Cool | ←→ | Medium | ←→ | Warm |

- This function can be inactivated depends on the Picture mode. When the Picture mode is set in Bright or Golf, you can't adjust Color temperature function.
- Press the **MENU** button twice or the **EXIT** button to exit the menu screen.

🔲	🔲	🖊	🖊	⤴

Color temp.	< Natural >
Gamma	< Normal >
Gamma curve shift	
Brilliant color ™	< On >
White peaking	10 ▭
Expert Color	
Reset	

(MENU) Prev.   ◇ Move   <> Select

Gamma Function

1. Press the **GAMMA** button on the remote control.

2. Press the $<$, $>$ button to select the screen condition you want.

- Each press of the $<$, $>$ button changes the screen as shown below.
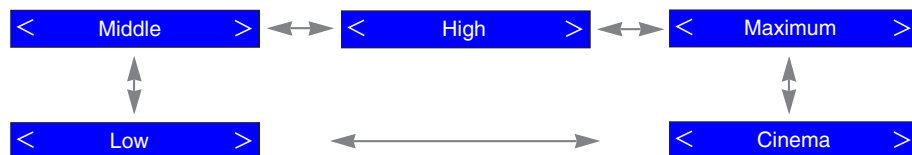
| < Middle > | ←→ | < High > | ←→ | < Maximum > |
| < Low > | | | | < Cinema > |

- You can use this function through the **MENU** button.
- To exit the menu display, press the **EXIT** button.

Gamma curve shift Function

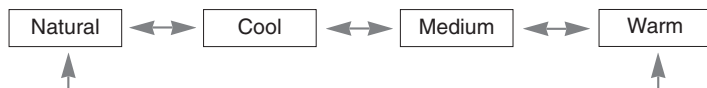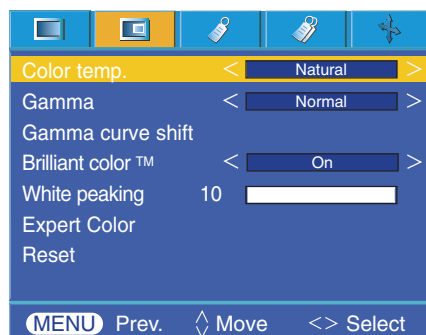- This function shifts the gamma curves for Red, Green and Blue individually to adjust brightness.

1. Press the **MENU** button and then use $<$, $>$ button to select the 🔲 menu.

2. Press the $\wedge$, $\vee$ button to select **Gamma curve shift** item.

3. Press the ⊙ **OK** button.

4. When the window below appears, press $\wedge$, $\vee$ button to move between the items and the $<$, $>$ buttons to adjust the screen as you want.

- **Gamma curve shift Red, Green, Blue** can be adjusted between -20 and 20.
- Press the **MENU** button twice or the **EXIT** button to exit the menu screen.

🔲	🔲	🖊	🖊	⤴

Color temp.	< Natural >
Gamma	< Normal >
Gamma curve shift	Press OK Key
Brilliant color ™	< On >
White peaking	10 ▭
Expert Color	
Reset	

(MENU) Prev.   ◇ Move   ⊙ OK

Gamma Curve Shift Red	0 ▭
Gamma Curve Shift Green	0 ▭
Gamma Curve Shift Blue	0 ▭
Reset	
⊙ Prev. ◇ Move <> Adjust	
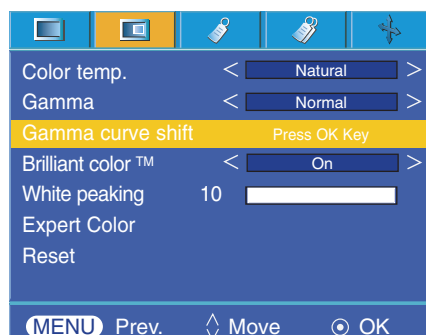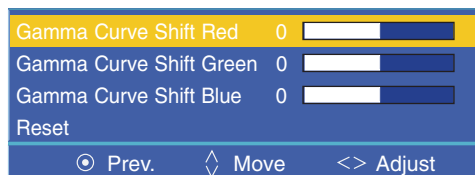
Brilliant color ™ Function

1. Press the **MENU** button and then use $<$, $>$ button to select the ▤ menu.

2. Press the $\wedge$, $\vee$ button to select **Brilliant color ™** item.

3. Press the $<$, $>$ button to select On or Off.

   ● Press the **MENU** button twice or the **EXIT** button to exit the menu screen.

* What is the **Brilliant color ™** function?

   This function increases the entire brightness of the screen or decreases it a little to make the rich grayscale color.

▤	▣	🖊	🖊	⤴

Color temp.	$<$ Natural $>$
Gamma	$<$ Normal $>$
Gamma curve shift	
Brilliant color ™	$<$ On $>$
White peaking	10
Expert Color	
Reset	

MENU Prev.   ◇ Move   <> Select

White peaking Function

1. Press the **W.PEAK** button on the remote control.

2. Press the $<$, $>$ button to select the screen condition you want.

   ● The default value may change depending on input mode.
   ● **White peaking** can be adjusted from 0 to 10.
   ● Adjust to higher setting to achieve brighter picture. Adjust to lower setting for darker picture.
   ● You can use this function through the **MENU** button.
   ● To exit the menu display press the **EXIT** button.

White peaking	10
⊙ Exit	<> Adjust
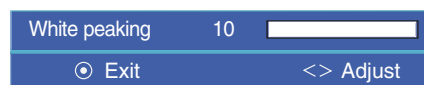
Black level Function

1. Press the **MENU** button and then use $<$, $>$ button to select the ▤ menu.

2. Press the $\wedge$, $\vee$ button to select **Black level** item.

3. Press the $<$, $>$ button to select Low or High.

   ● This function works in the following mode : HDMI(Only activates in DTV signal), Video
   ● To exit the menu display, repeatedly press the **MENU** button.

▤	▣	🖊	🖊	⤴

Color temp.	$<$ Natural $>$
Gamma	$<$ Normal $>$
Gamma curve shift	
Brilliant color ™	$<$ On $>$
White peaking	10
Black level	$<$ Low $>$
Expert Color	
Reset	

MENU Prev.   ◇ Move   <> Select

* What is the **Black level** function?

When you watch the movie, this function adjusts the set to the best picture appearance. Adjusting the contrast and the brightness of the screen using the black level of the screen.
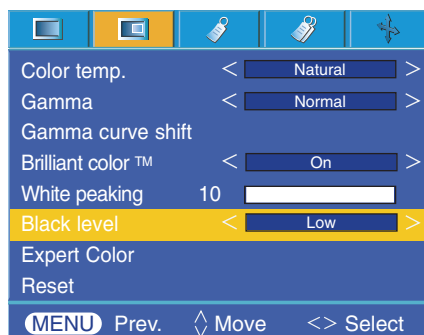
Expert color Function

- This function allows a user to adjust the Gain, Saturation and Hue for Red,
  Green, Blue, Cyan, Magenta and Yellow individually.

1. Press the **MENU** button and then use $<$, $>$ button to select the 🖼 menu.

2. Press the $\wedge$, $\vee$ button to select **Expert Color** item.

3. Press the ⊙**OK** button.

Red Gain	50	
Green Gain	50	
Blue Gain	50	
Cyan Gain	50	
Mgt Gain	50	
Yellow Gain	50	
Saturation-Red	50	
Saturation-Green	50	
Saturation-Blue	50	
Saturation-Cyan	50	
Saturation-Mgt	50	
Saturation-Yellow	50	
Hue-Red	0	
Hue-Green	0	
Hue-Blue	0	
Hue-Cyan	0	
Hue-Mgt	0	
Hue-Yellow	0	
Reset		
⊙ Prev.	⬍ Move	<> Adjust

Color temp.	◄ Natural	►
Gamma	◄ Normal	►
Gamma curve shift		
Brilliant color ™	◄ On	►
White peaking	10	
Expert Color		
Reset	Press OK Key	
(MENU) Prev.	⬍ Move	⊙ OK

4. When the window above appears, press $<$, $>$ button.

Red Gain	50	
⊙ Exit	⬍ Move	<> Adjust

5. Press the $\wedge$ or $\vee$ button to move between the items and the $<$ or $>$ buttons to adjust the screen as you want.

- **Red, Green, Blue, Cyan, Magenta** and **Yellow Gain** can be adjusted between 0 and 100.
- **Saturation-Red, Green, Blue, Cyan, Magenta** and **Yellow** can be adjusted between 0 and 100.
- **Hue-Red, Green, Blue, Cyan, Magenta** and **Yellow** can be adjusted between -50 and 50.
- Press the **MENU** button twice or the **EXIT** button to exit the menu screen.
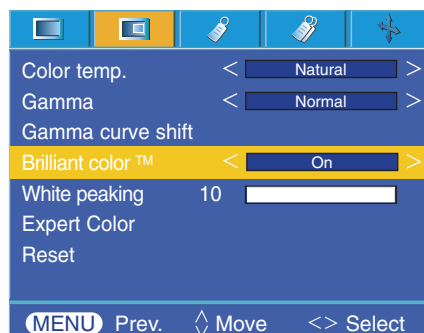- An advanced settings function is possible to be saved according to an image mode.

Reset

- To return to the factory default settings, select [**Reset**] with $\wedge$, $\vee$ buttons and press ⊙**OK** button.

Special Menu Options

Selecting Language

1. Press the **MENU** button and then use $<$, $>$ button to select the 🖊 menu.

2. Press the $\wedge$, $\vee$ button to select **Language** item.

3. Press the $<$, $>$ button to select the language you want to use.

   ● On-Screen-Display (OSD) is displayed in the selected language.
   ● Press the **MENU** button twice or the **EXIT** button to exit the menu screen.
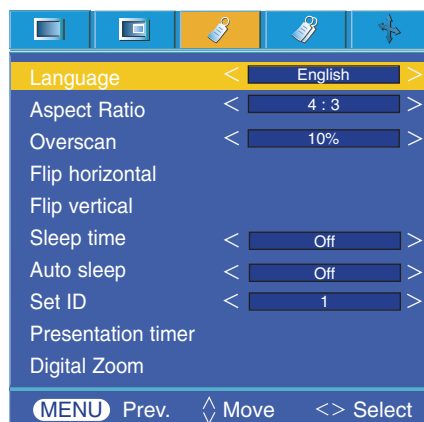
Language	<	English	>
Aspect Ratio	<	4 : 3	>
Overscan	<	10%	>
Flip horizontal			
Flip vertical			
Sleep time	<	Off	>
Auto sleep	<	Off	>
Set ID	<	1	>
Presentation timer			
Digital Zoom			

MENU Prev. ◇ Move <> Select

Using ARC Function

1. Press the **RATIO** button.
   Each press of the button changes the display as below.

4 : 3   16:9

● You can also use this function by using the **MENU** button.

Overscan Function

1. Press the **MENU** button and then use $<$, $>$ button to select the 🖊 menu.

2. Press the $\wedge$, $\vee$ button to select **Overscan** item.

3. Press the $<$, $>$ buttons.

   ● The **Overscan** function can be adjusted only in RGB, HDMI and Component modes.
   ● The **Overscan** function can be adjusted between Off and 10%.
   ● The **Overscan** function can not be adjusted if the Zoom -/+ in Digital Zoom is set to a value other than 100%.
   ● Press the **MENU** button twice or the **EXIT** button to exit the menu screen.

Language	<	English	>
Aspect Ratio	<	4 : 3	>
Overscan	<	10%	>
Flip horizontal			
Flip vertical			
Sleep time	<	Off	>
Auto sleep	<	Off	>
Set ID	<	1	>
Presentation timer			
Digital Zoom			

MENU Prev. ◇ Move <> Select
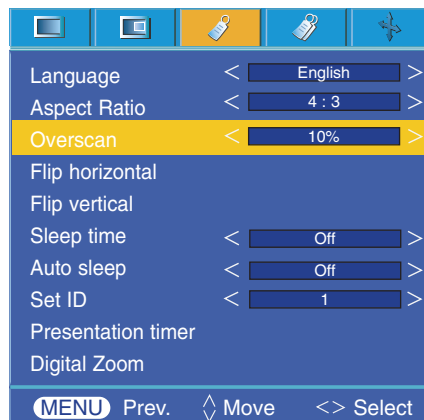
Flip horizontal Function

* This function reverses the projected image horizontally.
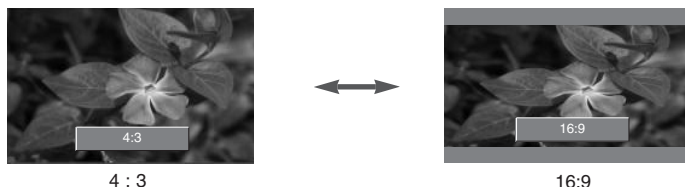 Use this function when rear projecting an image.

1. Press the **MENU** button and then use $<$, $>$ button to select the ✎ menu.

2. Press the $\wedge$, $\vee$ button to select **Flip horizontal** item.

3. Press the ⊙ **OK** button to see reversed image.

  ● Each time you press the ⊙ **OK** button, the image will be reversed.
  ● Press the **MENU** button twice or the **EXIT** button to exit the menu screen.

Language	$<$	English	$>$	
Aspect Ratio	$<$	4 : 3	$>$	
Overscan	$<$	10%	$>$	
Flip horizontal		To flip		
Flip vertical				
Sleep time	$<$	Off	$>$	
Auto sleep	$<$	Off	$>$	
Set ID	$<$	1	$>$	
Presentation timer				
Digital Zoom				

(MENU) Prev.   ◊ Move   ⊙ OK

Flip vertical Function

* This function reverses the projected image vertically.
* When you hang the projector upside down from the ceiling,
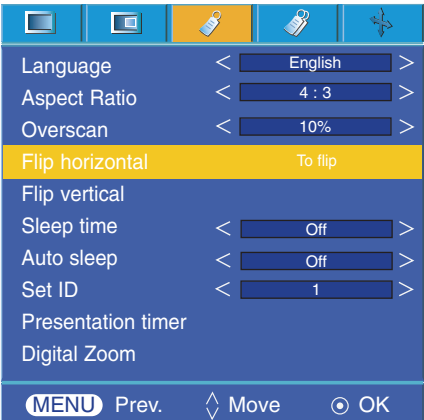 you will need to reverse the image vertically and horizontally.

1. Press the **MENU** button and then use $<$, $>$ button to select the ✎ menu.

2. Press the $\wedge$, $\vee$ button to select **Flip vertical** item.

3. Press the ⊙ **OK** button to see reversed image.

  ● Each time you press the ⊙ **OK** button, the image will be reversed.
  ● Press the **MENU** button twice or the **EXIT** button to exit the menu screen.

Language	$<$	English	$>$	
Aspect Ratio	$<$	4 : 3	$>$	
Overscan	$<$	10%	$>$	
Flip horizontal				
Flip vertical		To flip		
Sleep time	$<$	Off	$>$	
Auto sleep	$<$	Off	$>$	
Set ID	$<$	1	$>$	
Presentation timer				
Digital Zoom				

(MENU) Prev.   ◊ Move   ⊙ OK

Sleep time Function

* The sleep timer turns the projector off at the preset time.

1. Press the **SLEEP TIME** button of remote control.

2. Press the $<$, $>$ button to select the desired preset time.

  ● Each press of the $<$, $>$ button changes the screen as shown below.
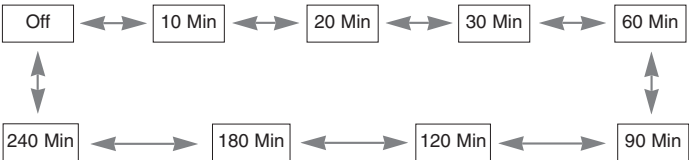
  Off ⟷ 10 Min ⟷ 20 Min ⟷ 30 Min ⟷ 60 Min
  ↕   ↕
  240 Min ⟷ 180 Min ⟷ 120 Min ⟷ 90 Min

  ● You can use this function through the **MENU** button.
  ● To exit the menu display press the **EXIT** button.

Auto sleep Function

* This function turns the projector off automatically after the preset time is passed when there is no signal.

1. Press the **MENU** button and then use $<$, $>$ button to select the 🖋 menu.

2. Press the $\wedge$, $\vee$ button to select **Auto sleep** item.

3. Press the $<$, $>$ button to select the desired preset time.

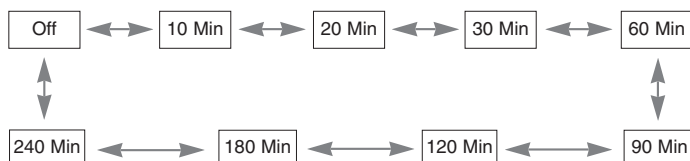● Press the **MENU** button twice or the **EXIT** button to exit the menu screen.

| Off | ⟷ | 10 Min | ⟷ | 20 Min | ⟷ | 30 Min | ⟷ | 60 Min |

| 240 Min | ⟷ | 180 Min | ⟷ | 120 Min | ⟷ | 90 Min |

Language	< English >
Aspect Ratio	< 4 : 3 >
Overscan	< 10% >
Flip horizontal	
Flip vertical	
Sleep time	< Off >
Auto sleep	< Off >
Set ID	< 1 >
Presentation timer	
Digital Zoom	
MENU Prev.	◊ Move <> Select

Presentation timer Function

1. Press the **TIMER** button of remote control.

2. Press the $\wedge$, $\vee$ button to select **Time alarm** or **Time keeper** item.

Time alarm	< Off >
Time Keeper	< Off >
MENU Exit	◊ Move <> Select
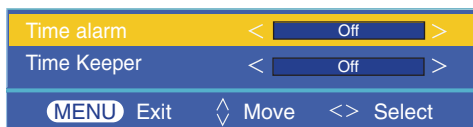
3. Press the $<$, $>$ button to select the desired preset time.

4. The timer starts to operate if you select specific time.

● Time alarm function : If you select a specific time, it is displayed in minute units. After 1 minute, the remaining time is displayed at the bottom right of the screen, and then disappears after 5 seconds. When the remaining time is displayed, other OSD windows are closed. When the set time is reached, '0 minute' flickers 10 times at 1 second intervals, and then disappears.
● Time keeper function : If you select a specific time, it continues to be displayed in minute(') and second(") units. Even though other OSD windows appear, the remaining time is displayed again after the windows are closed. When the set time is reached. 0' 00" flickers 10 times at 1 second intervals, and then disappears.

5. If the set time disappears because of the use of other menus, press the **TIMER** button on a remote to display the set time again.

● The **Time alarm** function and the **Time keeper** function cannot be used at the same time.
● The **Time alarm** function can be set from 5 to 60 minutes at 5 minute intervals (Off, 5, 10, 15, 20, ..., 55, 60 minutes).
● The **Time keeper** function can be set from 1 to 10 minutes at 1 minute intervals, and from 10 to 60 minutes al 5 minute intervals (Off, 1, 2, 3, 4, ..., 8, 9, 10, 15, 20, 25, ..., 55, 60 minutes).
● You can use this function through the **MENU** button.
● Press the **EXIT** button to exit the menu screen.

Using Digital Zoom Function

* This function is available only in RGB input mode.The Zoom -/+and Position values return to their defaults when
  you change the SOURCE or input signal,or turn the power off.

Adjusting the Zoom

1. Press the **ZOOM** button on the remote control.

2. Press the ∧ , ∨ button to select **Zoom -/+** item.

Zoom -/+	< ▮ 100 % >
Position	
Reset	
MENU Exit ◇ Move <> Select	
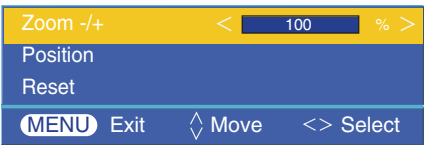
3. Press the < , > button to adjust Zoom -/+ to your
   choice.

   ● You can adjust Zoom -/+ in 5%increments from 100%to
     250%.
   ● You can also use this function by using the **MENU** button.
   ● Press the **EXIT** button to exit the menu screen.

Adjusting the Position

1. Press the **ZOOM** button on the remote control.

2. Press the ∧ , ∨ button to select **Position** item.

Zoom -/+	< ▮ 110 % >
Position	Press OK to Start
Reset	
MENU Exit ◇ Move ⊙ OK	
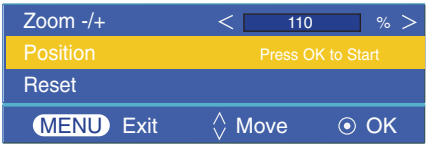
3. Press the ⊙ **OK** button. When the window below appears
   at the bottom right corner of the screen, press the ∧ / ∨ /
   ∧ / ∨ to adjust the position. When the arrow turns black,
   maximum adjustment has been reached and no further
   adjustment can be made.

   ● Position is activated only when Zoom --/+is set to more
     than 105%.
   ● You can also use this function by using the **MENU** button.
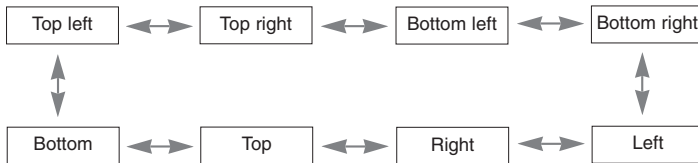   ● Press the **EXIT** button to exit the menu screen.

To use keystone function

1. Press the **KEYSTONE** button on the remote control.

2. Press the $<$, $>$ button to select a item.

| Top left | ⟷ | Top right | ⟷ | Bottom left | ⟷ | Bottom right |

| Bottom | ⟷ | Top | ⟷ | Right | ⟷ | Left |

3. Press the $\wedge$, $\vee$ button to select the item (H or V)you want,
   and press the $<$, $>$ button to adjust it.

   ● You can adjust each item from 0 to 100.
   ● The default value may change depending on input mode.
   ● You can also use this function by using the **MENU** button.
   ● Press the **MENU** button to exit the menu screen.

Keystone

Top left

H 0

V 0

Background < Signal >

Keystone reset

MENU Exit <> Select
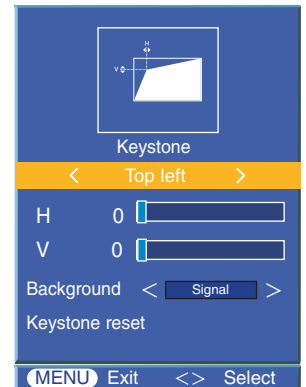
To select a background image

1. Press the **KEYSTONE** button on the remote control.

2. Please select a **Background** image by $\wedge$, $\vee$ button.

3. Please select desiring item by $<$, $>$ button.

   ● If there 's no input signal,it is possible to adjust
     keystone by using the adjusting pattern.

V 0

Background < Signal >

Keystone reset

MENU Exit <> Select
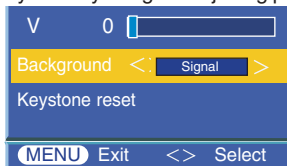
To initialize keystone

1. Press the **KEYSTONE** button on the remote control.

2. Please select keystone initialization by $\wedge$, $\vee$ button.

3. Press the ⊙**OK** button.Keystone adjusting figure
   returns to the factory price.

V 0

Background < Signal >

Keystone reset   Press OK Key

MENU Exit ⊙ OK

Using Blank Function

* This function may be effective if you need to get the attention of the audience during presentations, meetings or briefings.

1. Press the **BLANK** button.
   ● The screen turns off to a background color.
   ● You can choose the background color.
     (Refer to **'Selecting blank image color'**)

2. Press any button to cancel the blank function.
   ● To temporarily turn off the lamp, press BLANK on the remote control. Do not block the projection lens with any
     objects when the projector is under operation as this could cause the objects to become heated and deformed
     or even cause a fire.
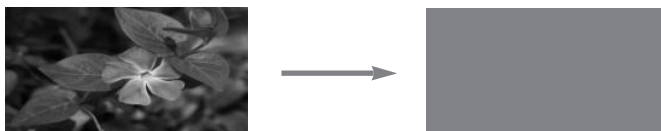
Selecting Blank image

1. Press the **MENU** button and then use $<$, $>$ button to select the ✎ menu.

2. Press the $\wedge$, $\vee$ button to select **Blank image** item.

3. Press the $<$, $>$ button to select the color you want to use.

- Background image will be altered to the selected Blank image function.
- You can choose blue, black, green, or captured image for the Blank image.
- If you have a captured image, you can use it as a blank image instead of logo image. And you only have one last captured image.
- When you select the Captured image, displays a logo, if you don't have a captured image.
- Press the **MENU** button twice or the **EXIT** button to exit the menu screen.

Keystone		
Blank Image	< Black	>
Captured Image		
Lamp mode	< High bright	>
Monitor Out	< RGB1	>
Lamp time	11 Hr	

MENU Prev.   ◇ Move   <> Select

Captured Image Function
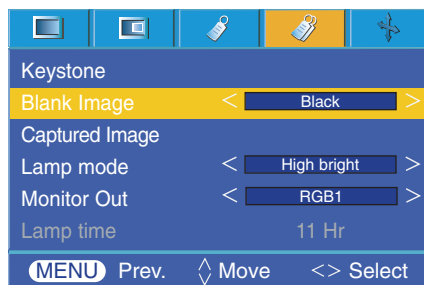
1. Press the **MENU** button and then use $<$, $>$ button to select the ✎ menu.

2. Press the $\wedge$, $\vee$ button to select **Captured Image** item.

3. Press the ⊙**OK** button to capture actual screen image.

Confirm Screen Capture

OK   Cancel

Keystone		
Blank Image	< Black	>
Captured Image	To set	
Lamp mode	< High bright	>
Monitor Out	< RGB1	>
Lamp time	11 Hr	

MENU Prev.   ◇ Move   ⊙ OK
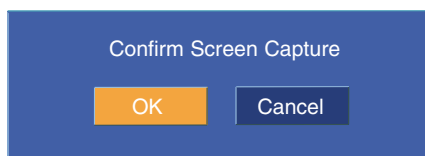
4. Press the ⊙**OK** button again to save Screen capture image.

- You can use the captured image as a Blank image.
- You can not use the remote control when this function is in use.
- If you want see your captured image, select Captured image in the Blank image function.
- Press the **MENU** button twice or the **EXIT** button to exit the menu screen.
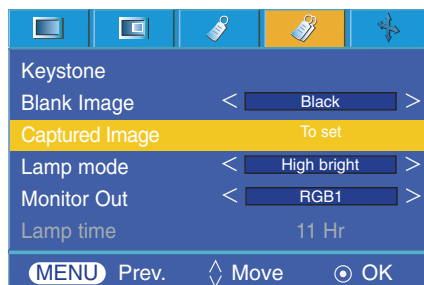
Lamp mode Function

1. Press the **LAMP** button of remote control.

2. Press the $<$, $>$ button to adjust the screen condition as you want.

- Each press of the $<$, $>$ button changes the screen as shown below.

< High Bright > ←→ < Economic >

- The menu automatically disappears at specific temperature (more than 35°C).
- It is automatically changed into power saving mode at specific temperature (more than 35°C).
- You can use this function through the **MENU** button.
- To exit the menu display, press the **EXIT** button.

Using Monitor out Function

* You can select either of the two RGB inputs.

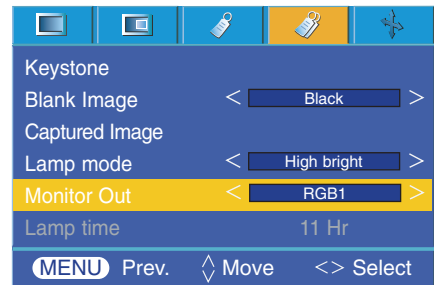1. Press the **MENU** button and then use 〈 , 〉 button to select the ✍ menu.

2. Press the ∧ , ∨ button to select **Monitor Out** item.

3. Press the 〈 , 〉 button to select **RGB1, RGB2** or **Auto**.

   ● Press the **MENU** button twice or the **EXIT** button to exit the menu screen.
   ● Auto mode is the mode to output an image of currently seeing input among RGB1 or RGB2 input.

		✐	✍	✥
Keystone				
Blank Image		〈 Black	〉	
Captured Image				
Lamp mode		〈 High bright	〉	
Monitor Out		〈 RGB1	〉	
Lamp time		11 Hr		
MENU Prev.	◊ Move	〈〉 Select		

Checking lamp time

1. Press the **MENU** button and then use 〈 , 〉 button to select the ✍ menu.

2. The used lamp time is displayed.

   ●When projector lamp is reaching the end of its life, the lamp indicator will turn red. (Refer to the page 10.)
   ●The lamp warning LED illuminates red continuously in the case of excessive lamp time.
   ● Press the **MENU** button twice or the **EXIT** button to exit the menu screen.

		✐	✍	✥
Keystone				
Blank Image		〈 Black	〉	
Captured Image				
Lamp mode		〈 High bright	〉	
Monitor Out		〈 RGB1	〉	
Lamp time		11 Hr		
MENU Exit	◊ Move	⊙ OK		
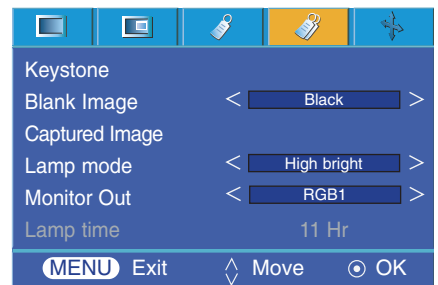
Using Still Function

1. Press the **STILL** button of remote control.

   * You can freeze the input image.

<Moving Image>   <Still Image>

2. To exit STILL, press any button .

   * The STILL function will release automatically after approximately 10 minutes.

Screen Menu Options

* This function assures you of getting the best video quality by automatically adjusting the horizontal size and synchronization of the image.
* Auto Tracking function works in RGB PC input only.

1. Press the **AUTO** button of the remote controller.
   ● Image positioning and synchronization are automatically adjusted.

2. If any more manual adjustment is needed according to the various PC mode inputs even after the auto-correction, execute **Phase, Clock, Horizontal** and **Vertical** function in ⤴ menu. In certain circumstances, you can't get the best picture quality by only using auto-correction.

Auto Configure

─ **Note!** ─────────────────────────────────────

You can also use this function by using the MENU button. (Only in RGB mode)

For best results, perform this function while displaying a still image.

───

Using Phase Function

1. Press the **MENU** button and then use ＜ , ＞ button to select the ⤴ menu.

2. Press the ∧ , ∨ button to select **Phase** item.

3. Press the ＜ , ＞ button to make desired adjustments.

   ● **Phase** adjustment range is 0 ~63.
   ● The variable range can be different depends on input resolutions.
   ● Press the **MENU** button twice or the **EXIT** button to exit the menu screen.

Auto Configure				
Phase	8			
Clock	0			
Horizontal	0			
Vertical	0			
MENU Prev.	◇ Move	<> Adjust		
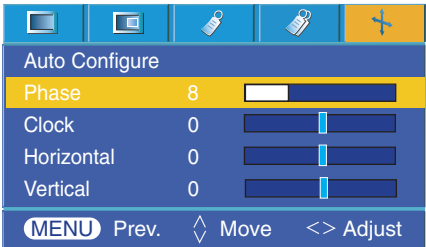
Using Clock Function

1. Press the **MENU** button and then use ＜ , ＞ button to select the ⤴ menu.

2. Press the ∧ , ∨ button to select **Clock** item.

3. Press the ＜ , ＞ button to make desired adjustments.

   ● **Clock** adjustment range is -20 ~ 20.
   ● The variable range can be different depends on input resolutions.
   ● Press the **MENU** button twice or the **EXIT** button to exit the menu screen.

Auto Configure				
Phase	8			
Clock	0			
Horizontal	0			
Vertical	0			
MENU Prev.	◇ Move	<>Adjust		

Using Horizontal Function
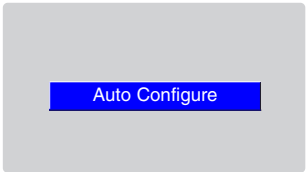
1. Press the **MENU** button and then use $<$, $>$ button to select the menu.

2. Press the $\wedge$, $\vee$ button to select **Horizontal** item.

3. Press the $<$, $>$ button to make desired adjustments.

   ● **Horizontal** adjustment range is -50 ~ 50.
   ● The variable range can be different depends on input resolutions.
   ● Press the **MENU** button twice or the **EXIT** button to exit the menu screen.

Auto Configure				
Phase	8			
Clock	0			
Horizontal	0			
Vertical	0			
MENU Prev.	◇ Move	<> Adjust		

Using Vertical Function

1. Press the **MENU** button and then use $<$, $>$ button to select the menu.

2. Press the $\wedge$, $\vee$ button to select **Vertical** item.

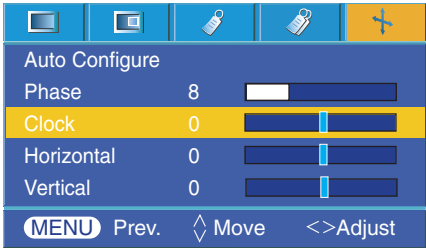3. Press the $<$, $>$ button to make desired adjustments.

   ● **Vertical** adjustment range is -25 ~ 25.
   ● The variable range can be different depends on input resolutions.
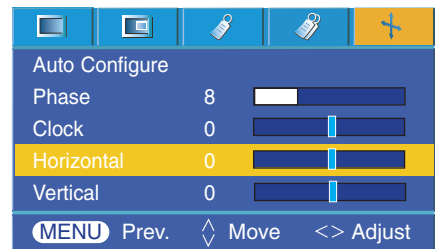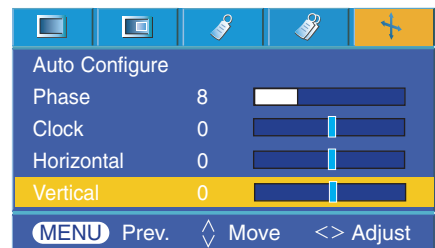   ● Press the **MENU** button twice or the **EXIT** button to exit the menu screen.

Auto Configure				
Phase	8			
Clock	0			
Horizontal	0			
Vertical	0			
MENU Prev.	◇ Move	<> Adjust		

External Control Device Setup

* Connect the RS-232C input jack to an external control device (such as a computer) and control the Projector's functions externally.

SET ID

1. Press the **MENU** button and then use $<$, $>$ button to select the ✎ menu.

2. Press the ⊙**OK** button and then use ∧ , ∨ button to select **Set ID** item.

3. Press the $<$, $>$ button to select your desired number.

   Press the ⊙**OK** button to save the selected number.

   ● The adjustment range of **Set ID** is 1~99.
   ● Only the projector with the specified ID number will operate from the remote control.
   ● Press the **MENU** button twice or the **EXIT** button to exit the menu screen.

Language		$<$	English	$>$
Aspect Ratio		$<$	4 : 3	$>$
Overscan		$<$	10%	$>$
Flip horizontal				
Flip vertical				
Sleep time		$<$	Off	$>$
Auto sleep		$<$	Off	$>$
Set ID		$<$	1	$>$
Presentation timer				
Digital Zoom				

MENU Prev. ◊ Move <> Select
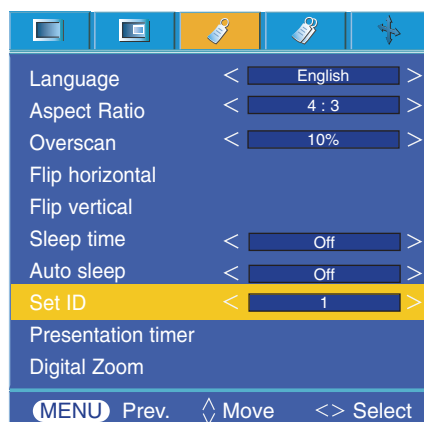
How to connect external control equipment

- Connect the serial port of the PC to the RS-232C jack on the projector back panel.
- RS-232C cable is not supplied with the projector.
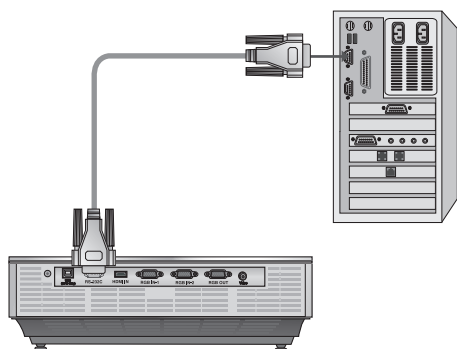
- Use the RS232C cable to control the projector externally (Refer to Fig.1).

<Fig.1, RS-232 Interface Cable>

	PC		Projector	
RXD	2		2	RXD
TXD	3		3	TXD
DTR	4		4	DTR
GND	5		5	GND
DSR	6		6	DSR
RTS	7		7	RTS
CTS	8		8	CTS
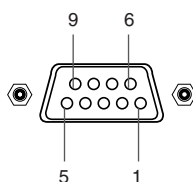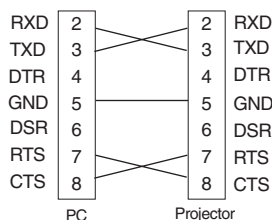
* 1, 9 Pin No Connection

Communication Parameter Setup

- Baud Rate : 9600 bps(UART)
- Data Length : 8 bit
- Parity : none
- Stop bit : 1 bit
- Flow Control : none
- Communication code : ASCII code

Command Reference List

	Command1	Command2	Data (Hexadecimal)
01. Power	k	a	0 ~ 1
02. Aspect Ratio	k	c	1 ~ 2
03. Screen Mute	k	d	0 ~ 1
04. Contrast	k	g	0 ~ 64
05. Brightness	k	h	0 ~ 64
06. Color	k	i	0 ~ 64
07. Tint	k	j	0 ~ 64
08. Sharpness	k	k	0 ~ 64
09. OSD Select	k	l	0 ~ 1
10. Remote Control Lock / Key Lock	k	m	0 ~ 1
11. Color Temperature	k	u	0 ~ 3
12. Red ADC gain adjustment	j	w	0 ~ 64
13. Green ADC gain adjustment	j	y	0 ~ 64
14. Blue ADC gain adjustment	j	z	0 ~ 64
15. Low Power	j	q	0 ~ 1
16. Auto configuration	j	u	1
17. Input Select	x	b	*
18. Key	m	c	Key code

* Refer to the detailed information for data with [*] mark.

❑ Communication Protocol

* Real data mapping 1

Decimal	Hexadecimal	Decimal	Hexadecimal	Decimal	Hexadecimal	Decimal	Hexadecimal	Decimal	Hexadecimal
0	0								
1	1	21	15	41	29	61	3d	81	51
2	2	22	16	42	2a	62	3e	82	52
3	3	23	17	43	2b	63	3f	83	53
4	4	24	18	44	2c	64	40	84	54
5	5	25	19	45	2d	65	41	85	55
6	6	26	1a	46	2e	66	42	86	56
7	7	27	1b	47	2f	67	43	87	57
8	8	28	1c	48	30	68	44	88	58
9	9	29	1d	49	31	69	45	89	59
10	a	30	1e	50	32	70	46	90	5a
11	b	31	1f	51	33	71	47	91	5b
12	c	32	20	52	34	72	48	92	5c
13	d	33	21	53	35	73	49	93	5d
14	e	34	22	54	36	74	4a	94	5e
15	f	35	23	55	37	75	4b	95	5f
16	10	36	24	56	38	76	4c	96	60
17	11	37	25	57	39	77	4d	97	61
18	12	38	26	58	3a	78	4e	98	62
19	13	39	27	59	3b	79	4f	99	63
20	14	40	28	60	3c	80	50	100	64

* Real data mapping 2

Decimal	Hexadecimal	Decimal	Hexadecimal	Decimal	Hexadecimal	Decimal	Hexadecimal	Decimal	Hexadecimal
−50	0								
−49	1	−29	15	−9	29	11	3d	31	51
−48	2	−28	16	−8	2a	12	3e	32	52
−47	3	−27	17	−7	2b	13	3f	33	53
−46	4	−26	18	−6	2c	14	40	34	54
−45	5	−25	19	−5	2d	15	41	35	55
−44	6	−24	1a	−4	2e	16	42	36	56
−43	7	−23	1b	−3	2f	17	43	37	57
−42	8	−22	1c	−2	30	18	44	38	58
−41	9	−21	1d	−1	31	19	45	39	59
−40	a	−20	1e	0	32	20	46	40	5a
−39	b	−19	1f	1	33	21	47	41	5b
−38	c	−18	20	2	34	22	48	42	5c
−37	d	−17	21	3	35	23	49	43	5d
−36	e	−16	22	4	36	24	4a	44	5e
−35	f	−15	23	5	37	25	4b	45	5f
−34	10	−14	24	6	38	26	4c	46	60
−33	11	−13	25	7	39	27	4d	47	61
−32	12	−12	26	8	3a	28	4e	48	62
−31	13	−11	27	9	3b	29	4f	49	63
−30	14	−10	28	10	3c	30	50	50	64

External control device setup

1. Transmission

[Command1][Command2][ ][Set ID][ ][Data][Cr]

* [Command 1]   : First command to control the set.(k, j, x, ASCII code, 1 Character)
* [Command 2]   : Second command to control the set..(ASCII code, 1 Character)
* [Set ID]   : You can adjust the set ID to choose desired projector ID number in special menu. See previous page.
                    Adjustment range is 1 ~ 99. When selecting Set ID '0', every connected projector set is controlled.
                    Refer to 'Real data mapping 1'.
* [DATA]   : To transmit command data. Transmit 2 character when organized ASCII code.
                    * Transmit 'FF' data to read status of command.
* [Cr]   : Carriage Return
                    ASCII code '0x0D'
* [ ]   : ASCII code character correspond to "Space Bar" which is in order to classify command, set ID and Data.

2. OK Acknowledgement

[Command2][ ][Set ID][ ][OK][Data][x]

* The Projector transmits ACK (acknowledgement) based on this format when receiving normal data. At this time, if the data is
  data read mode, it indicates present status data. If the data is data write mode, it returns the data of the PC computer.

3. Error Acknowledgement

[Command2][ ][Set ID][ ][NG][Data][x]

* The Projector transmits ACK (acknowledgement) based on this format when receiving abnormal data from non-viable
  functions or communication errors.

Data : [1] : illegal code(This command is not supported.)
       [2] : not support function(This function doesn't work.)
       [3] : wait and retry(Try again a few minute later.)

01. Power (Command:ka)

➜ To control Power On/Off of the Projector.

Transmission

[k] [a] [ ] [Set ID] [ ] [Data] [Cr]

Data   0 : Power Off
       1 : Power On

Ack

[a] [ ] [Set ID] [ ] [OK] [Data] [x]

Data   0 : Power Off
       1 : Power On

➜ To show Power On/Off status.

Transmission

[k] [a] [ ] [Set ID] [ ] [FF] [Cr]

Ack

[a] [ ] [Set ID] [ ] [OK] [Data] [x]

Data   0 : Power Off
       1 : Power On

* In like manner, if other functions transmit '0xFF' data based
  on this format, Acknowledgement data feed back presents
  status about each function.

02. Aspect Ratio (Command:kc)

➜ To adjust the screen format.

Transmission

[k] [c] [ ] [Set ID] [ ] [Data] [Cr]

Data 1 : 4:3
     2 : 16:9

Ack

[c] [ ] [Set ID] [ ] [OK] [Data] [x]

Data 1 : 4:3
     2 : 16:9

03. Screen Mute (Command:kd)

➜ To select screen mute on/off.

Transmission

[k] [d] [ ] [Set ID] [ ] [Data] [Cr]

Data　0　:　Screen Mute Off (Picture On)
　　　　1　:　Screen Mute On (Picture Off)

Ack

[d] [ ] [Set ID] [ ] [OK] [Data] [x]

Data　0　:　Screen Mute Off (Picture On)
　　　　1　:　Screen Mute On (Picture Off)

04. Contrast (Command:kg)

➜ To adjust screen contrast.

Transmission

[k] [g] [ ] [Set ID] [ ] [Data] [Cr]

Data　Min : 0 ~ Max : 64
* Refer to 'Real data mapping 1'.

Ack

[g] [ ] [Set ID] [ ] [OK] [Data] [x]

Data　Min : 0 ~ Max : 64

05. Brightness (Command:kh)

➜ To adjust screen brightness.

Transmission

[k] [h] [ ] [Set ID] [ ] [Data] [Cr]

Data　Min : 0 ~ Max : 64
* Refer to 'Real data mapping 1'.

Ack

[h] [ ] [Set ID] [ ] [OK] [Data] [x]

Data　Min : 0 ~ Max : 64

06. Color (Command:ki)

➜ To adjust the screen color. (Video/Component)

Transmission

[k] [i] [ ] [Set ID] [ ] [Data] [Cr]

Data　Min : 0 ~ Max : 64
* Refer to 'Real data mapping 1'.

Ack

[i] [ ] [Set ID] [ ] [OK] [Data] [x]

Data　Min : 0 ~ Max : 64

07. Tint (Command:kj)

➜ To adjust the screen tint.(Video/Component 60Hz or NTSC signal)

Transmission

[k] [j] [ ] [Set ID] [ ] [Data] [Cr]

Data　Red : 0 ~ Green : 64
* Refer to 'Real data mapping2'.

Ack

[j] [ ] [Set ID] [ ] [OK] [Data] [x]

Data　Red : 0 ~ Green : 64

08. Sharpness (Command:kk)

➜ To adjust the screen sharpness.(Video/Component)

Transmission

[k] [k] [ ] [Set ID] [ ] [Data] [Cr]

Data　Min : 0 ~ Max : 64
* Refer to 'Real data mapping 1'.

Ack

[k] [ ] [Set ID] [ ] [OK] [Data] [x]

Data　Min : 0 ~ Max : 64

09. OSD Select (Command:kl)

➜ To select OSD On/Off.

Transmission

[k] [l] [ ] [Set ID] [ ] [Data] [Cr]

Data　0　:　OSD Select Mode Off
　　　　1　:　OSD Select Mode On

Ack

[l] [ ] [Set ID] [ ] [OK] [Data] [x]

Data　0　:　OSD Select Mode Off
　　　　1　:　OSD Select Mode On

10. Remote Control Lock/Key Lock (Command:km)

➜ To lock the front panel controls on the projector and remote control.

Transmission

[k] [m] [ ] [Set ID] [ ] [Data] [Cr]

Data　0 : Lock Off
　　　　1 : Lock On

Ack

[m] [ ] [Set ID] [ ] [OK] [Data] [x]

Data　0 : Lock Off
　　　　1 : Lock On

* If you're not using the remote control, use this mode.
  When main power is On/Off, external control lock is released.

11. Color Temperature (Command:ku)

➜ Adjust the color temperature.

Transmission

[k] [u] [ ] [Set ID] [ ] [Data] [Cr]

Data　0 : Normal　　1 : Cool　　2:Warm　　　3 : Natural

Ack

[u] [ ] [Set ID] [ ] [OK] [Data] [x]

Data　0 : Normal　　1 : Cool　　2:Warm　　　3 : Natural

External control device setup

12. Red ADC gain Adjustment (Color R) (Command:jw)

➜ Adjust the Red gain of ADC part.(RGB)

Transmission

[j] [w] [ ] [Set ID] [ ] [Data] [Cr]

Data　　Min : 0 ~ Max : 64
∗ Refer to 'Real data mapping 1'.

Ack

[w] [ ] [Set ID] [ ] [OK] [Data] [x]

Data　　Min : 0 ~ Max : 64

13. Green ADC gain Adjustment (Color G) (Command:jy)

➜ Adjust the Green gain of ADC part.(RGB)

Transmission

[j] [y] [ ] [Set ID] [ ] [Data] [Cr]

Data　　Min : 0 ~ Max : 64
∗ Refer to 'Real data mapping 1'.

Ack

[y] [ ] [Set ID] [ ] [OK] [Data] [x]

Data　　Min : 0 ~ Max : 64

14. Blue ADC gain Adjustment (Color B) (Command:jz)

➜ Adjust the Blue gain of ADC part.(RGB)

Transmission

[j] [z] [ ] [Set ID] [ ] [Data] [Cr]

Data　　Min : 0 ~ Max : 64
∗ Refer to 'Real data mapping 1'.

Ack

[z] [ ] [Set ID] [ ] [OK] [Data] [x]

Data　　Min : 0 ~ Max : 64

15. Low Power (Command:jq)

➜ To reduce the power consumption of the projector.

Transmission

[j] [q] [ ] [Set ID] [ ] [Data] [Cr]

Data　0 : Low Power Off
　　　 1 : Low Power On

Ack

[q] [ ] [Set ID] [ ] [OK] [Data] [x]

Data　0 : Low Power Off
　　　 1 : Low Power On

16. Auto Configure (Command:ju)

➜ To adjust picture position and minimize image shaking automatically. It works only in RGB mode.

Transmission

[j] [u] [ ] [Set ID] [ ] [Data] [Cr]

Data　1 : To set

Ack

[u] [ ] [Set ID] [ ] [OK] [Data] [x]

Data　1 : To set

17. Input Select (Command:xb)

➜ To select input source for the Set.

Transmission

[x] [b] [ ] [Set ID] [ ] [Data] [Cr]

Data　20 : Video　　60 : RGB1
　　　61 : RGB2　　80 : HDMI

Ack

[b] [ ] [Set ID] [ ] [OK] [Data] [x]

Data　20 : Video　　60 : RGB1
　　　61 : RGB2　　80 : HDMI

18. Key (Command:mc)

➜ To send Key code of IR romote control.

Transmission

[m] [c] [ ] [Set ID] [ ] [Data] [Cr]

Data　Key code

Ack

[b] [ ] [Set ID] [ ] [OK] [Data] [x]

Key code

Button	Key code	Button	Key code
∧	40	BLANK	84
∨	41	TIMER	26
>	02	W.PEAK	69
<	03	KEYSTONE	A4
POWER	AD	GAMMA	6E
SOURCE	EF	MODE	4D
MENU	43	☼	4F
EXIT	5B	◗	4E
⊙ OK	44	ZOOM	5C
STILL	BC	LAMP MODE	68
RATIO	79	SLEEP	0E
		AUTO	92

Supported Monitor Display

* The following table lists the display formats supported by the projector.

Sources	Format	Vertical Freq.(Hz)	Horizontal Freq.(kHz)
EGA	640X350	70.09Hz	31.468kHz
	640X350	85.08Hz	37.861kHz
PC98	640X400	85.08Hz	37.861kHz
DOS	720X400	70.08Hz	31.469kHz
	720X400	85.03Hz	37.927kHz
VGA	640X480	59.94Hz	31.469kHz
	640X480	72.80Hz	37.861kHz
	640X480	75.00Hz	37.500kHz
	640X480	85.00Hz	43.269kHz
SVGA	800X600	56.25Hz	35.156kHz
	800X600	60.31Hz	37.879kHz
	800X600	72.18Hz	48.077kHz
	800X600	75.00Hz	46.875kHz
	800X600	85.06Hz	53.674kHz
XGA	1024X768	60.00Hz	48.363kHz
	1024X768	70.06Hz	56.476kHz
	1024X768	75.02Hz	60.023kHz
	1024X768	84.99Hz	68.677kHz
SXGA	1152X864	60.05Hz	54.348kHz
	1152X864	70.01Hz	63.995kHz
	1152X864	75.00Hz	67.500kHz
	1280X960	60.00Hz	60.000kHz
	1280X960	85.00Hz	85.940kHz
	1280X1024	60.02Hz	63.981kHz
	1280X1024	75.025Hz	79.976kHz
SXGA+	1400X1050	60.00Hz	65.317kHz

* If the projector does not support the input signal, "Out of Range" message appears on the screen.

* The projector supports DDC1/2B type as Plug & Play function. (Auto recognition of PC monitor)

* The Synchronization input form for horizontal and vertical frequencies are Separate.

* According to PC, the optimum vertical frequency may not be displayed up to the optimum frequency of set in 'Registration information (Display registration information)'. (ex, The optimum vertical frequency may be displayed up to 85Hz or under in the resolution of 640X480 or 800X600.)

<DVD/DTV Input>

Signal		Component-*1	HDMI(DTV)-*2
59.94 / 60Hz	480i	O	X
	480p	O	O
	720p	O	O
	1080i	O	O
50Hz	576i	O	X
	576p	O	O
	720p	O	O
	1080i	O	O
24/25/30Hz	1080p	O	O

* Cable type
1- RCA to D-Sub Adapter
2- HDMI to HDMI Cable

Maintenance

* The projector needs little maintenance. You should keep the lens clean because any dirt or stains may appear on the screen. If any parts need to be replaced, contact your dealer. When cleaning any part of the projector, always turn the power off and unplug the projector first.

Cleaning the lens

Clean the lens whenever you notice dirt or dust on the surface of it. Wipe the lens surface gently with an air spray or a soft, dry lint-free cloth.
To remove dirt or stains on the lens, moisten a soft cloth with water and a neutral detergent and wipe the lens surface gently.

Cleaning the Projector Case

To clean the projector case, first unplug the power cable. To remove dirt or dust, wipe the casing with a soft, dry, lint-free cloth. To remove stubborn dirt or stains, moisten a soft cloth with water and a neutral detergent and then wipe the casing.
Do not use alcohol, benzene, thinners or other chemical detergents as these can cause the casing to be warped or discolored.

Replacing the Lamp

Lamp Replacement

The change interval of lamp may depend on the use environment of Projector. You can see the used lamp time in the CHECKING LAMP TIME section of the Menu (page.29). You must replace the lamp when:

<Front panel of the Projector>

Lamp indicators

- The projected image gets darker or starts to deteriorate.
- The lamp indicator is red.
- The message "Replace the lamp" appears on the screen when turning the projector on.
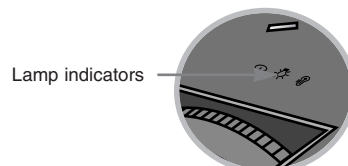
Be careful when replacing lamp

- Press the POWER button on the control panel or remote control to turn off power.
- If the operation indicator LED is orange and blinking, do not disconnect the main supply until the operation indicator LED is lit up constantly (orange).
- Allow the lamp to cool for 1 hour before replacing it.
- Replace only with the same type lamp from an LG Electronics Service Center. Using another manufacturers lamp may cause damage to the Projector and lamp.
- Pull out the lamp only when replacing the lamp.
- Keep the lamp unit out of reach of children. Keep the Lamp away from heat sources such as radiators, stoves etc.
- To reduce the risk of fire do not expose the lamp to liquids or foreign materials.
- Do not place the lamp near any heat source.
- Make sure the new lamp is securely tightened with screws. If not, the image may be dark or there could be an increased risk of fire.
- Never touch the lamp unit glass otherwise image quality may be compromised or lamp life maybe reduced.

To obtain a replacement Lamp unit

Lamp model number is on page 42. Check the lamp model and then purchase it from an LG Electronics Service Center. Using another manufacturers lamp may cause damage to the projector.
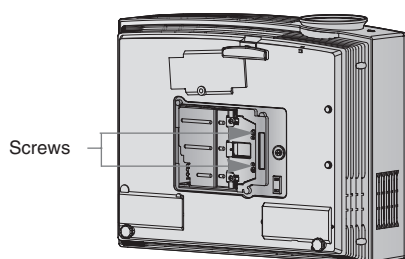
Lamp unit disposal

Dispose of the used lamp by returning it to the LG Electronics Service Center.

Replacing the Lamp

1 Turn off the projector and unplug the power cable. Carefully place on a cushioned surface.

(Allow the lamp to cool for 1 hour before removing the used lamp from the projector.)

2 Unscrew the screw from the lamp cover using a screwdriver.

Lamp case screw

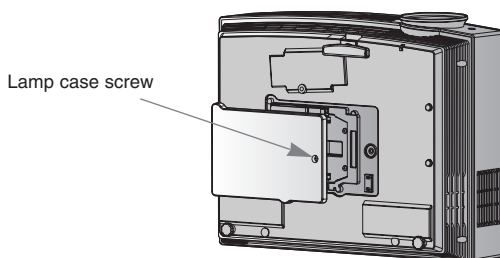**3** After lifting the lamp cover off, remove the two retaining screws on the lamp case with a screwdriver.

Screws

4 Lift the lamp up from the projector.

Knob

5 Pull out the handle slowly and remove the lamp case.
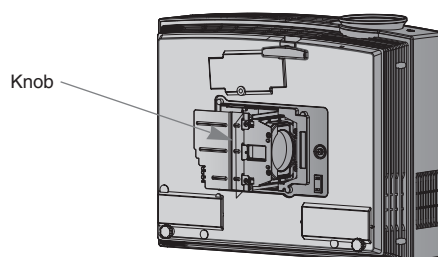
6 Insert the new lamp gently into the correct position. Make sure it is inserted correctly.

7 Tighten the screws you removed in step 3.

(Make sure they are fixed firmly.)

8 Close the lamp cover and install the screws from step 2 to install the cover.

(If the lamp cover is not installed correctly the unit will not power on.)

Note!

Using another manufacturers lamp may cause damage to the projector or lamp.
Make sure the lamp cover is securely fastened. If the lamp cover is not installed correctly the unit will not power on.
If this fault persists contact an LG Authorized Service Center.
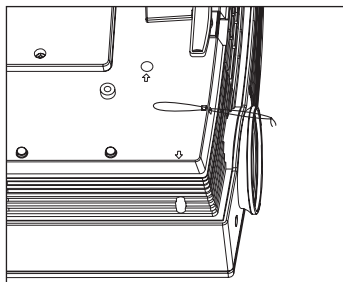
Regarding the projector lamp control

⚠ WARNING

● Don't turn off the projector at least in 5 minutes after activating it.
  - The frequent On/Off changes may cause the lamp function to deteriorate.

● Don't pull out the power cord while activating the projector and the cooling fan.
  - It may cause the lamp life-span to shorten and get damaged.

● The life-span of projector may considerably depend on the use environment and treatment conditions.

● The projector uses the high pressure mercury lamp so that the serious caution is essential. The shock or abuse while using may cause lamp to blow off with explosion.

● When you continue to use the projector after an interval of lamp replacement, the lamp may be blown off with explosion.

● The following treatment should be done, in case of lamp blow-off.
  - Pull off the power cord immediately.
  - Let some fresh air in immediately (Ventilation).
  - Check the product condition at the nearer service center and replace it with new lamp, if necessary.
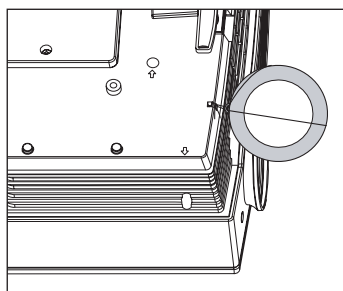 - Don't try to disassemble the product without the authorized technician.

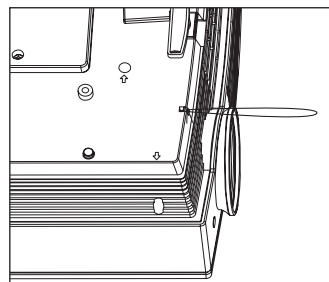# How to fix the lens cap to the projector

How to fix the lens cap

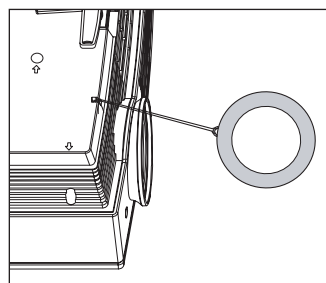**1** Prepare the lens cap and the strap supplied as accessories.

2 Insert the non-knot end of the strap into the hole at the bottom of the lens section of the projector.

3 Fix the strap at the hole of the projector into the hole of the lens cap, and then pass the lens cap through the strap lasso.

4 They are completely assembled as shown at the below figure.

Specifications

MODEL	BX401C (BX401C-JD)
Resolution	1024(Horizontal) x 768(Vertical)pixel
Horizontal / Vertical Ratio	4:3(horizontal:vertical)
DLP panel size	0.7 inches
Screen size (Projection distance)	Wide : 1.26 ~ 9.63m(40 ~ 300 inches) Tele : 1.50 ~ 11.47m(40 ~ 300 inches)
Projection off-set ratio	100%
Remote control distance	12m
Zoom ratio	1:1.2
Video compatibility	NTSC/PAL/SECAM/NTSC4.43/PAL-M/PAL-N
Power	AC 100 - 240V~ 50/60Hz, 3.7A-1.5A
Height(mm/inches)	114/4.5
Breadth(mm/inches)	346/13.6
Length(mm/inches)	263/10.4
Weight(kg/pound)	4.5/9.92

Operating Condition

Temperature

In operation : 32~104°F(0°C~40°C)
In storage and transit : -4~140°F(-20°C~60°C)

Humidity

In operation : 0 ~ 75% relative humidity by dry hygrometer
Not in operation : 0 ~ 85% relative humidity by dry hygrometer

Projector Lamp

Lamp model

AJ-LDX5

Lamp power consumption

300W