

APPENDIX H  
: USER'S MANUAL



# LCD TV OWNER'S MANUAL

## LCD TV MODELS

20LS7D  
23LS7D

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 back cover and quote this information to your dealer when you require service.

ENERGY STAR is a set of power-saving guidelines issued by the U.S. Environmental Protection Agency(EPA).



As an ENERGY STAR Partner LGE U. S. A.,Inc. has determined that this product meets the ENERGY STAR guidelines for energy efficiency.

# WARNING / CAUTION



**WARNING / CAUTION**  
RISK OF ELECTRIC SHOCK  
DO NOT OPEN



TO REDUCE THE RISK OF ELECTRIC SHOCK  
DO NOT REMOVE COVER (OR BACK). NO  
USER SERVICEABLE PARTS INSIDE. REFER TO  
QUALIFIED SERVICE PERSONNEL.



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



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

## WARNING/CAUTION

TO REDUCE THE RISK OF FIRE AND ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.

## NOTE TO CABLE/TV INSTALLER

This reminder is provided to call the CATV system installer’s attention to Article 820-40 of the National Electric Code (U.S.A.). The code provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of the cable entry as practical.

## WARNING / CAUTION

To prevent fire or shock hazards, do not expose this product to rain or moisture.

## FCC NOTICE

### 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 to 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.**

## CAUTION

Do not attempt to modify this product in any way without written authorization from LG Electronics. Unauthorized modification could void the user’s authority to operate this product

# SAFETY INSTRUCTIONS

## IMPORTANT SAFETY INSTRUCTIONS

Important safety instructions shall be provided with each apparatus. This information shall be given in a separate booklet or sheet, or be located before any operating instructions in an instruction for installation for use and supplied with the apparatus.

This information shall be given in a language acceptable to the country where the apparatus is intended to be used. The important safety instructions shall be entitled "Important Safety Instructions". The following safety instructions shall be included where applicable, and, when used, shall be verbatim as follows. Additional safety information may be included by adding statements after the end of the following safety instruction list. At the manufacturer's option, a picture or drawing that illustrates the intent of a specific safety instruction may be placed immediately adjacent to that safety instruction:

**Read these instructions.**

**Keep these instructions.**

**Heed all warnings.**

**Follow all instructions.**



- 1** Do not use this apparatus near water.



- 2** Clean only with dry cloth.



- 3** Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.



- 4** Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.



- 5** Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.



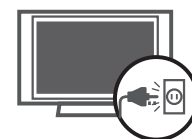
- 6** Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.



- 7** Only use attachments/accessories specified by the manufacturer.



- 8** Unplug this apparatus when unused for long periods of time.



- 9 Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.



- 10 Never touch this apparatus or antenna during a thunder or lightning storm.

- 11 Do not allow a impact shock or any objects to fall into the product, and do not drop onto the screen with something.

- 12 Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has exposed to rain or moisture, does not operate normally, or has been dropped.



- 13 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 servicer. 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.



- 14 Outdoor use marking :  
WARNING - To reduce the risk of fire or electric shock, do not expose this appliance to rain or moisture.



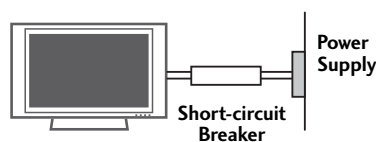
- 15 Wet Location Marking : Apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on or over apparatus.



## 16 GROUNDING

Ensure that you connect the earth ground wire to prevent possible electric shock. If grounding methods are not possible, have a qualified electrician install a separate circuit breaker.

Do not try to ground the unit by connecting it to telephone wires, lightening rods, or gas pipes.



- 17 DISCONNECTING DEVICE FROM MAINS  
Mains plug is the disconnecting device. The plug must remain readily operable.

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# INTRODUCTION

## FEATURE OF THIS TV



High-definition television. High-resolution digital television broadcast and playback system composed of roughly a million or more pixels, 16:9 aspect-ratio screens, and AC3 digital audio. A subset of digital television, HDTV formats include 1080i and 720p resolutions.



Manufactured under license from Dolby Laboratories. "Dolby" and the double-D symbol are trademarks of Dolby Laboratories.



HDMI™, the HDMI logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing."

If the TV feels cold to the touch, there may be a small "flicker" when it is turned on. This is normal, there is nothing wrong with TV.

Some minute dot defects may be visible on the screen, appearing as tiny red, green, or blue spots. However, they have no adverse effect on the monitor's performance.

Avoid touching the LCD screen or holding your finger(s) against it for long periods of time. Doing so may produce some temporary distortion effects on the screen.

### **On Disposal**

- a. The fluorescent lamp used in this product contains a small amount of mercury.
- b. Do not dispose of this product with general household waste.
- c. Disposal of this product must be carried out in accordance to the regulations of your local authority.

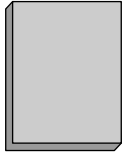


# PREPARATION

## ACCESSORIES

Ensure that the following accessories are included with your product. If an accessory is missing, please contact the dealer where you purchased the product.

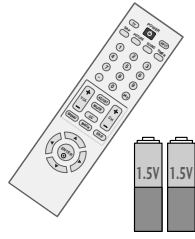
User must use shielded signal interface cables (D-sub 15 pin cable) with ferrite cores to maintain standard compliance for the product.



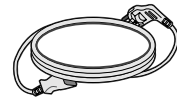
Owner's Manual



CD Manual



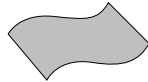
Remote Control,  
Batteries



Power Cord



Cable Management

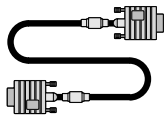


Polishing Cloth

\* Slightly wipe stained spot on the exterior only with the polishing cloth for the product exterior if there is stain or fingerprint on surface of the exterior.

\* Do not wipe roughly when removing stain. Please be cautions of that excessive pressure may cause scratch or discoloration.

### Option Extras

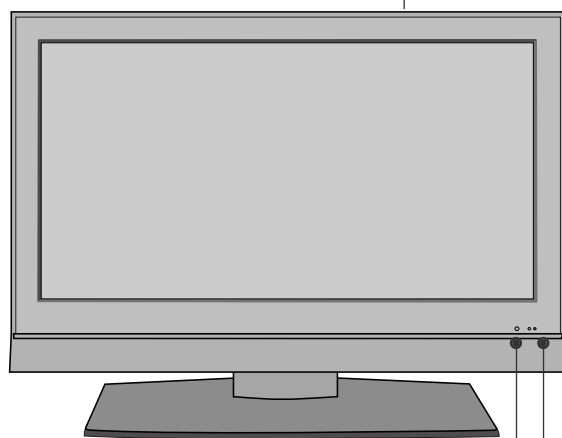
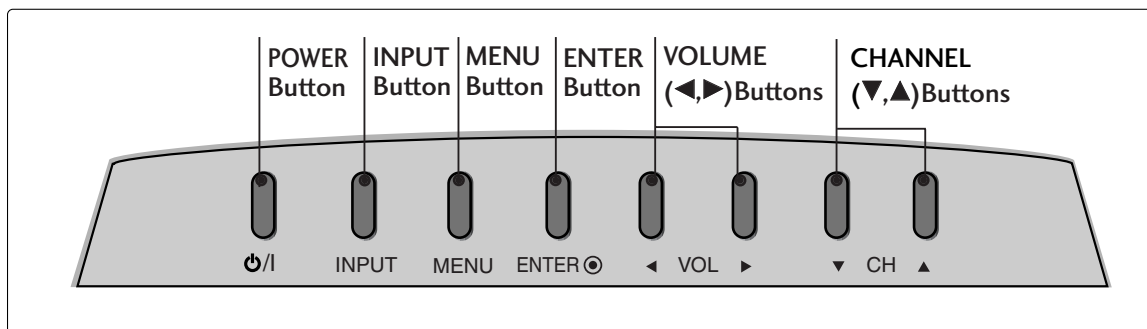


D-sub 15 pin Cable

# PREPARATION

## FRONT PANEL INFORMATION

- Here shown may be somewhat different from your TV.



Remote Control Sensor

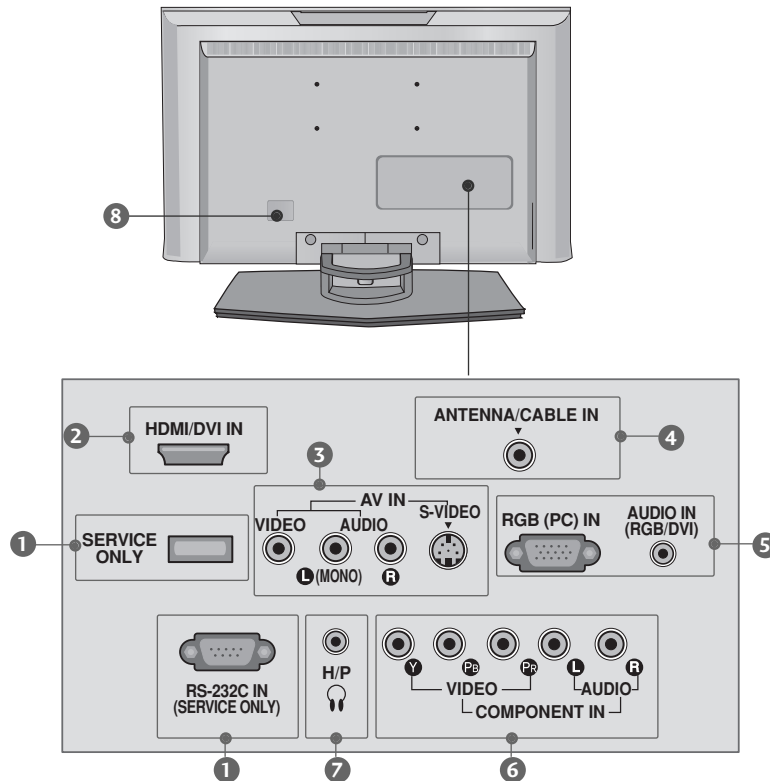
**Power/Standby Indicator**  
Illuminates red in standby mode.  
Illuminates green when the set is switched on.

### ! NOTE

- ▶ If your product has a protection tape attached, remove the tape.  
And then wipe the product with a cloth (If a polishing cloth is included with your product, use it).

# BACK PANEL INFORMATION

■ Here shown may be somewhat different from your TV.



**1 SERVICE ONLY**

**RS-232C IN (SERVICE ONLY) PORT**  
For service.

**2 HDMI/DVI IN**

Connect a HDMI signal to this jack.  
Or DVI (Video) signal to this jack with a HDMI to DVI cable.

**3 AV IN (Audio/Video)**

Connect audio/video output from an external device to these jacks.

**S-VIDEO**

Connect S-Video out from an S-VIDEO device.

**4 ANTENNA/CABLE IN**

Connect over-the air signals to this jack.  
Connect cable signals to this jack.

**5 RGB (PC) IN**

Connect the output from a PC.

**AUDIO IN (RGB/DVI)**

Connect the audio from a PC or DTV.

**6 COMPONENT IN**

Connect a component video/audio device to these jacks.

**7 HEADPHONE INPUT**

Plug the headphone into the headphone socket.

**8 Power Cord Socket**

For operation with AC power.

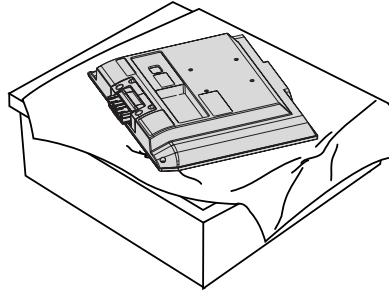
Caution: Never attempt to operate the TV on DC power.

# PREPARATION

## STAND INSTALLATION

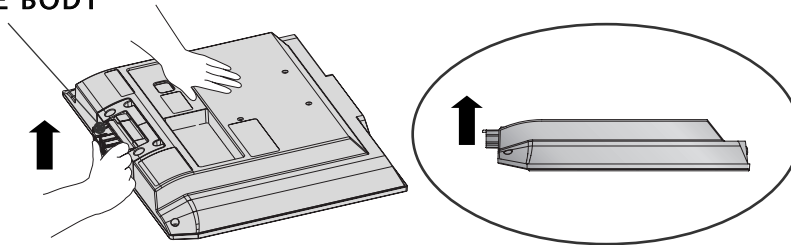
■ Here shown may be somewhat different from your TV.

- 1 Carefully place the product screen side down on a cushioned surface that will protect product and screen from damage.

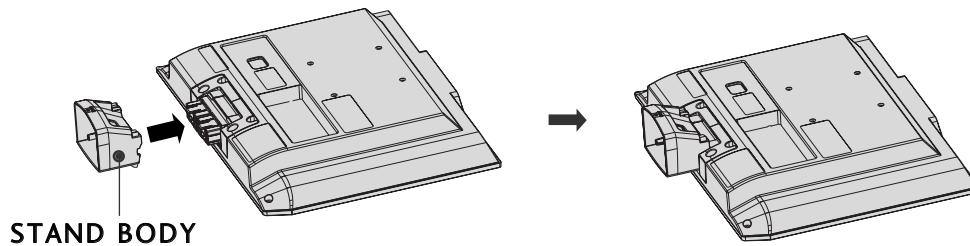


- 2 Hold the **HINGE BODY** and bend it upward.

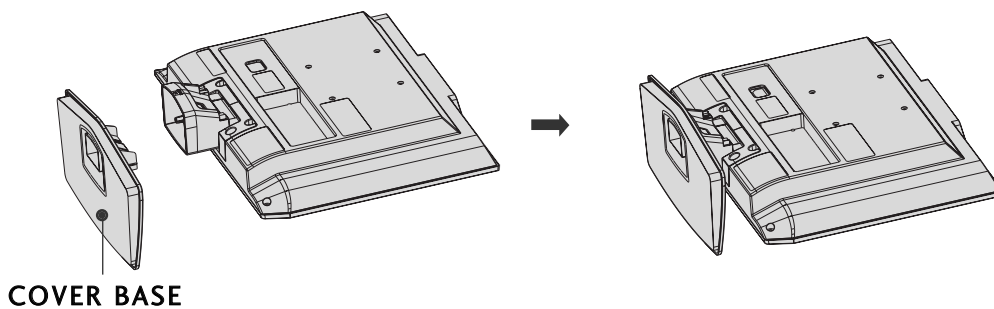
**HINGE BODY**



- 3 Insert the **STAND BODY** into the product until clicking sound.



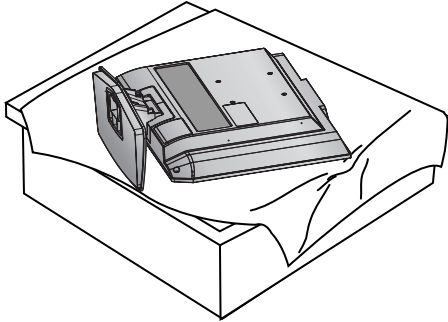
- 4 Assemble the parts of the **STAND BODY** with **COVER BASE** of the product.



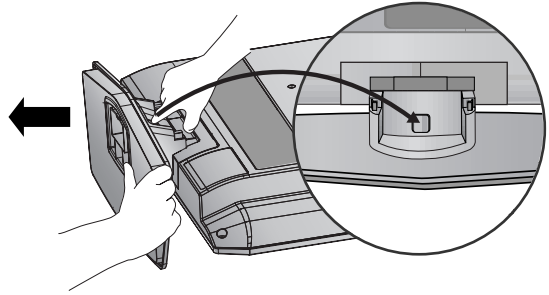
## DETACHING STAND

■ Here shown may be somewhat different from your TV.

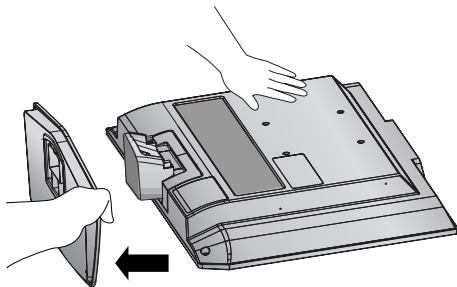
- 1 Carefully place the product screen side down on a cushioned surface that will protect product and screen from damage.



- 2 Pull cover base backward while pressing button on stand body.

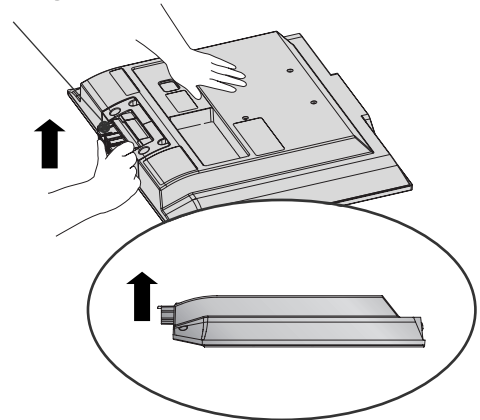


- 3 Shake the base while pulling, it will separate from stand body.

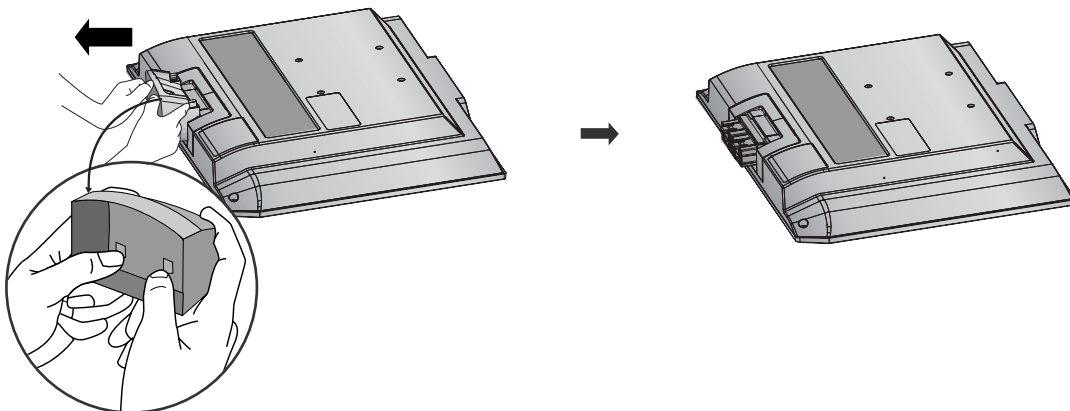


- 4 Hold the **HINGE BODY** and bend it upward.

**HINGE BODY**



- 5 Pull stand body to separate from set while pressing the 2 latches.



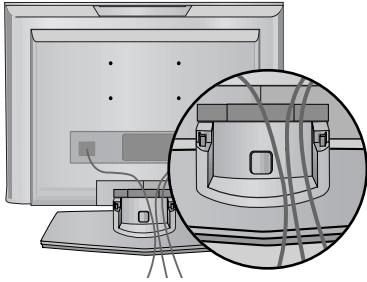
# PREPARATION

PREPARATION

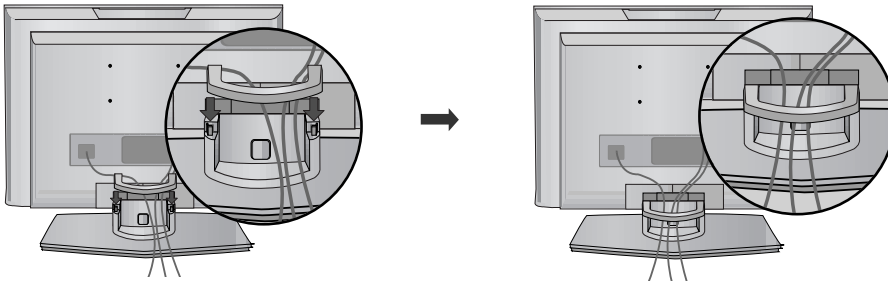
## BACK COVER FOR WIRE ARRANGEMENT

■ Here shown may be somewhat different from your TV.

- 1 Connect the cables as necessary.  
To connect an additional equipment, see the **EXTERNAL EQUIPMENT SETUP** section.

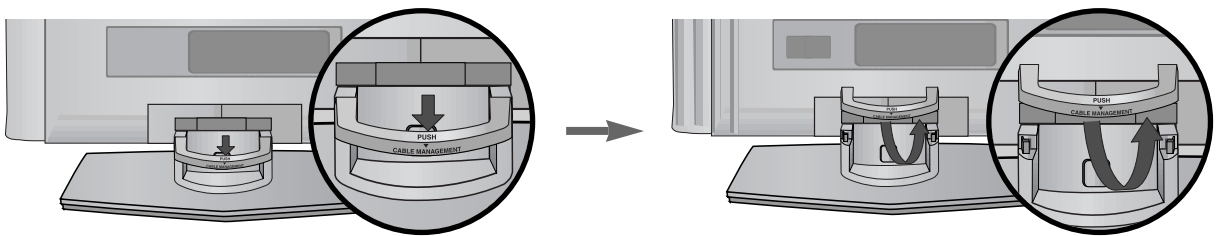


- 2 Install the **CABLE MANAGEMENT** as shown.



## How to remove the CABLE MANAGEMENT

First, press the cable management. Hold the **CABLE MANAGEMENT** with both hands and pull it upward.

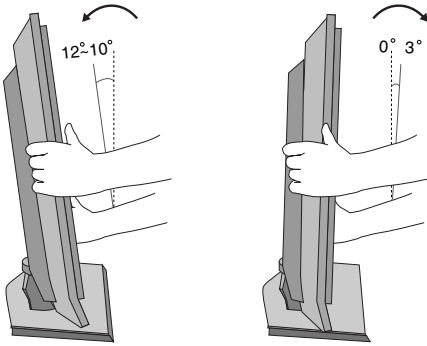


### ! NOTE

- ▶ Do not hold the **CABLE MANAGEMENT** when moving the product.
- If the product is dropped, you may be injured or the product may be broken.

## POSITIONING YOUR DISPLAY

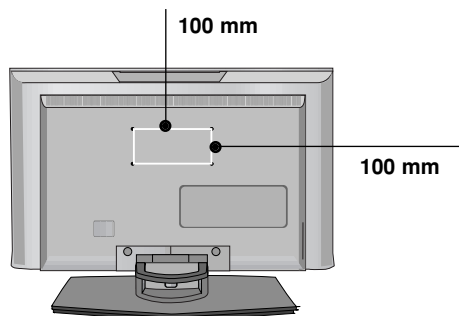
- Here shown may be somewhat different from your TV.
- Adjust the position of the panel in various ways for maximum comfort.
- Tilt range



# PREPARATION

## VESA WALL MOUNTING

This product accepts a VESA-compliant mounting interface pad. (optional)  
There 4 threaded holes are available for attaching the bracket.



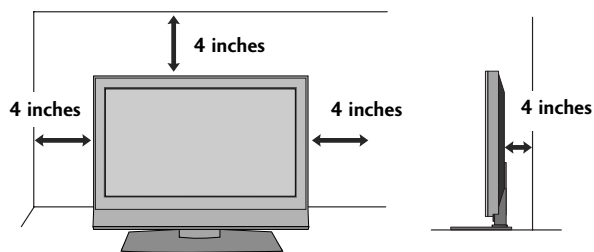
PREPARATION

### ! NOTE

- ▶ Screw length needed depends on the wall mount used. For further information, refer to the VESA Wall Mounting Instruction Guide.

## DESKTOP PEDESTAL INSTALLATION

For proper ventilation, allow a clearance of 4 inches on all four sides from the wall.



### ! CAUTION

- ▶ Ensure adequate ventilation by following the clearance recommendations.



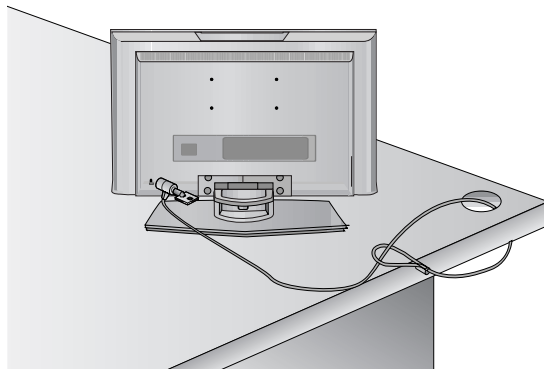
## KENSINGTON SECURITY SYSTEM

- The TV is equipped with a Kensington Security System connector on the back panel. Connect the Kensington Security System cable as shown below.
- For the detailed installation and use of the Kensington Security System, refer to the user's guide provided with the Kensington Security System.

For further information, contact <http://www.kensington.com>, the internet homepage of the Kensington company. Kensington sells security systems for expensive electronic equipment such as notebook PCs and LCD projectors.

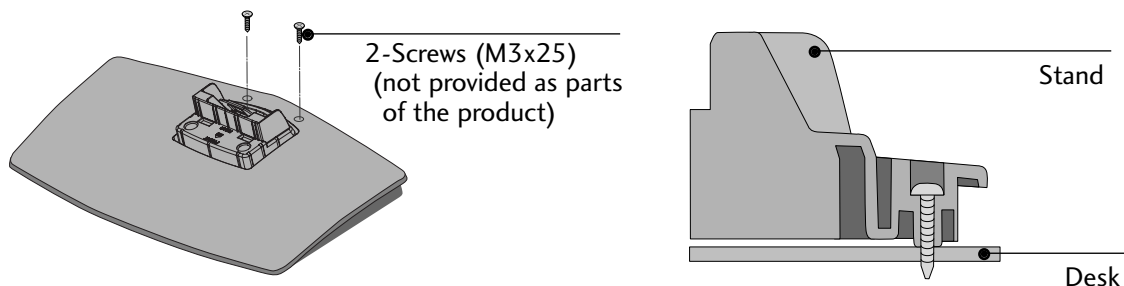
### NOTE

- The Kensington Security System is an optional accessory.



## ATTACHING THE TV TO A DESK

The TV must be attached to a desk so it cannot be pulled in a forward/backward direction, potentially causing injury or damaging the product.



### ⚠ WARNING

- ▶ This apparatus must be securely attached to the floor/wall per installation instructions. Tipping, shaking, or rocking the machine may cause injury/death.

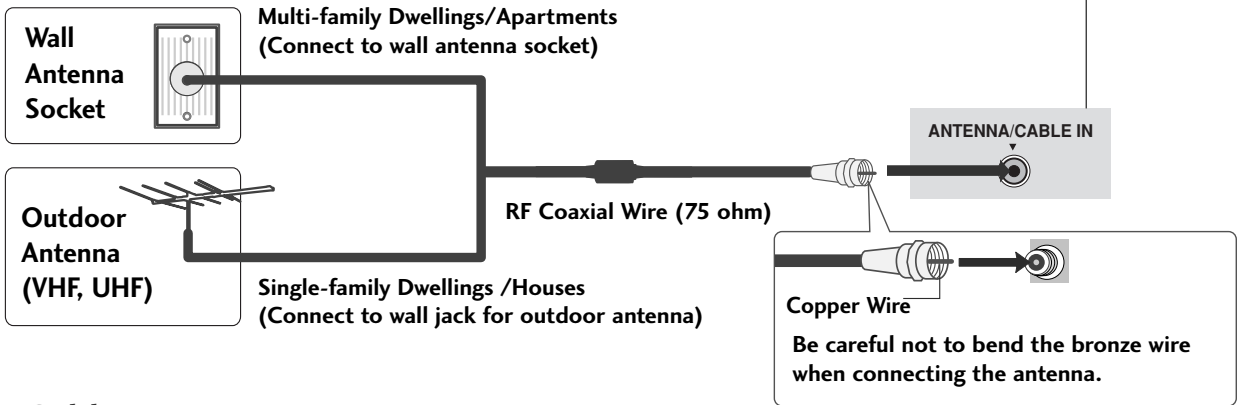
# PREPARATION

## ANTENNA OR CABLE CONNECTION

### 1. Antenna (Analog or Digital)

Wall Antenna Socket or Outdoor Antenna without a Cable Box Connections.

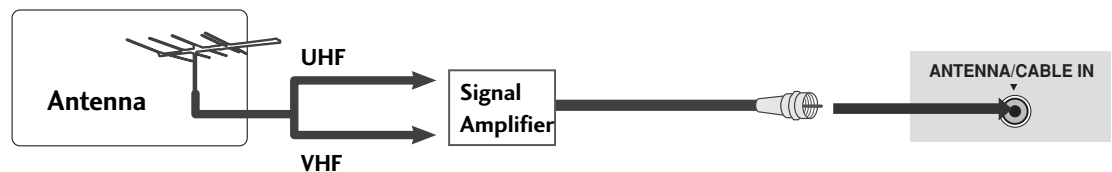
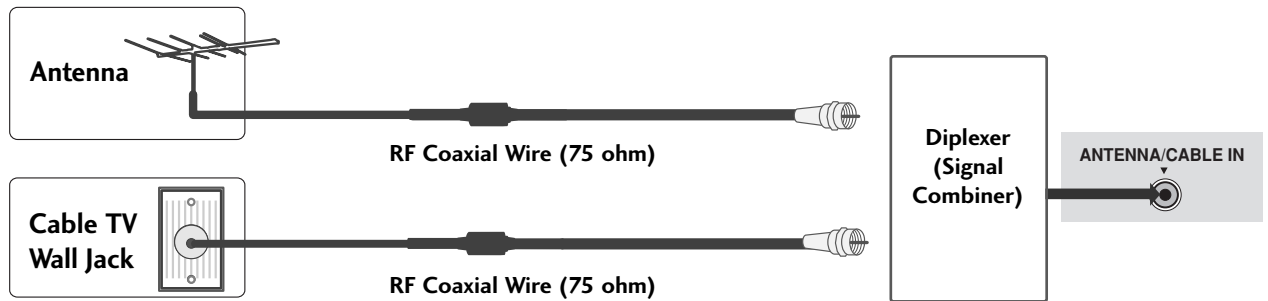
For optimum picture quality, adjust antenna direction if needed.



### 2. Cable



### 3. Using both cable and antenna



- To improve the picture quality in a poor signal area, please purchase a signal amplifier and install properly.
- If the antenna needs to be split for two TV's, install a 2-Way Signal Splitter.
- If the antenna is not installed properly, contact your dealer for assistance.

**NOTE** ▶ The TV will let you know when the analog, cable, and digital channel scans are complete.

# EXTERNAL EQUIPMENT SETUP

- To prevent the equipment damage, never plug in any power cords until you have finished connecting all equipment.

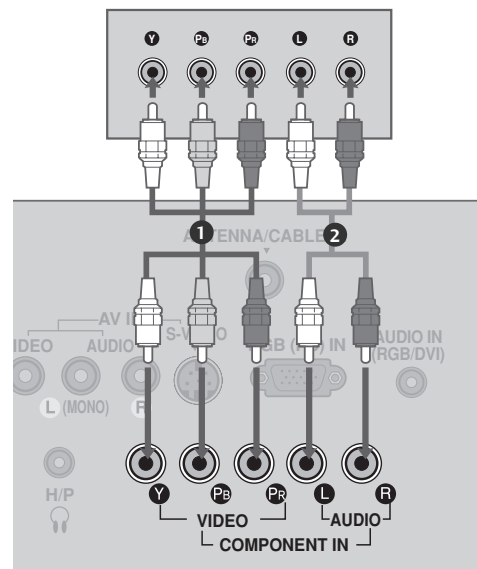
## HD RECEIVER SETUP

This TV can receive Digital Over-the-air/Cable signals without an external digital set-top box. However, if you do receive digital signals from a digital set-top box or other digital external device, refer to the figure as shown below.

### When connecting Component cable

#### 1. How to connect

- 1 Connect the video outputs (Y, PB, PR) of the digital set top box to the **COMPONENT IN VIDEO** jacks on the set. Match the jack colors (Y = green, PB = blue, and PR = red).
- 2 Connect the audio output of the digital set-top box to the **COMPONENT IN AUDIO** jacks on the set.



#### 2. How to use

- Turn on the digital set-top box.  
(Refer to the owner's manual for the digital set-top box. operation)
- Select **Component** input source by using the **INPUT** button on the remote control.

# EXTERNAL EQUIPMENT SETUP

## When connecting HDMI cable

### 1. How to connect

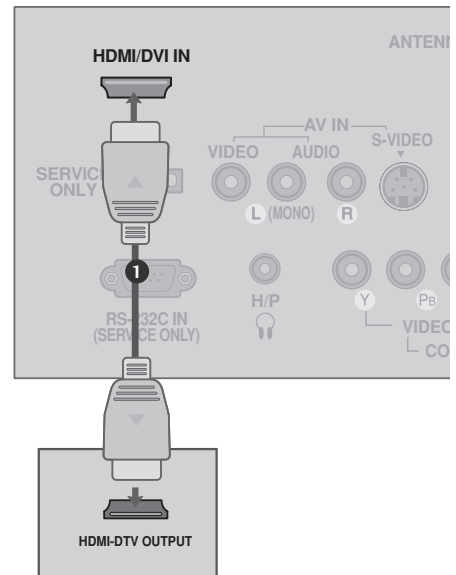
- 1 Connect the digital set-top box to **HDMI/DVI IN** jack on the set.
- 2 No separated audio connection is necessary. HDMI supports both audio and video.

### 2. How to use

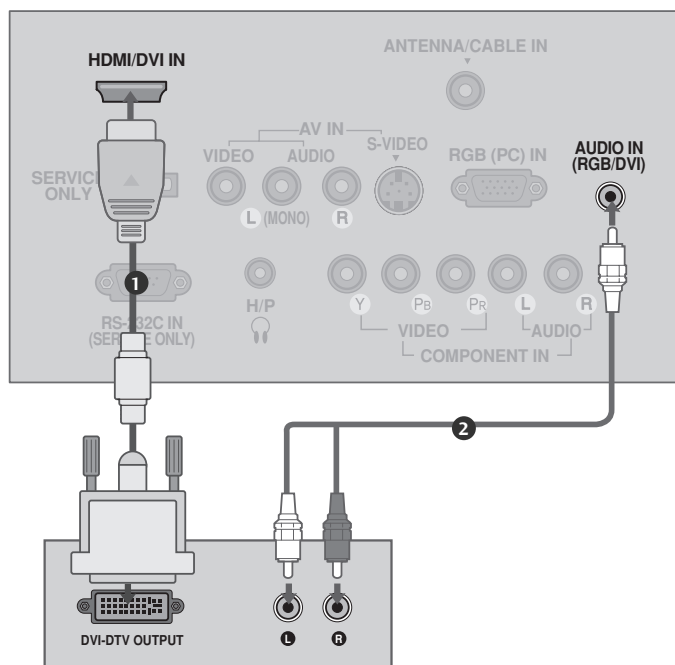
- Turn on the digital set-top box.  
(Refer to the owner's manual for the digital set-top box.)
- Select **HDMI** input source by using the **INPUT** button on the remote control.

#### ! NOTE

- ▶ When connected, the TV will tell a connected device what resolution it supports and the resolution it prefers. If the device supports this Auto HDMI function, the player output resolution will be automatically set to 720p.
- ▶ If the device does not support Auto HDMI, you need to set the output resolution appropriately.



## When connecting HDMI to DVI cable



### 1. How to connect

- 1 Connect the DVI output of the digital set-top box to the **HDMI/DVI IN** jack on the set.
- 2 Connect the audio output of the digital set-top box to the **AUDIO IN (RGB/DVI)** jack on the set.

### 2. How to use

- Turn on the digital set-top box. (Refer to the owner's manual for the digital set-top box.)
- Select **HDMI** input source by using the **INPUT** button on the remote control.

# EXTERNAL EQUIPMENT SETUP

## DVD SETUP

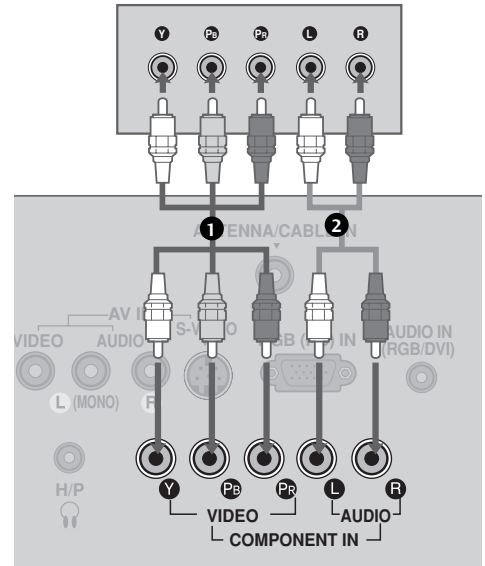
### When connecting Component cable

#### 1. How to connect

- 1 Connect the video outputs (Y, PB, PR) of the DVD to the **COMPONENT IN VIDEO** jacks on the set.  
Match the jack colors  
(Y = green, PB = blue, and PR = red).
- 2 Connect the audio outputs of the DVD to the **COMPONENT IN AUDIO** jacks on the set.

#### 2. How to use

- Turn on the DVD player, insert a DVD.
- Select **Component** input source by using the **INPUT** button on the remote control.
- Refer to the DVD player's manual for operating instructions.



### Component Input ports

To get better picture quality, connect a DVD player to the component input ports as shown below.

Component ports on the TV	Y	P <sub>B</sub>	P <sub>R</sub>
Video output ports on DVD player	Y	P <sub>B</sub>	P <sub>R</sub>
	Y	B-Y	R-Y
	Y	C <sub>b</sub>	C <sub>r</sub>
	Y	P <sub>b</sub>	P <sub>r</sub>

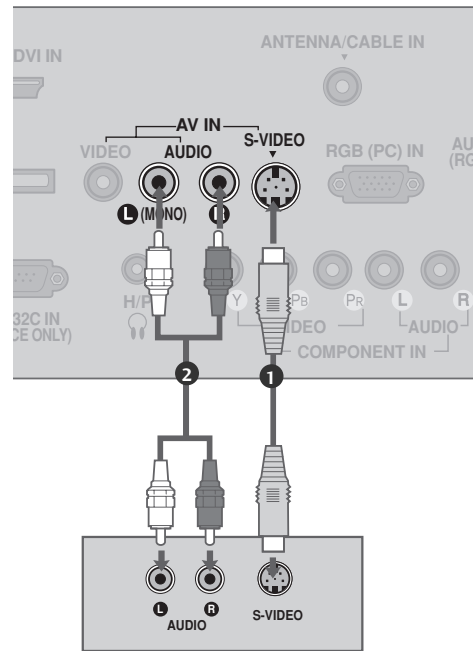
## When connecting with an S-Video cable

### 1. How to connect

- 1 Connect the S-VIDEO output of the DVD to the S-VIDEO input on the set.
- 2 Connect the audio outputs of the DVD to the AUDIO input jacks on the set.

### 2. How to use

- Turn on the DVD player, insert a DVD.
- Select **AV** input source by using the **INPUT** button on the remote control.
- Refer to the DVD player's manual for operating instructions.



## When connecting HDMI cable

### 1. How to connect

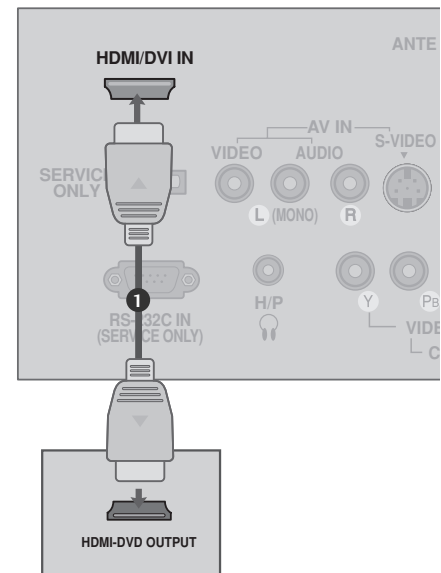
- 1 Connect the HDMI output of the DVD to the HDMI/DVI IN jack on the set.
- 2 No separated audio connection is necessary. HDMI supports both audio and video.

### 2. How to use

- Select **HDMI** input source by using the **INPUT** button on the remote control.
- Refer to the DVD player's manual for operating instructions.

#### ! NOTE

- ▶ When connected, the TV will tell a connected device what resolution it supports and the resolution it prefers. If the device supports this Auto HDMI function, the player output resolution will be automatically set to 720p.
- ▶ If the device does not support Auto HDMI, you need to set the output resolution appropriately.  
To get the best picture quality, adjust the output resolution of the DVD to 720p.



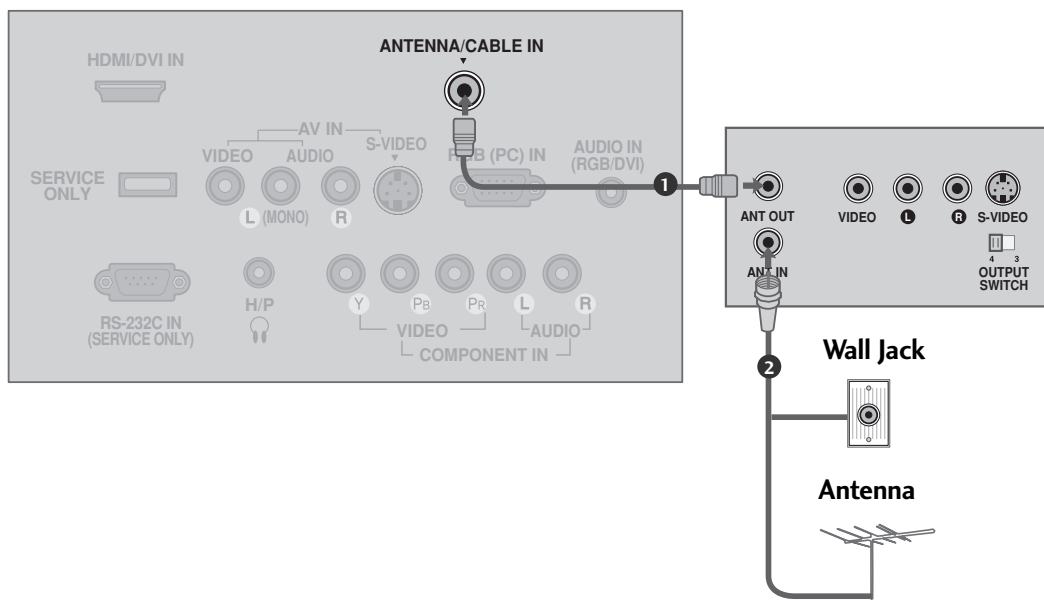
# EXTERNAL EQUIPMENT SETUP

## VCR SETUP

- To avoid picture noise (interference), leave an adequate distance between the VCR and TV.
- If the 4:3 picture format is used; the fixed images on the sides of the screen may remain visible on the screen. This phenomenon is common to all manufactures and in consequence the manufactures warranty does not cover the product bearing this phenomenon.

EXTERNAL EQUIPMENT SETUP

### When connecting with an antenna



### 1. How to connect

- 1 Connect the RF antenna out socket of the VCR to the **ANTENNA/CABLE IN** socket on the set.
- 2 Connect the antenna cable to the RF antenna in socket of the VCR.

### 2. How to use

- Set VCR output switch to 3 or 4 and then tune TV to the same channel number.
- Insert a video tape into the VCR and press PLAY on the VCR. (Refer to the VCR owner's manual.)



## When connecting with a RCA cable

### 1. How to connect

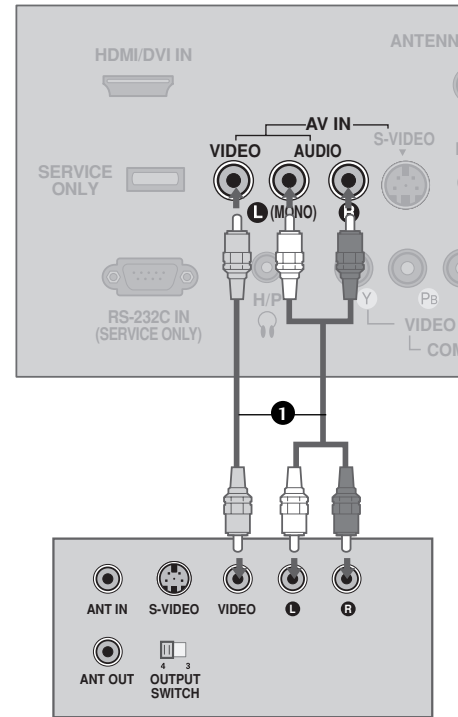
- 1 Connect the **AUDIO/VIDEO** jacks between TV and VCR. Match the jack colors (Video = yellow, Audio Left = white, and Audio Right = red)

### 2. How to use

- Insert a video tape into the VCR and press **PLAY** on the VCR. (Refer to the VCR owner's manual.)
- Select **AV** input source by using the **INPUT** button on the remote control.

#### ! NOTE

- ▶ If you have a mono VCR, connect the audio cable from the VCR to the **AUDIO L/MONO** jack of the set.



## When connecting with an S-Video cable

### 1. How to connect

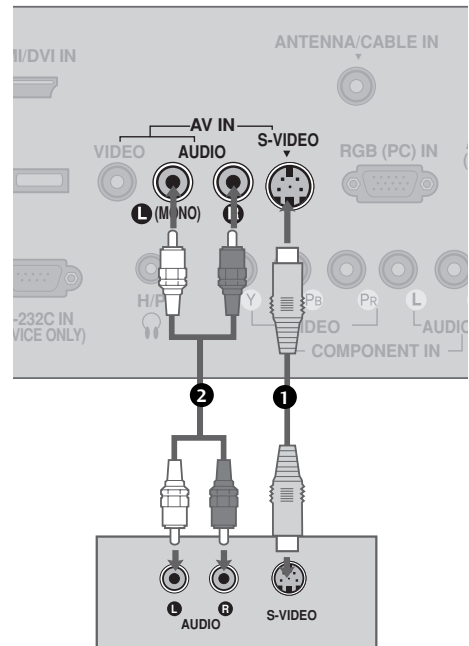
- 1 Connect the **S-VIDEO** output of the VCR to the **S-VIDEO** input on the set.
- 2 Connect the audio outputs of the VCR to the **AUDIO** input jacks on the set.

### 2. How to use

- Insert a video tape into the VCR and press **PLAY** on the VCR. (Refer to the VCR owner's manual.)
- Select **AV** input source by using the **INPUT** button on the remote control.

#### ! NOTE

- ▶ The picture quality is improved: compared to normal composite (RCA cable) input.



#### ! CAUTION

- ▶ Do not connect to both Video and S-Video at the same time. In the event that you connect both Video and the S-Video cables, only the S-Video will work.

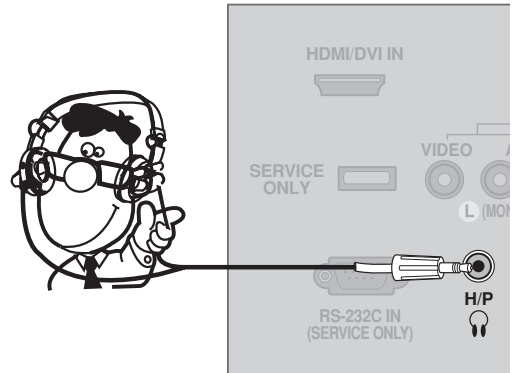
# EXTERNAL EQUIPMENT SETUP

## HEADPHONE SETUP

You can listen to the sound through the headphone.

### 1. How to connect

- 1 Plug the headphone into the headphone socket.
- 2 To adjust the headphone volume, press the **VOL +** or **-** button. If you press the **MUTE** button, the sound from the headphone is switched off.



# PC SETUP

This TV provides Plug and Play capability, meaning that the PC adjusts automatically to the TV's settings.

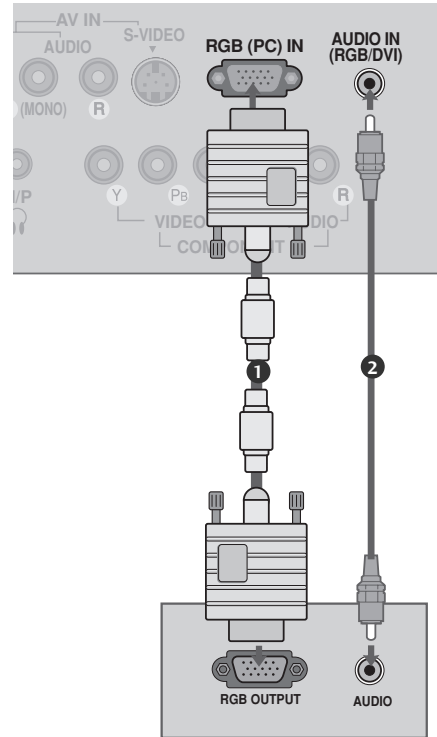
## When connecting D-sub 15pin cable

### 1. How to connect

- 1 Connect the RGB output of the PC to the **RGB (PC) IN** jack on the set.
- 2 Connect the PC audio output to the **AUDIO IN (RGB/DVI)** jack on the set.

### 2. How to use

- Turn on the PC and the TV.
- Select **RGB-PC** input source by using the **INPUT** button on the remote control.



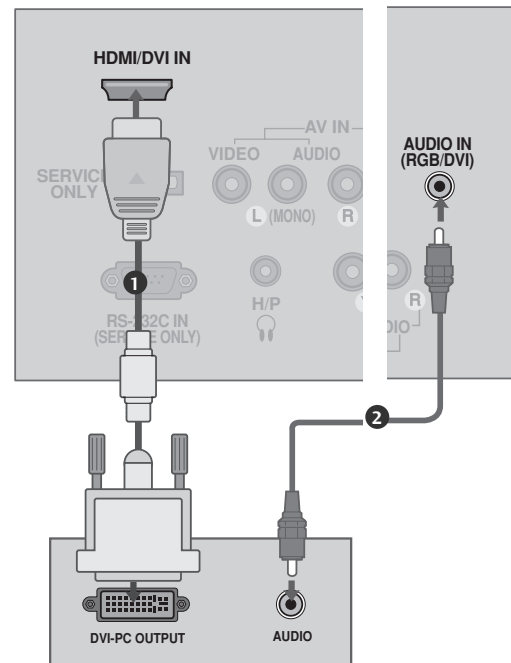
## When connecting HDMI to DVI cable

### 1. How to connect

- 1 Connect the DVI output of the PC to the **HDMI/DVI IN** jack on the set.
- 2 Connect the PC audio output to the **AUDIO IN (RGB/DVI)** jack on the set.

### 2. How to use

- Turn on the PC and the TV.
- Select **HDMI** input source by using the **INPUT** button on the remote control.



# EXTERNAL EQUIPMENT SETUP

## ! NOTES

- ▶ To get the the best picture quality, adjust the PC graphics card to 1024x768, 60Hz.
- ▶ Depending on the graphics card, DOS mode may not work if a HDMI to DVI Cable is in use.
- ▶ If the video doesn't fit the screen, try pressing the ADJUST button to adjust the screen position of TV.
- ▶ Check the image on your TV. There may be noise associated with the resolution, vertical pattern, contrast or brightness in PC mode. If noise is present, change the PC output to another resolution, change the refresh rate to another rate or

adjust the brightness and contrast on the VIDEO menu until the picture is clear. If the refresh rate of the PC graphic card can not be changed, change the PC graphic card or consult the manufacturer of the PC graphic card.

- ▶ Avoid keeping a fixed image on the screen for a long period of time. The fixed image may become permanently imprinted on the screen.
- ▶ The synchronization input form for Horizontal and Vertical frequencies is separate.

## Supported Display Specifications

Resolution	Horizontal Frequency(KHz)	Vertical Frequency(Hz)	
640x350	31.469	70.08	● * RGB-PC mode only
720x400	31.469	70.08	
640x480	31.469	59.94	
800x600	37.879	60.31	
1024x768	48.363	60.00	
1280x768	47.776	59.87	
1360x768	47.712	60.01	
1366x768	60.023	60.00	
720x480	31.469	59.94	● * HDMI mode only
	31.500	60.00	
1280x720	44.96	59.94	●
	45.000	60.00	
1920x1080	33.72	59.94	●
	33.75	60.00	

## Screen Setup for PC mode

### Overview

When the RGB input of the set is connected to a PC output, select the RGB-PC as the main input mode.

When HDMI connect to PC output and select HDMI input, this function is used.

After connecting RGB-PC or HDMI to PC output and checking the screen quality.

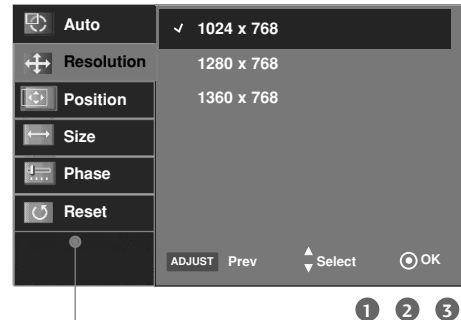
When you change the resolution, select the proper resolution in present input to see the best picture appearance.

### Adjustment for screen Resolution, Position, Size, and Phase

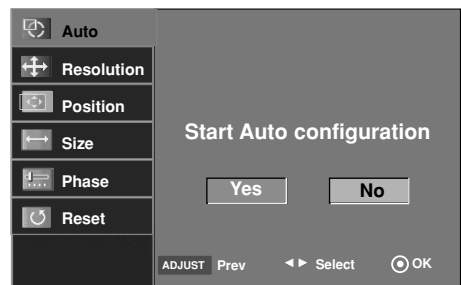
- 1 Press the **ADJUST** button and then use **▲** or **▼** button to select **Resolution**, **Position**, **Size**, or **Phase**.
- 2 Press the **ENTER** button and then use **▲ ▼ ◀ ▶** button to make appropriate adjustments.
  - The **Phase** adjustment range is **0 ~ +64**.  
In HDMI-PC mode, **Phase** is not available.
  - The **Size** adjustment range is **-30 ~ +30**.  
In HDMI-PC mode, **Size** is not available.
- 3 Press the **ENTER** button.

### Auto Configuration and Initializing (Reset to original factory values)

- 1 Press the **ADJUST** button and then use **▲** or **▼** button to select **Auto** or **Reset**.
- 2 Press the **ENTER** button and then use **◀** or **▶** button to select **Yes**.
- 3 Press the **ENTER** button.



- Auto** This function is to adjust picture position and minimizes image shaking automatically.
- Resolution** This function allows you select resolution of XGA/WXGA.
- Position** This function is to adjust picture to left/right and up/down as you prefer.
- Size** This function is to minimize any vertical bars or stripes visible on the screen background. And the horizontal screen size will also change.
- Phase** This function allows you to remove any horizontal noise and clear or sharpen the image of characters.
- Reset** This function is to initialize the adjusted value.



1 2 3

# WATCHING TV / CHANNEL CONTROL

## REMOTE CONTROL FUNCTIONS

When using the remote control, aim it at the remote control sensor on the TV.

**SAP** • Analog mode: Selects MTS sound (Mono, Stereo, or a SAP) ► **p.49**  
• DTV mode: Changes the audio language.

**PICTURE** Selects the factory preset picture depend on the viewing environment. ► **p.38**

**SOUND** Selects the factory preset sound for type of program. ► **p.46**

**TIMER** Select the amount of time before your TV turns off automatically. ► **p.59**

**VOLUME UP /DOWN** Increase/decrease the sound level.

**ADJUST** Adjust the screen resolution, position, size and phase. ► **p.27**

**MUTE** Switch the sound on or off. ► **p.30**

**CC** Select a closed caption. ► **p.52**

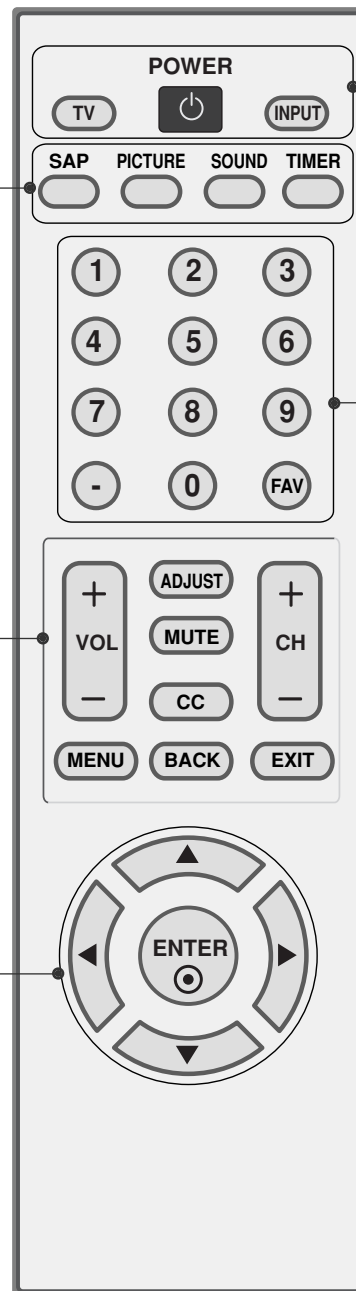
**CHANNEL UP/DOWN** Select available channels.

**MENU** Displays the main menu.

**BACK** Tune to the last channel viewed.  
Return to the previous menu.

**EXIT** Clear all on-screen displays and return to TV viewing from any menu.

**THUMBSTICK** (Up/Down/Left Right/ENTER) Navigate the on-screen menus and adjust the system settings to your preference.



**POWER** Turns your TV or any other programmed equipment on or off, depending on the mode.

**TV** In AV, Component, RGB-PC, and HDMI input sources, screen returns to the last TV channel.

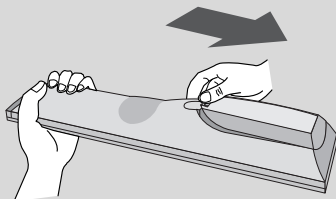
**INPUT** External input modes rotate in regular sequence: TV, AV, Component, RGB-PC, and HDMI. (AV, Component, RGB-PC, and HDMI input sources are linked automatically, only if a device is connected.)

#### NUMBER button

— (DASH) Used to enter a program number for multiple program channels such as 2-1, 2-2, etc.

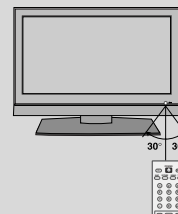
**FAV** Scroll through the programmed Favorite channels. ► **p.34**

### Installing Batteries



- Open the battery compartment cover on the back side and install the batteries matching correct polarity (+ with +, - with -).
- Install two 1.5V AAA batteries. Don't mix old or used batteries with new ones.
- Close cover.

### Remote control effective range



- Use a remote control up to 7 meters distance and 30 degree (left/right) within the receiving unit scope.
- Dispose of used batteries in a recycle bin to preserve environment.

# WATCHING TV / CHANNEL CONTROL

## TURNING ON TV

- 1 First, connect power cord correctly.  
At this moment, the TV switches to standby mode.
  - In standby mode to turn TV on, press the  $\phi/|$ , **INPUT**, **CH** ( $\blacktriangle$  or  $\blacktriangledown$ ) button on the TV or press the **POWER**, **INPUT**, **TV**, **CH** (+ or -), **Number (0~9)** button on the remote control.
- 2 Select the viewing source by using the **INPUT** button on the remote control.
  - This TV is programmed to remember which power state it was last set to, even if the power cord is out.
- 3 When finished using the TV, press the **POWER** button on the remote control. The TV reverts to standby mode.



### ! NOTE

- ▶ If you intend to be away on vacation, disconnect the power plug from the wall power outlet.

## CHANNEL SELECTION

- 1 Press the **CH** (+ or -) or **NUMBER** buttons to select a channel number.



## VOLUME ADJUSTMENT

Adjust the volume to suit your personal preference.

- 1 Press the **VOL** (+ or -) button to adjust the volume.
- 2 If you want to switch the sound off, press the **MUTE** button.
- 3 You can cancel the Mute function by pressing the **MUTE** or **VOL** (+ or -) button.



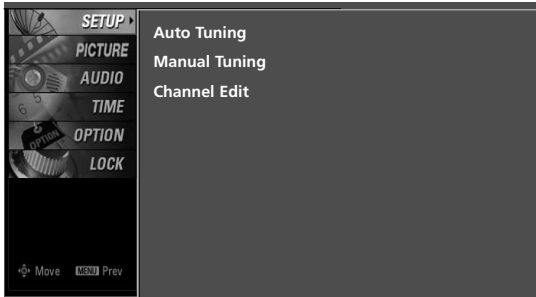


# ON-SCREEN MENUS SELECTION

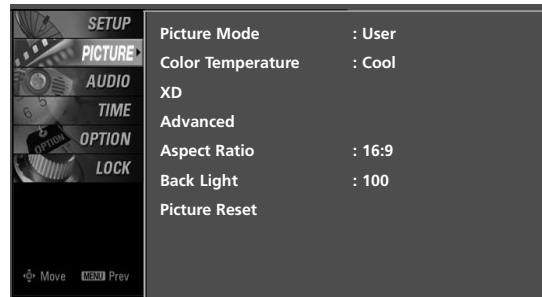
Your TV's OSD (On Screen Display) may differ slightly from what is shown in this manual.

- 1 Press the **MENU** button and then use **▲** or **▼** button to select the each menu.
- 2 Press the **▶** button and then use **▲ ▼ ◀ ▶** button to display the available menus.

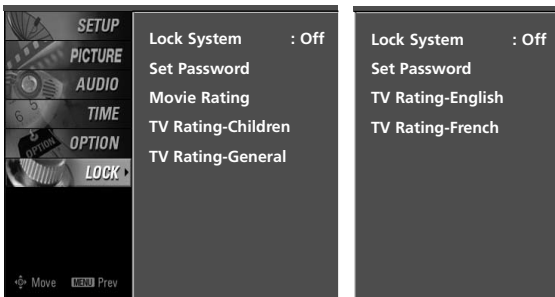
## SETUP



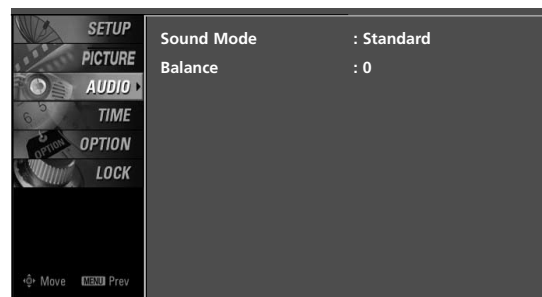
## PICTURE



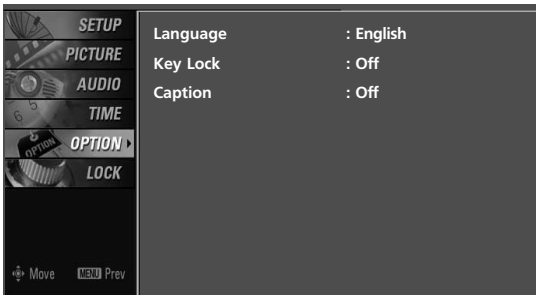
## LOCK



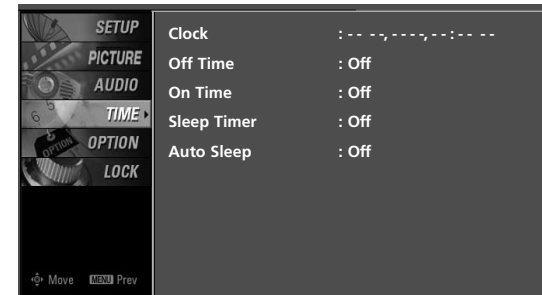
## AUDIO



## OPTION



## TIME



# WATCHING TV / CHANNEL CONTROL

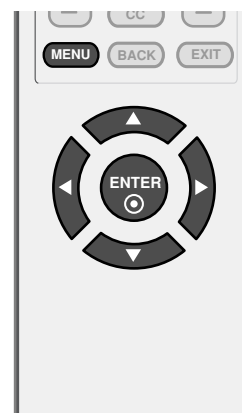
## CHANNEL SEARCH

### Auto Scan (Auto Tuning)

Automatically finds all channels available through antenna or cable inputs, and stores them in memory on the channel list.

Run Auto Tuning again after any Antenna/Cable connection changes.

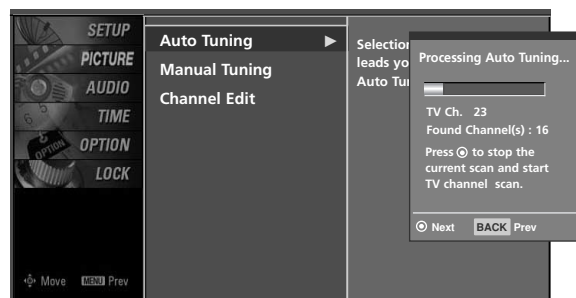
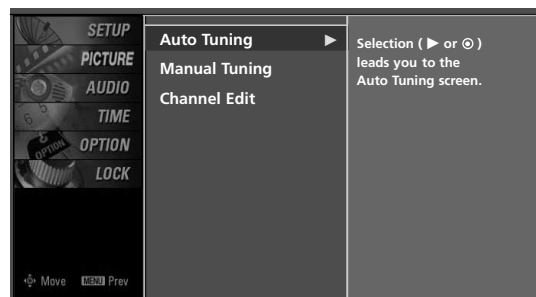
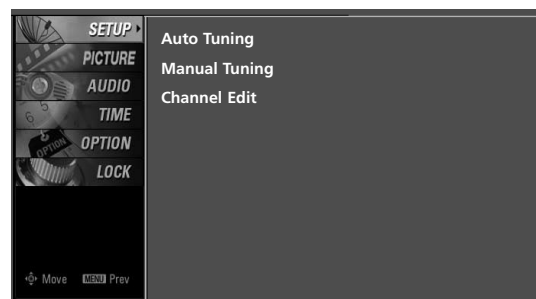
A password is required to gain access to Auto Tuning menu if the Lock System is turned on.



**1** Press the **MENU** button and then use ▲ or ▼ button to select the **SETUP** menu.

**2** Press the ► button and then use ▲ or ▼ button to select **Auto Tuning**.

**3** Press the **ENTER** button to begin the channel search. Allow **Auto Tuning** to complete the channel search cycle for **ANTENNA** and **CABLE**.

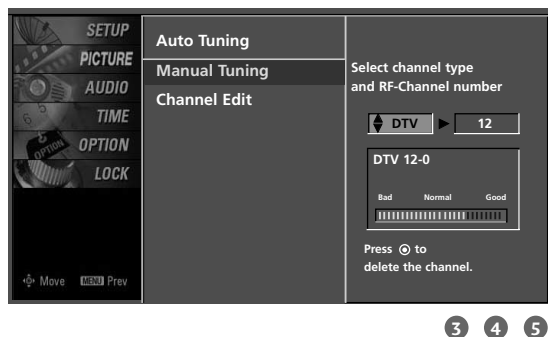
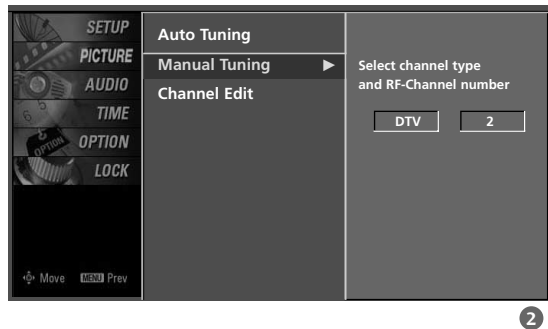
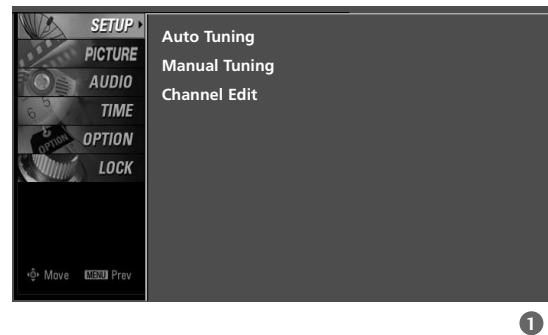
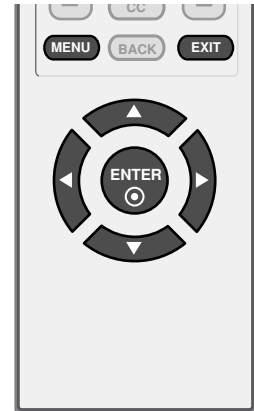


## Add/Delete Channel (Manual Tuning)

A password is required to gain access to Manual Tuning menu if the Lock System is turned on.

If selecting DTV or CADTV input signal, you can view the on-screen signal strength monitor to see the quality of the signal being received.

- 1 Press the **MENU** button and then use ▲ or ▼ button to select the **SETUP** menu.
- 2 Press the ► button and then use ▲ or ▼ button to select **Manual Tuning**.
- 3 Press the ► button and then use ▲ or ▼ button to select **TV, DTV, CATV, and CADTV**.
- 4 Press the ► button and then use ▲ or ▼ button to select channel you want to add or delete.
- 5 Press the **ENTER** button to add or delete the channel.
- 6 Press the **EXIT** button to return to TV viewing or press the **BACK** button to return to the previous menu.



# WATCHING TV / CHANNEL CONTROL

## Channel Editing

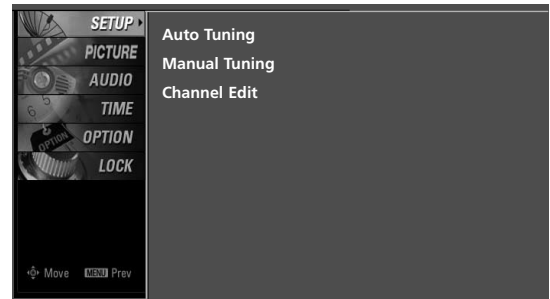
There are two different ways in order to add or delete scanned channels. One is "Custom List" and the other is "Favorite List" in the channel list. Both of them are available after **Auto Tuning** on the **SETUP** menu.

A Custom List can be created by toggling each channel on or off with **ENTER** button. The channels in the Custom List are displayed in black, and the channels deleted from the Custom List are displayed in gray. Once a channel is highlighted you can add or delete the channel by referring to the small window at the top-left corner of the screen.

You can create your own Favorite List. Use the **FAV** button on the remote control when a channel is highlighted and then add or delete the channel to/from your Favorite List.

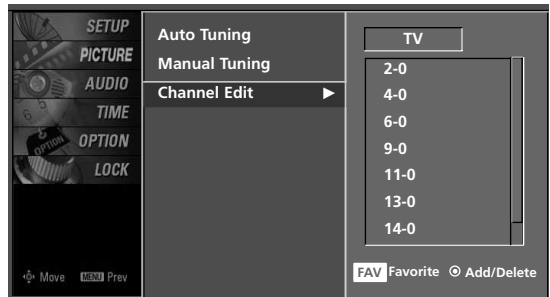


1 Press the **MENU** button and then use ▲ or ▼ button to select the **SETUP** menu.



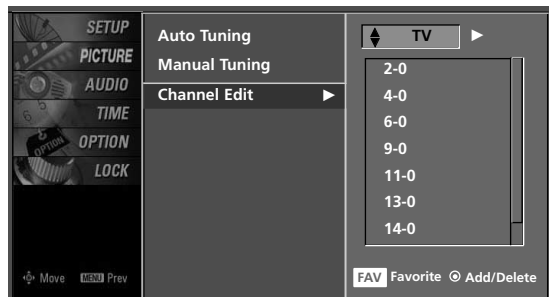
1

2 Press the ► button and then use ▲ or ▼ button to select **Channel Edit**.



2

3 Press the ► button and then use ▲ or ▼ button to select **TV**, **DTV**, **CATV**, and **CADTV**.



3 4

4 Press the ► button and then use ▲ or ▼ button to select channel and then use the **ENTER** button to add or delete it.

Press **FAV** button to add the channel to the Favorite List. The surfing icon will appear in back of that channel number.

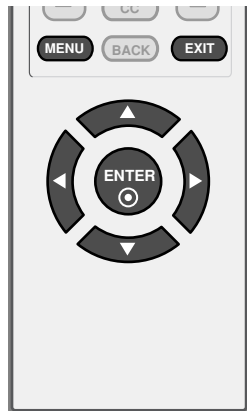
5 Press the **EXIT** button to return to TV viewing or press the **BACK** button to return to the previous menu.

# KEY LOCK

The TV can be set up so that it can only be used with the remote control.

This feature can be used to prevent unauthorized viewing by locking out the front panel controls.

This TV is programmed to remember which option it was last set to even if you turn the TV off.



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**1** Press the **MENU** button and then use ▲ or ▼ button to select the **OPTION** menu.

---

**2** Press the ► button and then use ▲ or ▼ button to select **Key lock**.

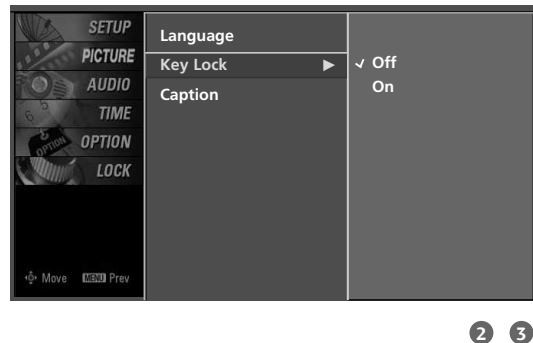
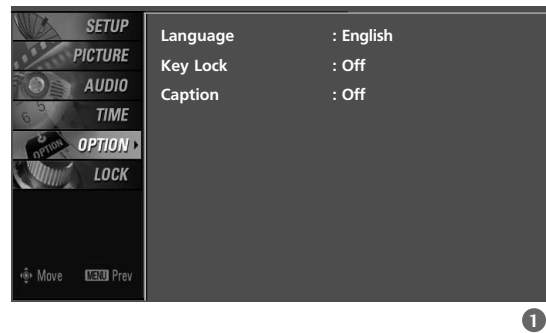
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**3** Press the ► button and then use ▲ or ▼ button to select **On** or **Off**.

---

**4** Press the **EXIT** button to return to TV viewing or press the **BACK** button to return to the previous menu.

---



**3**

# PICTURE CONTROL

## PICTURE SIZE (ASPECT RATIO) CONTROL

This feature allows an analog picture with a 4:3 aspect ratio is displayed on your TV. When you receive an analog picture with a 4:3 aspect ratio on your 16:9 TV, you need to specify how the picture is to be displayed.

- RGB-PC input source use 4:3 or 16:9 aspect ratio.



### ! NOTE

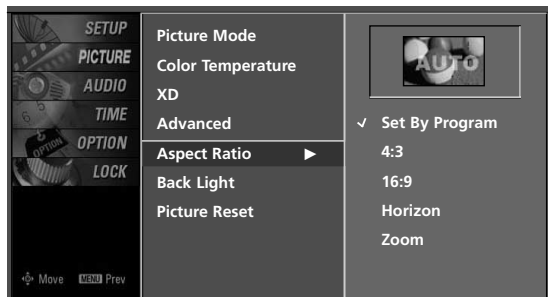
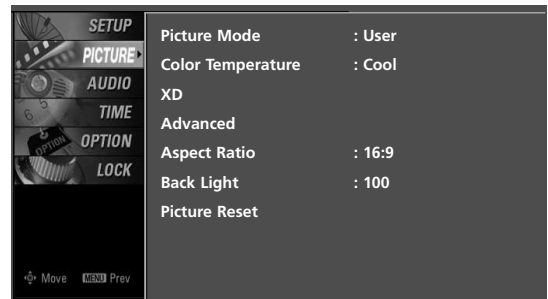
- ▶ If a fixed image is displayed on the screen for a long time, the image may become imprinted on the screen and remain visible. This phenomenon is common to all manufactures and in consequence the manufactures warranty does not cover the product bearing this phenomenon.

- 1 Press the **MENU** button and then use ▲ or ▼ button to select the **PICTURE** menu.

- 2 Press the ► button and then use ▲ or ▼ button to select **Aspect Ratio**.

- 3 Press the ► button and then use ▲ or ▼ button to select the desired picture option (**Set By Program**, **4:3**, **16:9**, **Horizon**, or **Zoom**).

- 4 Press the **EXIT** button to return to TV viewing or press the **BACK** button to return to the previous menu.



3

### Set by program

Selects the proper picture proportion to match the source's image.

(4:3 → 4:3)

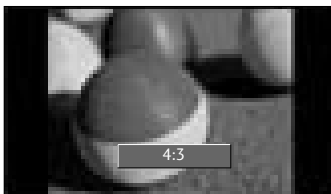


(16:9 → 16:9)



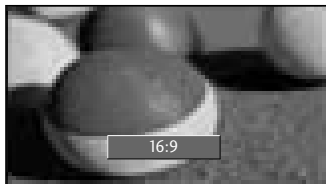
### 4:3

Choose 4:3 when you want to view a picture with an original 4:3 aspect ratio.



### 16:9

Adjust the picture horizontally, in a linear proportion to fill the entire screen.



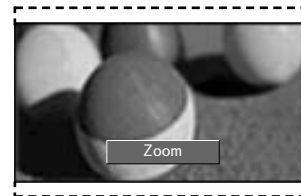
### Horizon

The screen size is, more enlarged at both sides, to create a spectacular view.



### Zoom

Choose Zoom when you want to view the picture without any alteration. However, the top and bottom portions of the picture will be cropped.



# PICTURE CONTROL

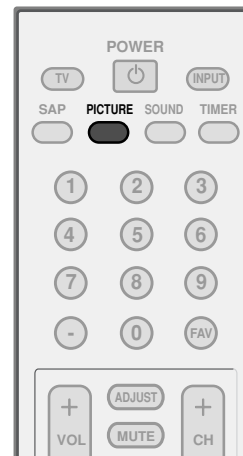
## PRESET PICTURE SETTINGS

### Picture Mode - Preset

Picture Mode adjusts the TV for the best picture appearance. Select the preset value in the Picture Mode menu based on the program category.

**Dynamic, Standard, Mild** Settings are preset for the optimum picture quality at the factory and are not adjustable.

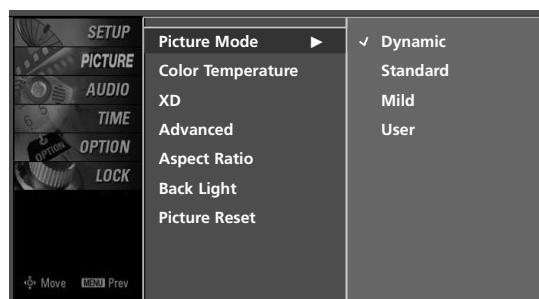
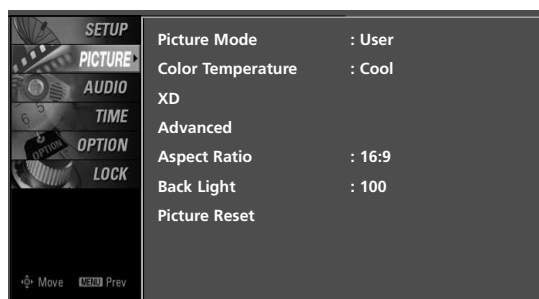
In the **User** mode only, user can directly adjust the contrast, brightness, color, sharpness, tint.



- 1 Press the **PICTURE** button repeatedly to select the picture appearance setup option as below :  
**Dynamic, Standard, Mild, and User** (your own settings).

- 2 Press the **EXIT** button to save and return to TV viewing.

- You can also use the **PICTURE** menu to adjust **Picture Mode**.



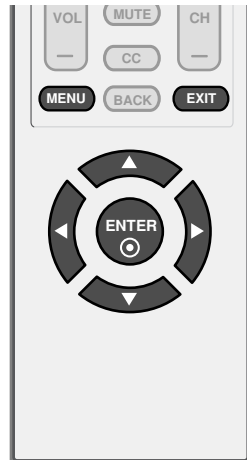


## Color Tone - Preset

Choose one of three automatic color adjustments. Set to warm to enhance hotter colors such as red, or set to cool to see less intense colors with more blue.

When selecting Picture Mode options (Dynamic, Standard and Mild), Color Temperature is automatically change.

When selecting Picture Mode options (User), you can choose the Color Temperature.

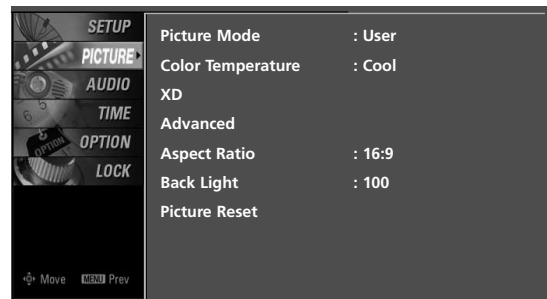


**1** Press the **MENU** button and then use ▲ or ▼ button to select the **PICTURE** menu.

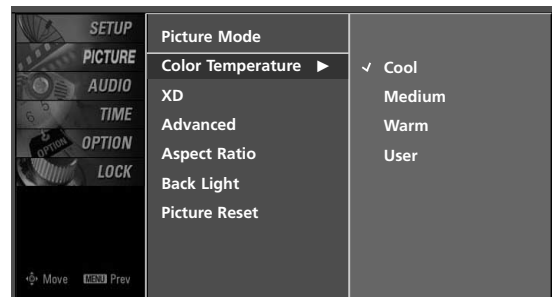
**2** Press the ► button and then use ▲ or ▼ button to select **Color Temperature**.

**3** Press the ► button and then use ▲ or ▼ button to select either **Cool, Medium, Warm** or **User**.

**4** Press the **EXIT** button to return to TV viewing or press the **BACK** button to return to the previous menu.



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# PICTURE CONTROL

## MANUAL PICTURE ADJUSTMENT

### Picture Mode - User Mode

Adjust the picture appearance to suit your preference and viewing situations.



**1** Press the **MENU** button and then use **▲** or **▼** button to select the **PICTURE** menu.

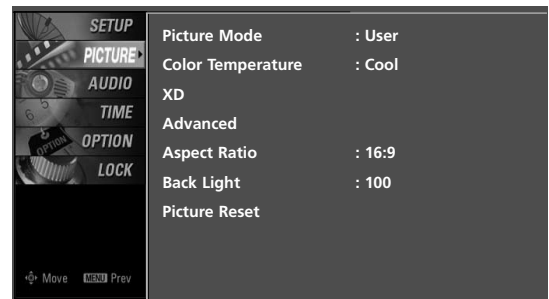
**2** Press the **▶** button and then use **▲** or **▼** button to select **Picture Mode**.

**3** Press the **▶** button and then use **▲** or **▼** button to select **User**.

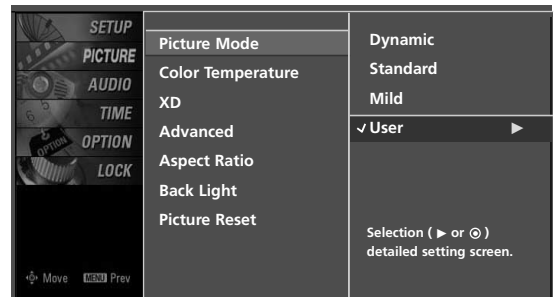
**4** Press the **▶** button and then use **▲** or **▼** button to select the desired picture option (**Contrast**, **Brightness**, **Color**, **Sharpness**, or **Tint**).

**5** Press the **▶** button and then use **◀** or **▶** button to make appropriate adjustments.

**6** Press the **EXIT** button to return to TV viewing or press the **BACK** button to return to the previous menu.



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## Color Tone - User Mode

You can also adjust the detailed settings (Red, Green, Blue) by selecting the **Color Temperature-User** menu. This feature operate only if the picture mode set **User**.

**1** Press the **MENU** button and then use ▲ or ▼ button to select the **PICTURE** menu.

**2** Press the ► button and then use ▲ or ▼ button to select **Color Temperature**.

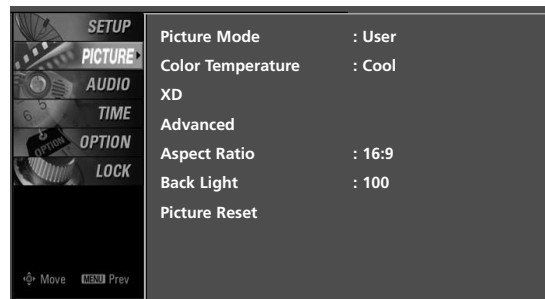
**3** Press the ► button and then use ▲ or ▼ button to select **User**.

**4** Press the ► button and then use ▲ or ▼ button to select **Red, Green, or Blue**.

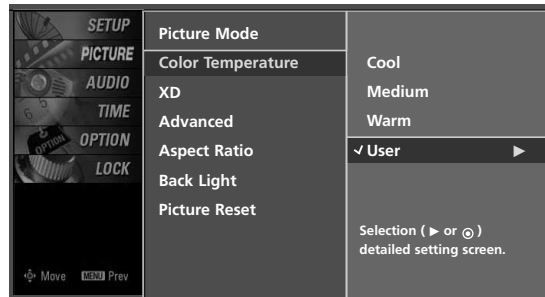
**5** Press the ► button and then use ◀ or ▶ button to make appropriate adjustments.

- The adjustment range of **Red, Green, or Blue** is -20~ +20.

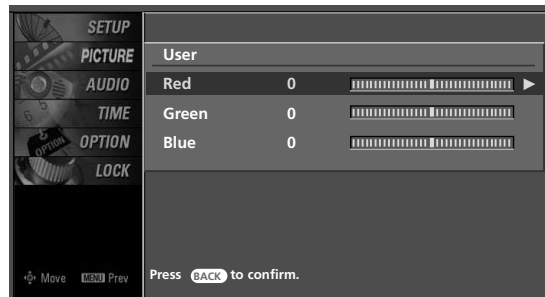
**6** Press the **EXIT** button to return to TV viewing or press the **BACK** button to return to the previous menu.



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# PICTURE CONTROL

## XD

XD is LG's unique picture improving technology to display a real HD source through an advanced digital signal processing algorithm.

When selecting Picture Mode options (Dynamic, Standard, and Mild), XD is automatically changed to Auto.

When selecting Picture Mode option (User), you can choose the Auto / Manual.

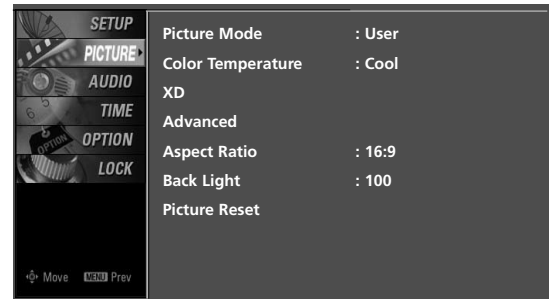
When selecting the Manual, you can adjust the Contrast, Color and Noise.



**1** Press the **MENU** button and then use **▲** or **▼** button to select the **PICTURE** menu.

**2** Press the **▶** button and then use **▲** or **▼** button to select **XD**.

**3** Press the **▶** button and then use **▲** or **▼** button to select **Auto** or **Manual**.



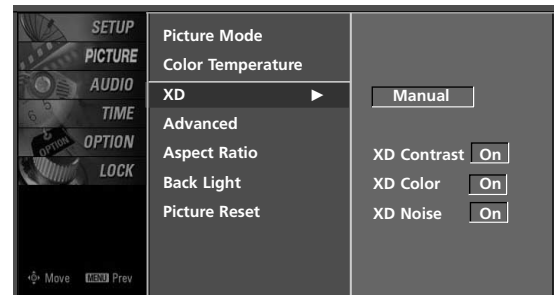
**1**

### Selecting the Manual

1. Press the **▶** button and then use **◀** or **▶** button to select **XD Contrast**, **XD Color** or **XD Noise**.

- **XD Contrast:** Optimizing the contrast automatically according to the brightness of the reflection.
- **XD Color:** Adjusting the colors of the reflection automatically to reproduce as closely as possible to the natural colors.
- **XD Noise :** Removing the noise up to the point where it does not damage the original picture.

2. Use the **▲** or **▼** button to select **On** or **Off**.



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**4** Press the **EXIT** button to return to TV viewing or press the **BACK** button to return to the previous menu.

## ADVANCED - BLACK (DARKNESS) LEVEL

Adjusting the contrast and the brightness of the screen using the black level of the screen.

This feature operates only in AV or HDMI mode.



1 Press the **MENU** button and then use ▲ or ▼ button to select the **PICTURE** menu.

2 Press the ► button and then use ▲ or ▼ button to select **Advanced**.

3 Press the ► button and then use ▲ or ▼ button to select **Black level Low** or **High**.

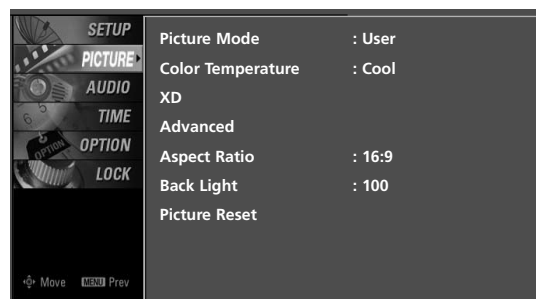
■ **Low**

The screen gets darker.

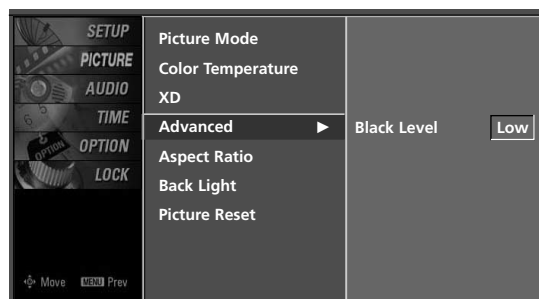
■ **High**

The screen gets brighter.

4 Press the **EXIT** button to return to TV viewing or press the **BACK** button to return to the previous menu.



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# PICTURE CONTROL

## BACK LIGHT

Adjust the brightness of LCD panel to control the brightness of screen.

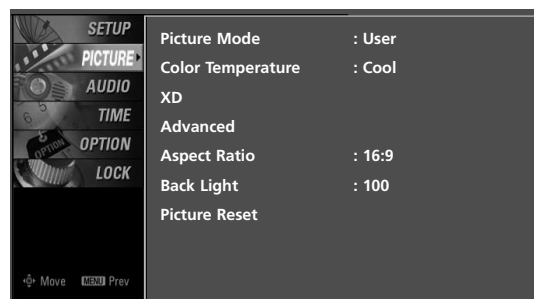


**1** Press the **MENU** button and then use ▲ or ▼ button to select the **PICTURE** menu.

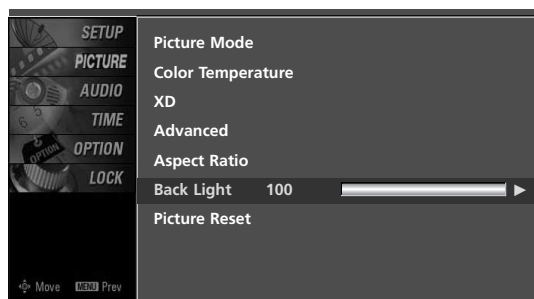
**2** Press the ► button and then use ▲ or ▼ button to select **Back Light**.

**3** Press the ► button and then use ◀ or ▶ button to make appropriate adjustments.

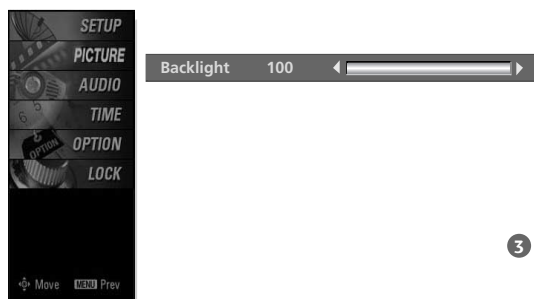
**4** Press the **EXIT** button to return to TV viewing or press the **BACK** button to return to the previous menu.



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# PICTURE RESET

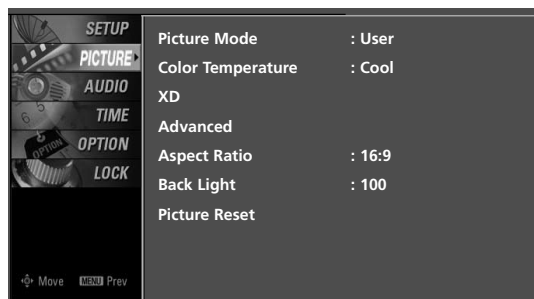
Use to quickly reset all the Picture menu options to their original factory preset values.



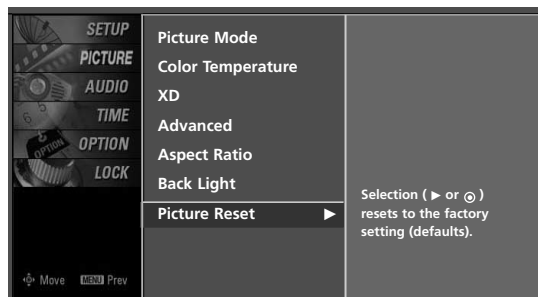
1 Press the **MENU** button and then use ▲ or ▼ button to select the **PICTURE** menu.

2 Press the ► button and then use ▲ or ▼ button to select **Picture Reset**

3 Press the ► button to reset the Picture menu options to original values.



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# SOUND & LANGUAGE CONTROL

## PRESET SOUND SETTINGS (SOUND MODE)

Sound Mode lets you enjoy the best sound without any special adjustment because the TV sets the appropriate sound options based on the program content.

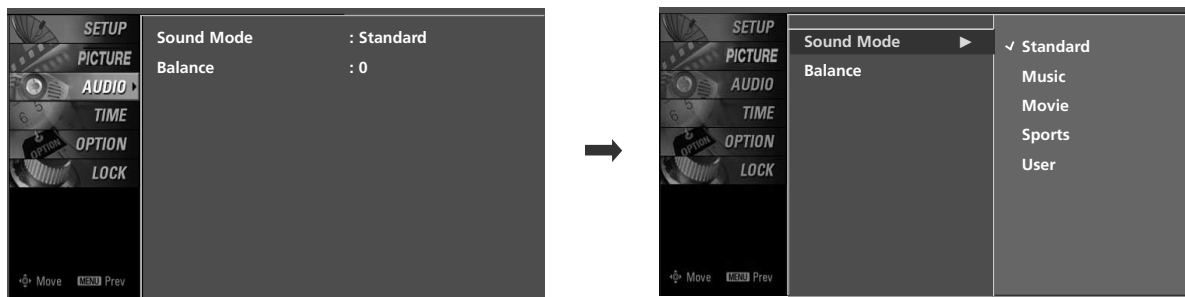
Standard, Music, Movie, and Sports are preset for good sound quality at the factory and are not adjustable.



**1** Press the **SOUND** button repeatedly to select the appropriate sound setup as below :  
**Standard, Music, Movie, Sports, and User** (your own settings).

**2** Press **EXIT** button to return to TV viewing.

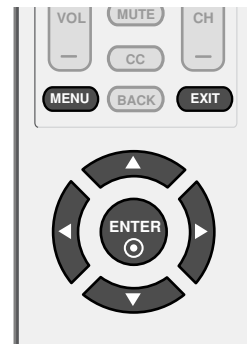
■ You can also adjust **Sound Mode** in the **AUDIO** menu.





# SOUND SETTING ADJUSTMENT - USER MODE

Adjust the sound to suit your taste and room situations.



1 Press the **MENU** button and then use ▲ or ▼ button to select the **AUDIO** menu.

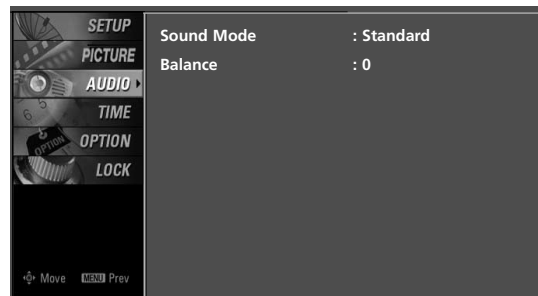
2 Press the ► button and then use ▲ or ▼ button to select **Sound Mode**.

3 Press the ► button and then use ▲ or ▼ button to select **User**.

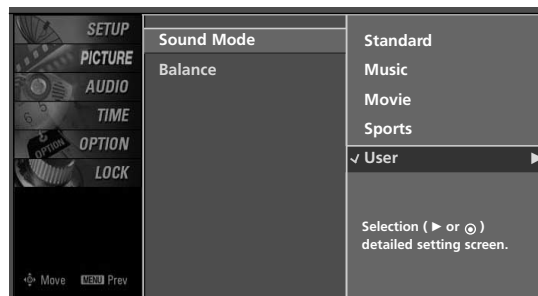
4 Press the ► button and then use ▲ or ▼ button to select the desired sound option (**Treble** or **Bass**).

5 Press the ► button and then use ◀ or ▶ button to make appropriate adjustments.

6 Press the **EXIT** button to return to TV viewing or press the **BACK** button to return to the previous menu.



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# SOUND & LANGUAGE CONTROL

## BALANCE

Adjust the left/right sound of speaker to suit your taste and room situations.

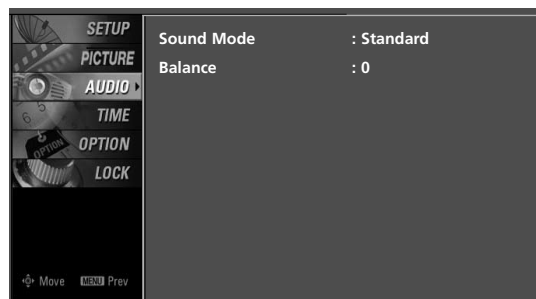


1 Press the **MENU** button and then use ▲ or ▼ button to select the **AUDIO** menu.

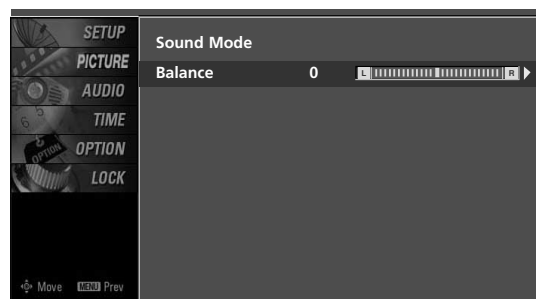
2 Press the ► button and then use ▲ or ▼ button to select **Balance**.

3 Press the ► button and then use ◀ or ▶ button to make appropriate adjustments.

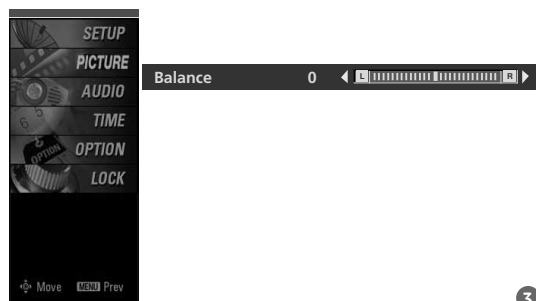
4 Press the **EXIT** button to return to TV viewing or press the **BACK** button to return to the previous menu.



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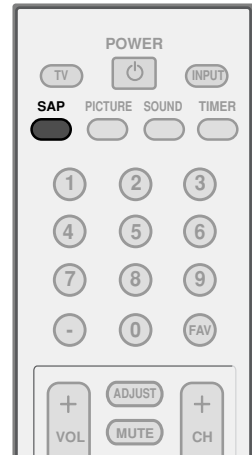
## STEREO/SAP BROADCASTS SETUP

This TV can receive MTS stereo programs and any SAP (Secondary Audio Program) that accompanies the stereo program if the station transmits an additional sound signal as well as the original one and when you select Stereo or SAP on the remote control.

Mono sound is automatically received if the broadcast is only in Mono; even though Stereo or SAP has been selected.

Select Mono if you want to listen to the mono sound in remote areas during stereo/SAP broadcasting.

Stereo or SAP can be received in Analog channel.



- 1 Use the **SAP** button to select your desired MTS mode in analog signal. Each time you press the **SAP** button, **Mono**, **Stereo**, or **SAP** appear in turn.
  - If other languages available on the digital signal, select them with the **SAP** button.
- 2 Press **EXIT** button to save and return to TV viewing.

# SOUND & LANGUAGE CONTROL

## AUDIO LANGUAGE

Other languages may be available if a digital signal is provided by the broadcasting station.

This feature operates only in DTV/CADTV mode.



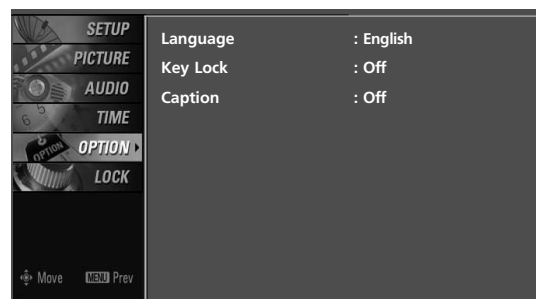
**1** Press the **MENU** button and then use ▲ or ▼ button to select the **OPTION** menu.

**2** Press the ► button and then use ▲ or ▼ button to select **Language**.

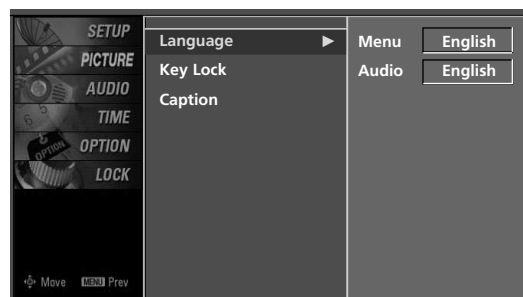
**3** Press the ► button and then use ◀ or ▶ button to select **Audio**.

**4** Use ▲ or ▼ button to select **English, Spanish, or French**.

**5** Press the **EXIT** button to return to TV viewing or press the **BACK** button to return to the previous menu.



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# ON-SCREEN MENUS LANGUAGE SELECTION

The menus can be shown on the screen in the selected language. First select your language.



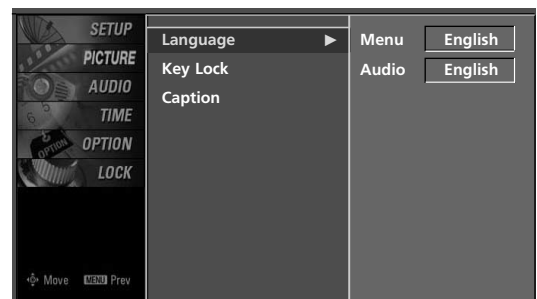
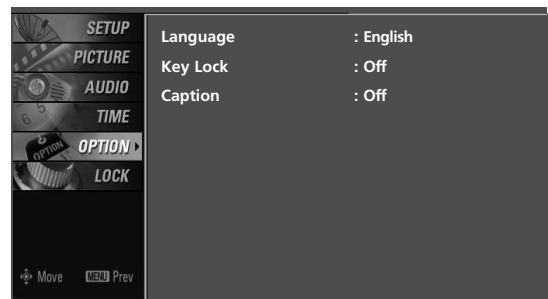
**1** Press the **MENU** button and then use ▲ or ▼ button to select the **OPTION** menu.

**2** Press the ► button and then use ▲ or ▼ button to select **Language**.

**3** Press the ► button and then use ◀ or ▶ button to select **Menu**.

**4** Use ▲ or ▼ button to select your desired language. From this point on, the on-screen menus will be shown in the selected language.

**5** Press the **EXIT** button to return to TV viewing or press the **BACK** button to return to the previous menu.

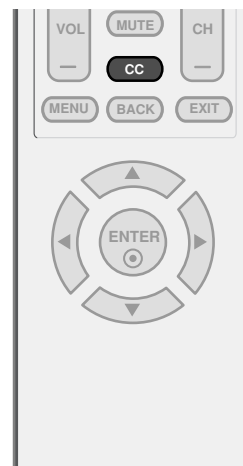


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# SOUND & LANGUAGE CONTROL

## CAPTION MODE

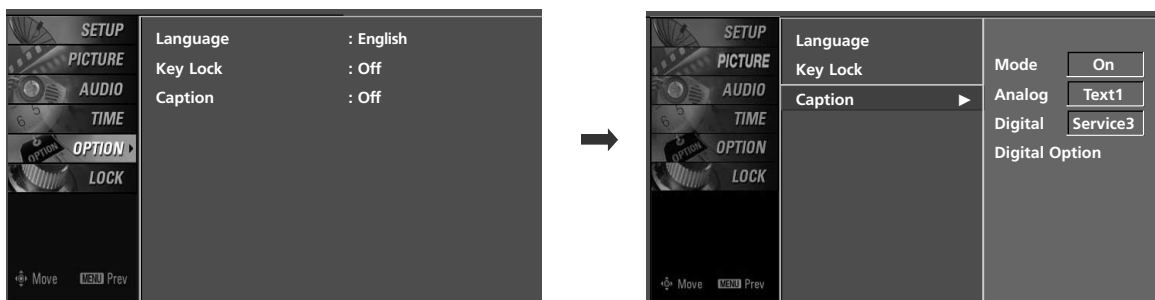
Caption must be provided to help people with hearing loss watch TV.



- 1 Use the **CC** button to select Caption **On** or **Off**.
  - When selecting **Off**, Sub-menus for Analog, DTV, and Digital Option become disabled.

- 2 Press **EXIT** to save and return to TV viewing.

- You can also adjust **Caption** in the **OPTION** menu.



## Analog Broadcasting System Captions

Select a caption mode for displaying captioning information if provided on a program. Analog caption displays information at any position on the screen and is usually the program's dialog.

Caption/Text, if provided by the broadcaster, would be available for both digital and analog channels on the Antenna/Cable.

This TV is programmed to memorize the caption/text mode which was last set when you turn the power off.

This function is only available when **Caption Mode** is set **On**.



**1** Press the **MENU** button and then use **▲** or **▼** button to select the **OPTION** menu.

**2** Press the **▶** button and then use **▲** or **▼** button to select **Caption**.

**3** Press the **▶** button and then use **◀** or **▶** button to select **Analog**.

**4** Use **▲** or **▼** button to select **CC1 ~ 4, Text1 ~ 4**

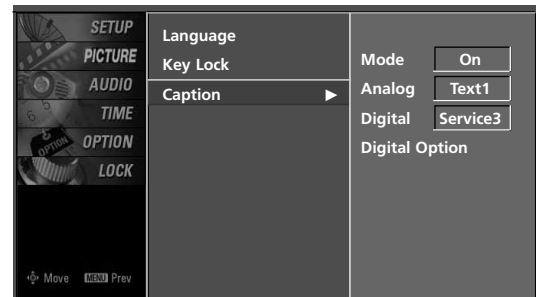
### ■ CAPTION

The term for the words that scroll across the bottom of the TV screen; usually the audio portion of the program provided for the hearing impaired.

### ■ TEXT

The term for the words that appear in a large black frame and almost cover the entire screen; usually messages provided by the broadcaster.

**5** Press the **EXIT** button to return to TV viewing or press the **BACK** button to return to the previous menu.



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# SOUND & LANGUAGE CONTROL

## Digital Broadcasting System Captions

Choose the language you want the DTV/CADTV Captions to appear in.

Other Languages can be chosen for digital sources only if they are included on the program.

This function is only available when **Caption Mode** is set **On**.



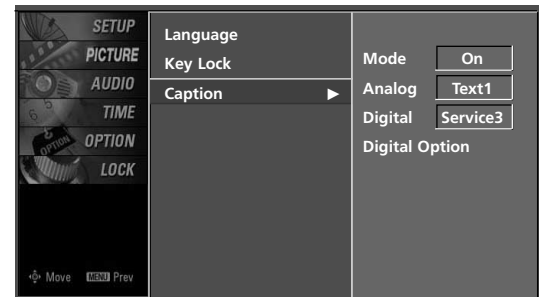
1 Press the **MENU** button and then use ▲ or ▼ button to select the **OPTION** menu.

2 Press the ► button and then use ▲ or ▼ button to select **Caption**.

3 Press the ► button and then use ◀ or ▶ button to select **Digital**.

4 Use ▲ or ▼ button to select **Service1 ~ Service6**.

5 Press the **EXIT** button to return to TV viewing or press the **BACK** button to return to the previous menu.



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## Caption Option

Customize the DTV/CADTV captions that appear on your screen.

This function is only available when **Caption Mode** is set **On**.

**1** Press the **MENU** button and then use **▲** or **▼** button to select the **OPTION** menu.

**2** Press the **▶** button and then use **▲** or **▼** button to select **Caption**.

**3** Press the **▶** button and then use **◀** or **▶** button to select **Digital Option**.

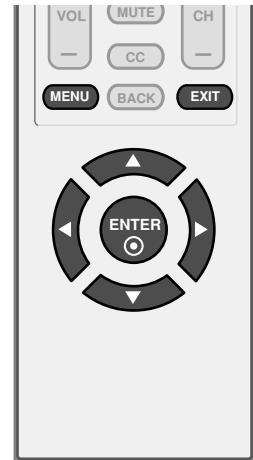
**4** Press the **▶** button and then use **▲** or **▼** button to select **Custom**.

**5** Use **◀** or **▶** button to customize the **Style, Font, etc.**, to your preference.

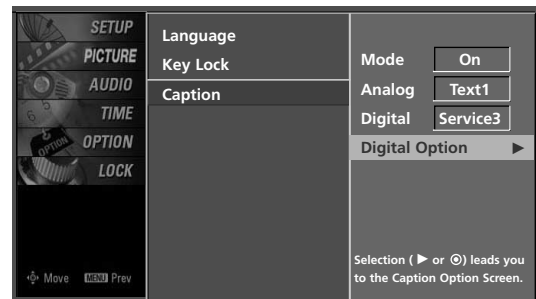
A preview icon is provided at the bottom of the screen, use it to see the caption language.

- **Size** : Set the word size.
- **Font** : Select a typeface for the text.
- **Text Color** : Choose a color for the text.
- **Text Opacity** : Specify the opacity for the text color.
- **Bg (Background) Color** : Select a background color.
- **Bg (Background) Opacity** : Select the opacity for the background color.
- **Edge Type** : Select an edge type.
- **Edge Color** : Select a color for the edges.

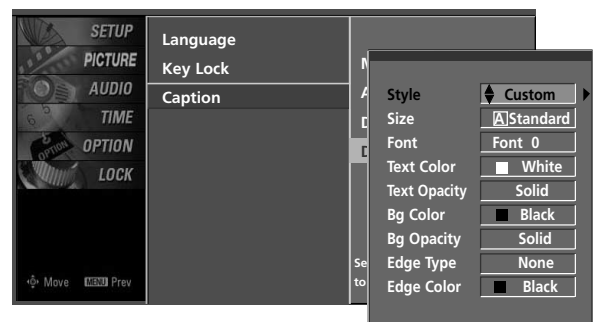
**6** Press the **EXIT** button to return to TV viewing or press the **BACK** button to return to the previous menu.



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# TIME SETTING

## CLOCK SETTING

### Auto Clock Setup

The time is set automatically from a digital channel signal. The digital channel signal includes information for the current time provided by the broadcasting station. Set the clock manually if the current time is set incorrectly by the auto clock function.



1 Press the **MENU** button and then use ▲ or ▼ button to select the **TIME** menu.

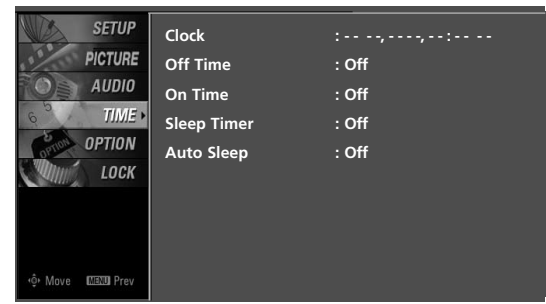
2 Press the ► button and then use ▲ or ▼ button to select **Clock**.

3 Press the ► button and then use ▲ or ▼ button to select **Auto**.

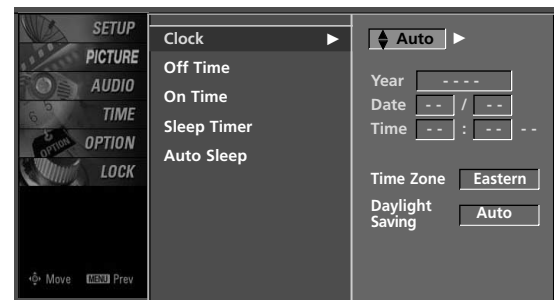
4 Press the ► button and then use ▲ or ▼ button to select your viewing area time zone:  
U.S.A : **Eastern, Central, Mountain, Pacific, Alaska or Hawaii.**  
Canada : **Eastern, Central, Mountain, Pacific, New F.land or Atlantic.**

5 Press the ► button and then use ▲ or ▼ button to select **Auto, Off, On**, depending on whether or not your viewing area observes Daylight Saving time.

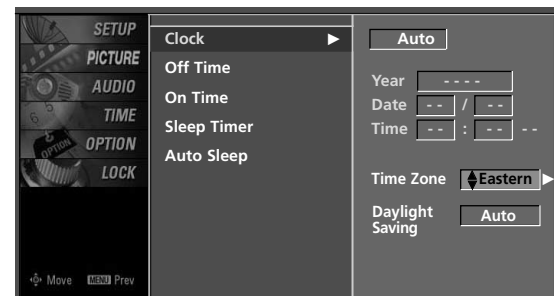
6 Press the **EXIT** button to return to TV viewing or press the **BACK** button to return to the previous menu.



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## Manual Clock Setup

If the current time setting is wrong, reset the clock manually.



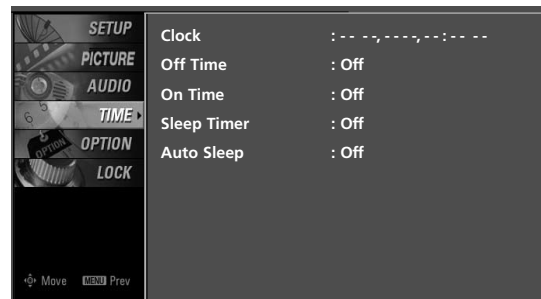
1 Press the **MENU** button and then use ▲ or ▼ button to select the **TIME** menu.

2 Press the ► button and then use ▲ or ▼ button to select **Clock**.

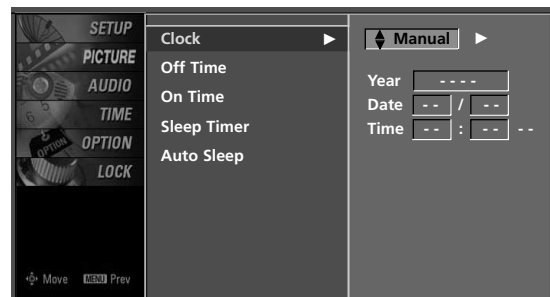
3 Press the ► button and then use ▲ or ▼ button to select **Manual**.

4 Press the ► button and then use ◀ or ▶ button to select either the year, date, or time option. Once selected, use the ▲ or ▼ button to set the year, date, and time options.

5 Press the **EXIT** button to return to TV viewing or press the **BACK** button to return to the previous menu.



1



2 3

# TIME SETTING

## AUTO ON/OFF TIMER SETTING

The timer function operates only if the current time has been set.

The Off-Timer function overrides the On-Timer function if they are both set to the same time.

The TV must be in standby mode for the On-Timer to work. If you do not press any button within 2 hours after the TV turns on with the On Timer function, the TV will automatically revert to standby mode.



- 1 Press the **MENU** button and then use ▲ or ▼ button to select the **TIME** menu.

- 2 Press the ► button and then use ▲ or ▼ button to select **Off Time** or **On Time**.

- 3 Press the ► button and then use ▲ or ▼ button to select **On**.
  - To cancel the **On/Off time** function, select **Off**.

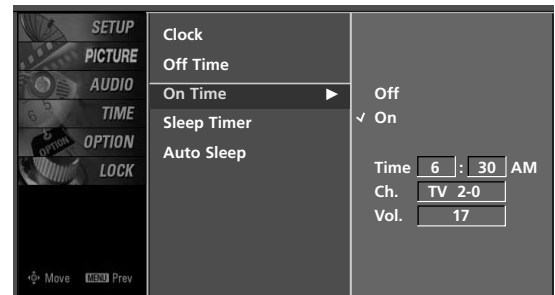
- 4 Press the ► button and then use ▲ or ▼ button to set the hour.

- 5 Press the ► button and then use ▲ or ▼ button to set the minutes.

- 6 **Only On timer**  
Press the ► button and then use ▲ or ▼ button to select the channel at turn-on.

Press the ► button and then use ▲ or ▼ button to set the sound level at turn-on.

- 7 Press the **EXIT** button to return to TV viewing or press the **BACK** button to return to the previous menu.



2 3 4 5 6

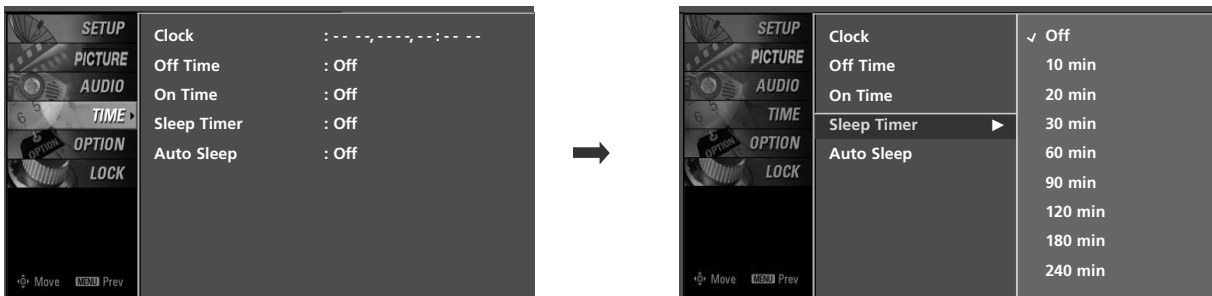
# SLEEP TIMER SETTING

The Sleep Timer turns the TV off at the preset time.  
 Note that this setting is cleared when the TV is turned off.



- 1 Press the **TIMER** button repeatedly to select the number of minutes. First the **Off** option appears on the screen, followed by the following sleep timer options : 10, 20, 30, 60, 90, 120, 180, and 240 minutes.
- 2 When the number of minutes you want is displayed on the screen, press the **ENTER** button. The timer begins to count down from the number of minutes selected.
- 3 To check the remaining minutes before the TV turns off, press the **TIMER** button once.
- 4 To cancel the Sleep Timer, press the **TIMER** button repeatedly to select **Off**.

■ You can also set up the **Sleep Timer** in the **TIME** menu.



# TIME SETTING

## AUTO SHUT-OFF SETTING

If set to on and there is no input signal, the TV turns off automatically after 10 minutes.

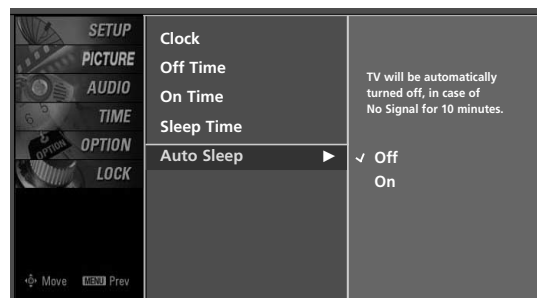


1 Press the **MENU** button and then use ▲ or ▼ button to select the **TIME** menu.

2 Press the ► button and then use ▲ or ▼ button to select **Auto Sleep**.

3 Press the ► button and then use ▲ or ▼ button to select **On** or **Off**.

4 Press the **EXIT** button to return to TV viewing or press the **BACK** button to return to the previous menu.



3

# PARENTAL CONTROL / RATINGS

Parental Control can be used to block specific channels, ratings and other viewing sources.

The Parental Control Function (V-Chip) is used to block program viewing based on the ratings sent by the broadcasting station. The default setting is to allow all programs to be viewed. Viewing can be blocked by choosing the type of the program and the categories. It is also possible to block all program viewing for a time period. To use this function, the following must be done :

1. Set ratings and categories to be blocked.
2. Specify a password
3. Enable the lock

## V-Chip rating and categories

Rating guidelines are provided by broadcasting stations. Most television programs and television movies can be blocked by TV Rating and/or Individual Categories. Movies that have been shown at the theaters or direct-to-video movies use the Movie Rating System (MPAA) only.

## Ratings for Television programs including made-for-TV movies :

- TV-G (General audience)
- TV-PG (Parental guidance suggested)
- TV-14 (Parents strongly cautioned)
- TV-MA (Mature audience only)
- TV-Y (All children)
- TV-Y7 (Children 7 years older)

## SET PASSWORD & LOCK SYSTEM

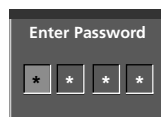
### Setting up Your Password

Set up blocking schemes to block specific channels, ratings, and external viewing sources.

A password is required to gain access to this menu.

- 1 Press the **MENU** button and then use the ▲ or ▼ button to select the **LOCK** menu. Then, press the ► button.

- Enter the password as requested.
- The TV is set up with the initial password "0-0-0-0".



## Set Password

Change the password by inputting a new password twice.

- 1 After inputting the password, use the ▲ or ▼ button to choose **Set password**.
- 2 Press the ► button and then choose any 4 digits for your new password.  
As soon as the 4 digits are entered, re-enter the same 4 digits on the **Confirm**.  
Then your changed password has been memorized.
- 3 Press the **EXIT** button to return to TV viewing or press the **BACK** button to return to the previous menu.

### ! NOTE

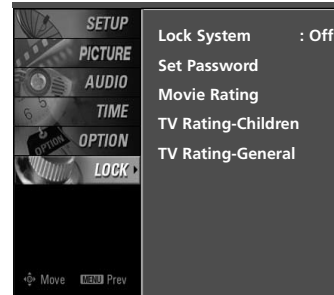
- ▶ If you ever forget your password, key in '7', '7', '7', '7' on the remote control.

## Lock System

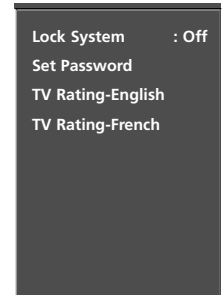
Enables or disables the blocking scheme you set up previously.

- 1 After inputting the password, use the ▲ or ▼ button to choose **Lock System**.
- 2 Press the ► button and then use the ▲ or ▼ button to select **On** or **Off**.
  - When you select **On**, the Lock System is enable.
- 3 Press the **EXIT** button to return to TV viewing or press the **BACK** button to return to the previous menu.

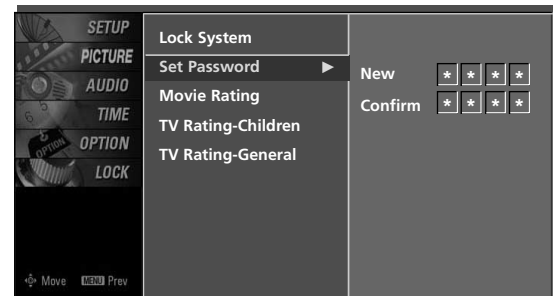
For USA



For Canada

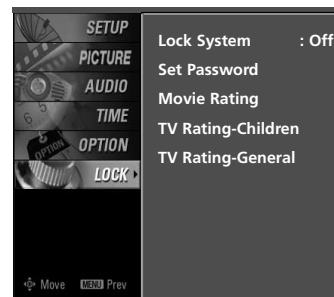


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For USA



For Canada



1



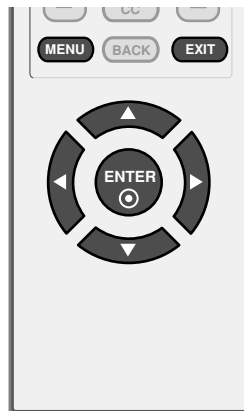
2



# MOVIE & TV RATING

## Movie Rating (MPAA) - for USA only

Blocks movies according to the movie ratings limits specified, so children cannot view certain movies. You can set the ratings limit by blocking out all the movies with the ratings above a specified level. Keep in mind that the movie ratings limit only applies to movies shown on TV, not TV programs, such as soap operas.



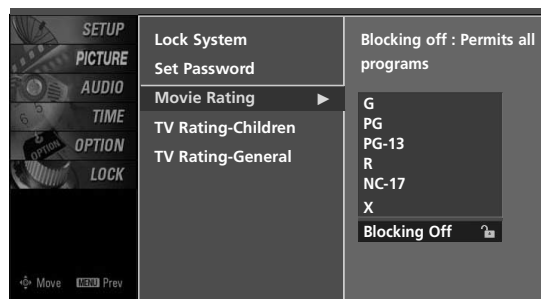
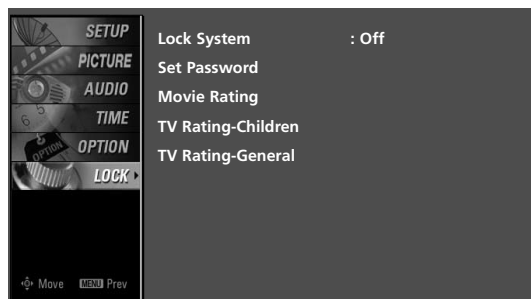
**1** After inputting the password, use the ▲ or ▼ button to choose **Movie Rating**.

**2** Press the ► button and then use the ▲ or ▼ button to select **G, PG, PG-13, R, NC-17** or **X**.

- G (General audience)
- PG (Parental guidance suggested)
- PG-13 (Parents strongly cautioned)
- R (Restricted)
- NC-17 (No one 17 and under admitted)
- X (Adult only)
- Blocking Off (Permits all programs)

► If you set PG-13 : G and PG movies will be available, PG-13, R, NC-17 and X will be blocked.

**3** Press the **EXIT** button to return to TV viewing or press the **BACK** button to return to the previous menu.



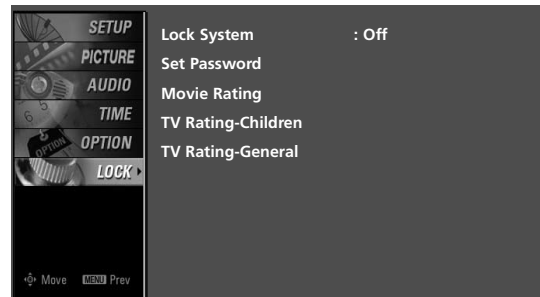
# PARENTAL CONTROL /RATINGS

## TV Rating Children - for USA only

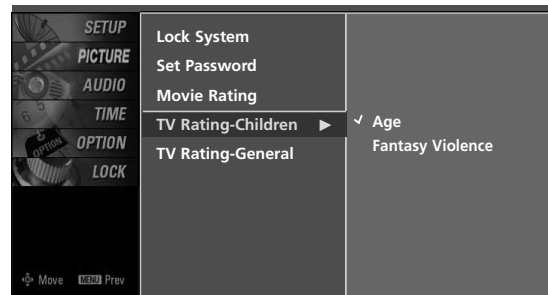
Prevents children from watching certain children's TV programs, according to the ratings limit set. The children rating does not apply to other TV programs. Unless you block certain TV programs intended for mature audiences in the TV Rating - sub menu, your children can view those programs.

- 1 After inputting the password, use the ▲ or ▼ button to choose **TV Rating-Children**.
- 2 Press the ► button and then use the ▲ or ▼ button to select **Age**, or **Fantasy Violence**.  
Press the ► button and then use the ▲ or ▼ button to select block options.
  - Age(applies to TV-Y, TV-Y7)
  - Fantasy Violence(applies to TV-Y7)

- 3 Press the **EXIT** button to return to TV viewing or press the **BACK** button to return to the previous menu.



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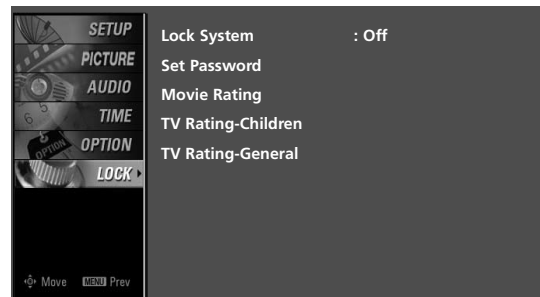
2

## TV Rating General - for USA only

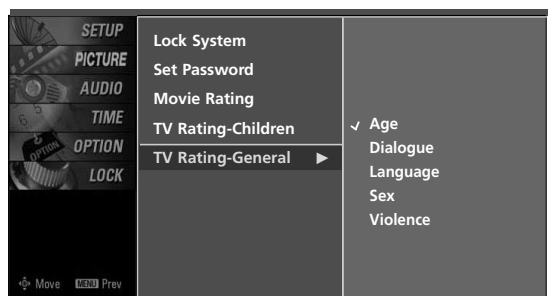
Based on the ratings, blocks certain TV programs that you and your family do not want to view.

- 1 After inputting the password, use the ▲ or ▼ button to choose **TV Rating-General**.
- 2 Press the ► button and then use the ▲ or ▼ button to select **Age**, **Dialogue**, **Language**, **Sex** or **Violence**.  
Press the ► button and then use the ▲ or ▼ button to select block options.
  - Age(applies to TV-G,TV-PG,TV-14,TV-MA)
  - Dialogue-sexual dialogue (applies to TV-PG,TV-14)
  - Language-adult language (applies to TV-PG,TV-14,TV-MA)
  - Sex-sexual situations (applies to TV-PG,TV-14,TV-MA)
  - Violence (applies to TV-PG,TV-14,TV-MA)

- 3 Press the **EXIT** button to return to TV viewing or press the **BACK** button to return to the previous menu.



1

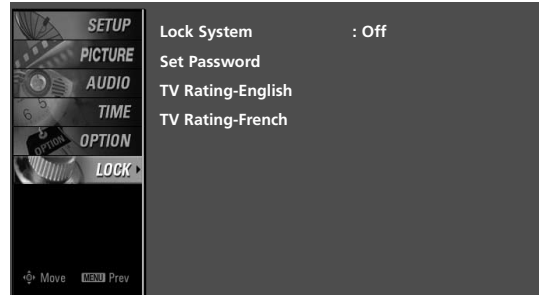


2

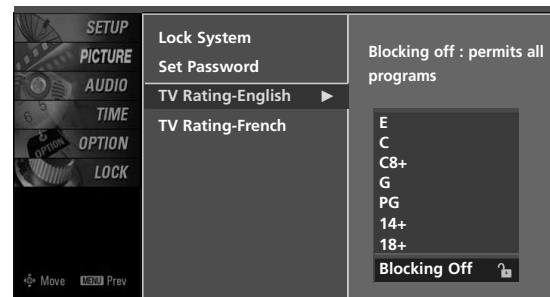
## TV Rating English - for CANADA only

Selecting canadian english language rating system.

- 1 After inputting the password, use the ▲ or ▼ button to choose **TV Rating-English**.
- 2 Press the ► button and then use the ▲ or ▼ button to select **E, C, C8+, G, PG, 14+, 18+, or Blocking Off**.
  - E (Exempt)
  - C (Children)
  - C8+ (Children eight years and older)
  - G (General programming, suitable for all audiences)
  - PG (Parental Guidance )
  - 14+ (Viewers 14 years and older)
  - 18+ (Adult programming)
  - Blocking Off (Permits all programs)
- 3 Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.



1

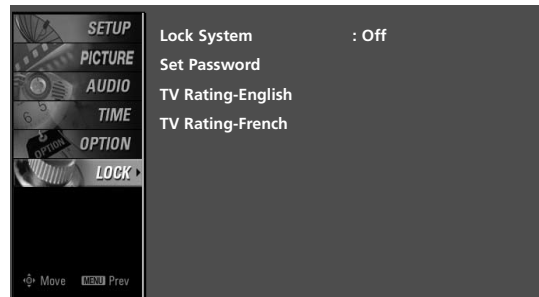


2

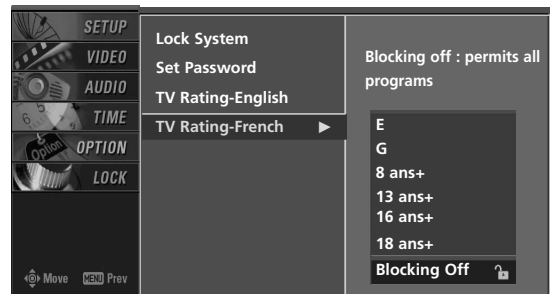
## TV Rating French - for CANADA only

Selecting canadian french language rating system.

- 1 After inputting the password, use the ▲ or ▼ button to choose **TV Rating-French**.
- 2 Press the ► button and then use the ▲ or ▼ button to select **E, G, 8ans+, 13ans+, 16ans+, 18ans+, or Blocking off**.
  - E(Exempt)
  - G(General)
  - 8ans+ (General-Not convenient for little children)
  - 13ans+ (Not convenient for children of 13 years and younger)
  - 16ans+ (Not convenient for children of 16 years and younger)
  - 18ans+ (This programs is only for adults)
  - Blocking off (Permits all programs)



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- 3 Press **EXIT** button to return to TV viewing or press **MENU** button to return to the previous menu.

# APPENDIX

## TROUBLESHOOTING

### The operation does not work normally.

The remote control doesn't work	<ul style="list-style-type: none"> <li>■ Check to see if there is any object between the product and the remote control causing obstruction. Ensure you are pointing the remote control directly at the TV.</li> <li>■ Ensure that the batteries are installed with correct polarity (+ to +, - to -).</li> <li>■ Ensure that the correct remote operating mode is set: TV, VCR etc.</li> <li>■ Install new batteries.</li> </ul>
Power is suddenly turned off	<ul style="list-style-type: none"> <li>■ Is the sleep timer set?</li> <li>■ Check the power control settings. Power interrupted.</li> <li>■ No broadcast on station tuned with Auto off activated.</li> </ul>

### The video function does not work.

No picture & No sound	<ul style="list-style-type: none"> <li>■ Check whether the product is turned on.</li> <li>■ Try another channel. The problem may be with the broadcast.</li> <li>■ Is the power cord inserted into wall power outlet?</li> <li>■ Check your antenna direction and/or location.</li> <li>■ Test the wall power outlet, plug another product's power cord into the outlet where the product's power cord was plugged in.</li> </ul>
Picture appears slowly after switching on	<ul style="list-style-type: none"> <li>■ This is normal, the image is muted during the product startup process. Please contact your service center, if the picture has not appeared after five minutes.</li> </ul>
No or poor color or poor picture	<ul style="list-style-type: none"> <li>■ Adjust Color in menu option.</li> <li>■ Keep a sufficient distance between the product and the VCR.</li> <li>■ Try another channel. The problem may be with the broadcast.</li> <li>■ Are the video cables installed properly?</li> <li>■ Activate any function to restore the brightness of the picture.</li> </ul>
Horizontal/vertical bars or picture shaking	<ul style="list-style-type: none"> <li>■ Check for local interference such as an electrical appliance or power tool.</li> </ul>
Poor reception on some channels	<ul style="list-style-type: none"> <li>■ Station or cable product experiencing problems, tune to another station.</li> <li>■ Station signal is weak, reorient antenna to receive weaker station.</li> <li>■ Check for sources of possible interference.</li> </ul>
Lines or streaks in pictures	<ul style="list-style-type: none"> <li>■ Check antenna (Change the direction of the antenna).</li> </ul>

### The audio function does not work.

Picture OK & No sound	<ul style="list-style-type: none"><li>■ Press the VOL or VOLUME button.</li><li>■ Sound muted? Press MUTE button.</li><li>■ Try another channel. The problem may be with the broadcast.</li><li>■ Are the audio cables installed properly?</li></ul>
No output from one of the speakers	<ul style="list-style-type: none"><li>■ Adjust Balance in menu option.</li></ul>
Unusual sound from inside the product	<ul style="list-style-type: none"><li>■ A change in ambient humidity or temperature may result in an unusual noise when the product is turned on or off and does not indicate a fault with the product.</li></ul>

### There is a problem in PC mode. (Only PC mode applied)

The signal is out of range	<ul style="list-style-type: none"><li>■ Adjust resolution, horizontal frequency, or vertical frequency.</li><li>■ Check the input source.</li></ul>
Vertical bar or stripe on background & Horizontal Noise & Incorrect position	<ul style="list-style-type: none"><li>■ Work the Auto configure or adjust clock, phase, or H/V position. (Option)</li></ul>
Screen color is unstable or single color	<ul style="list-style-type: none"><li>■ Check the signal cable.</li><li>■ Reinstall the PC video card.</li></ul>

# APPENDIX

## MAINTENANCE

Early malfunctions can be prevented. Careful and regular cleaning can extend the amount of time you can enjoy your new TV.

**Caution:** Be sure to turn the power off and unplug the power cord before you begin any cleaning.

### Cleaning the Screen

- 1 Here's a great way to keep the dust off your screen for a while. Wet a soft cloth in a mixture of lukewarm water and a little fabric softener or dish washing detergent. Wring the cloth until it's almost dry, and then use it to wipe the screen.
- 2 Make sure the excess water is off the screen, and then let it air-dry before you turn on your TV.

### Cleaning the Cabinet

- To remove dirt or dust, wipe the cabinet with a soft, dry, lint-free cloth.
- Please be sure not to use a wet cloth.

### Extended Absence

#### CAUTION

- ▶ If you expect to leave your TV dormant for a long time (such as a vacation), it's a good idea to unplug the power cord to protect against possible damage from lightning or power surges.

# PRODUCT SPECIFICATIONS

■ The specifications shown above may be changed without prior notice for quality improvement.

MODELS		20LS7D (20LS7D-UK)	23LS7D (23LS7D-UK)
Dimensions (Width x Height x Depth)	Including stand	19.7 x 15.8 x 6.9 inches 499.4 x 401.2 x 175.1 mm	22.9 x 18.1 x 7.8 inches 581.3 x 458.9 x 198.8 mm
	Excluding stand	19.7 x 14.0 x 2.9 inches 499.4 x 355.0 x 72.9 mm	22.9 x 16.3 x 3.3 inches 581.3 x 412.9 x 83.9 mm
Weight	including stand	14.1 pounds / 6.4 kg	17.9 pounds / 8.1 kg
	excluding stand	13.2 pounds / 6.0 kg	16.1 pounds / 7.3 kg
Power requirement		AC100-240V ~ 50/60Hz	
Television System		NTSC-M, ATSC, 64 & 256 QAM	
Program Coverage		VHF 2-13, UHF 14-69, CATV 1-135, DTV 2-69, CADTV 1-135	
External Antenna Impedance		75 ohm	
Environment condition	Operating Temperature	32 ~ 104°F (0 ~ 40°C)	
	Operating Humidity	Less than 80%	
	Storage Temperature	-4 ~ 140°F (-20 ~ 60°C)	
	Storage Humidity	Less than 85%	

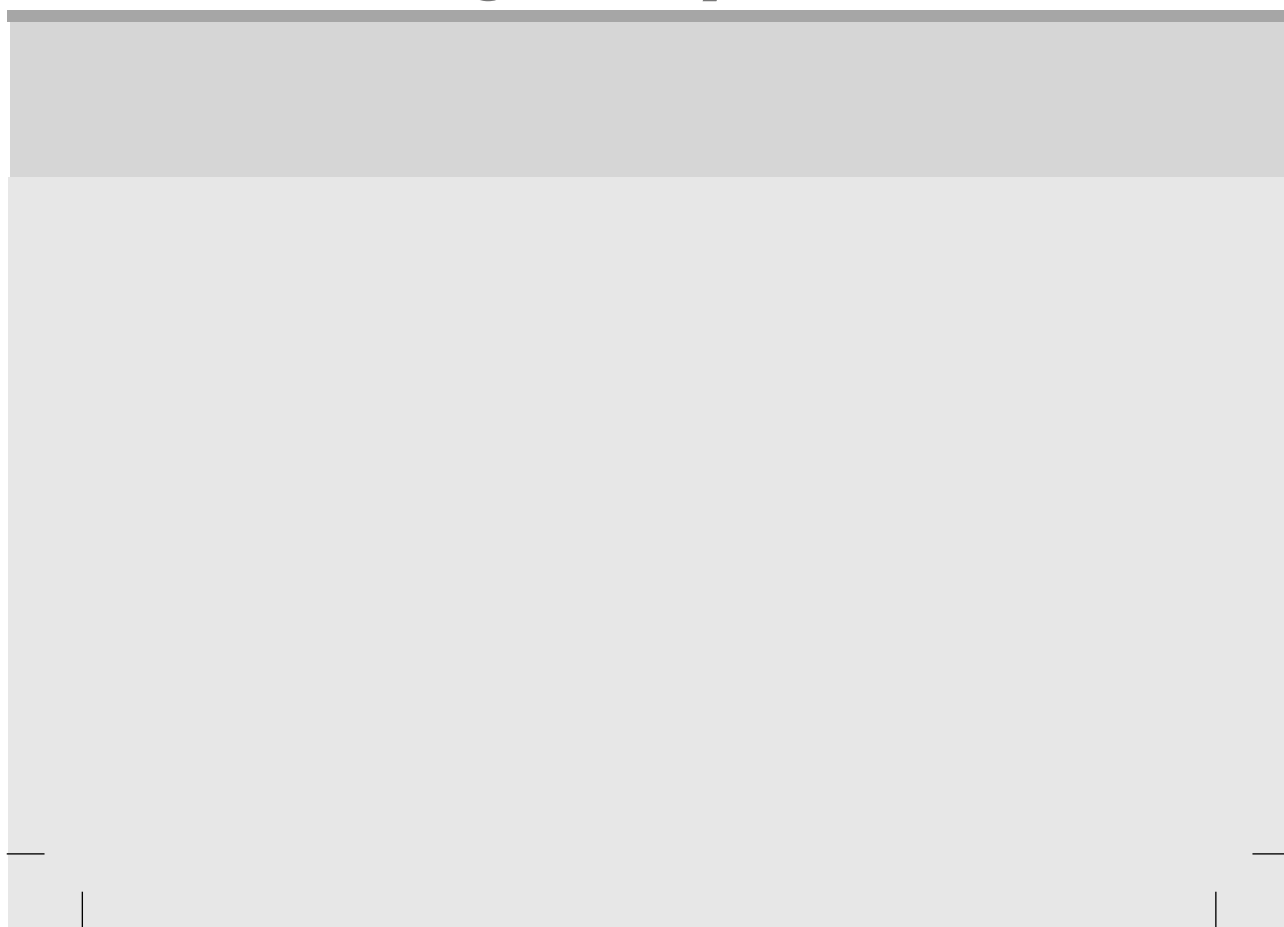
**LG Electronics Inc.**





# Regulatory information

## Regulatory information



## ■ ■ ■ Regulatory Information cont.

### :: FCC Compliance Statement

This equipment has been tested and found to comply within the limits of 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 on and off), the user is encouraged to try to correct the interference by using one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the 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.

Caution: Changes or modifications not expressly approved by the party responsible for compliance could void the user's (or your) authority to operate the equipment. Only peripherals (digital input/output devices, terminals, printers, etc.) certified to comply with the Class B limits may be attached to this monitor. Operation with non-certified peripherals is likely to result in interference to radio and TV reception. Only shielded signal cables may be used with this System.

#### NOTICE

The regulations are applied only to the products with the ID LABEL indicating specific requirements.

### :: Canadian DOC Notice

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations. Cet appareil numérique de la classe B

respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

#### NOTICE

The regulations are applied only to the products with the ID LABEL indicating specific requirements.

### :: CE Conformity Notice (for Europe)

Products with the "CE" Marking comply with the EMC Directive(89/336/EEC) and LOW VOLTAGE Directive (73/23/EEC) issued by the Commission of the European Community.

Compliance with these directives implies conformity to the following European Norms :

- EN 55022 ; Radio Frequency Interference
- EN 55024 ; Electromagnetic Immunity
- EN 61000-3-2 ; Power Line Harmonics
- EN 61000-3-3 ; Voltage Fluctuations
- EN 60950 ; Product Safety

#### NOTICE

The regulations are applied only to the products with the ID LABEL indicating specific requirements.

### :: Low Radiation Compliance (MPR II)

This monitor meets one of the strictest guidelines available today for low radiation emissions, offering the user extra shielding and an antistatic screen coating. These guidelines, set forth by a government agency in Sweden, limit the amount of emission allowed in the Extremely Low Frequency (ELF) and Very Low Frequency (VLF) electromagnetic range.

### :: TCO95 (TCO95 applied model only)



#### Congratulations!

You have just purchased a TCO'95 approved and labelled product! Your choice has provided you with a product developed for professional use. Your purchase has also contributed to reducing the burden on the environment and to the further development of environmentally-adapted electronic products.

## ■■■ Regulatory Information cont.

### Why do we have environmentally labelled computers?

In many countries, environmental labelling has become an established method for encouraging the adaptation of goods and services to the environment. The main problem as far as computers and other electronic equipment are concerned is that environmentally harmful substances are used both in the products and during their manufacture. Since it has not been possible so far for the majority of electronic equipment to be recycled in a satisfactory way, most of these potentially damaging substances sooner or later enter Nature.

There are also other characteristics of a computer, such as energy consumption levels, that are important from both the working and natural environment viewpoints. Since all types of conventional electricity generation have a negative effect on the environment (acidic- and climatic-influencing emissions, radioactive waste, etc.), it is vital to conserve energy. Electronic equipment in offices consumes an enormous amount of energy, since it is often routinely left running continuously.

### What does the environmental labelling involve?

This product meets the requirements for the TCO'95 scheme, which provides for international environmental labelling of personal computers. The labelling scheme was developed as a joint effort by the TCO (The Swedish Confederation of Professional Employees), Naturkyddsforeningen (The Swedish Society for Nature Conservation), and NUTEK (The National Board for Industrial and Technical Development in Sweden), and SEMKO AB (an international certification agency).

The requirements cover a wide range of issues: environment, ergonomics, usability, emission of electrical and magnetic fields, energy consumption and electrical and fire safety.

The environmental demands concern, among other things, restriction on the presence and use of heavy metals, brominated and chlorinated flame retardants, CFCs (freons), and chlorinated solvents. The product must be prepared for recycling, and the manufacturer is obliged to have an environmental plan, which must be adhered to in each country where the company implements its operational policy.

The energy requirements include a demand that the

computer and/or display, after a certain period of inactivity, shall reduce its power consumption to a lower level, in one or more stages. The length of time to reactivate the computer shall be reasonable for the user.

Labelled products must meet strict environmental demands, for example, in respect of the reduction of electric and magnetic fields, along with physical and visual ergonomics and good usability.

The following is a brief summary of the environmental requirements met by this product. The complete environmental criteria document may be ordered from:

TCO Development Unit  
Linnegatan 14, S-11494 Stockholm, Sweden  
FAX +46-8 782 92 07  
E-mail (Internet): [development@tco.se](mailto:development@tco.se)

Current information regarding TCO'95 approved and labelled products may also be obtained on the Internet using the address: <http://www.tco-info.com/>

TCO'95 is a co-operative project between:



Naturkydds  
foreningen



NUTEK

SEMKO

Närings- och teknikutvecklingsverket

### Environmental requirements

Brominated flame retardants are present in printed circuit boards, cabling, casings, and housings, and are added to delay the spread of fire. Up to 30% of the plastic in a computer casing can consist of flame-retardant substances. These are related to another group of environmental toxins, PCBs, and are suspected of giving rise to similar harm, including reproductive damage in fish-eating birds and mammals. Flame retardants have been found in human blood, and researchers fear that they can disturb fetus development.

Bio-accumulative<sup>1</sup> TCO'95 demands require that plastic components weighing more than 25 grams must not contain flame retardants with organically bound chlorine or bromine.

Lead can be found in picture tubes, display screens, solder, and capacitors. Lead damages the nervous system and in higher doses causes lead poisoning. The

## ■ ■ ■ Regulatory Information cont.

relevant bio-accumulative TCO'95 requirement permits the inclusion of lead, as no replacement has yet been developed.

Cadmium is present in rechargeable batteries and in the color-generating layers of certain computer displays. Cadmium damages the nervous system and is toxic in high doses. The relevant bio-accumulative TCO'95 requirement states that batteries may not contain more than 25 ppm (parts per million) of cadmium. The color-generating layers of display screens must not contain any cadmium.

Mercury is sometimes found in batteries, relays and switches. Mercury damages the nervous system and is toxic in high doses. The relevant bio-accumulative TCO'95 requirement states that batteries may not contain more than 25 ppm of mercury and that no mercury is present in any of the electrical or electronic components concerned with the display unit.

CFCs (freons) are sometimes used for washing printed circuit boards and in the manufacture of expanded foam for packaging. CFCs break down ozone and thereby damage the ozone layer in the atmosphere, causing increased reception on Earth of ultra-violet light with consequent increased risks of skin cancer (malignant melanoma). The relevant TCO'95 requirement: Neither CFCs nor HCFCs may be used during the manufacture of the product or its packaging.

<sup>1</sup> Bio-accumulative means that the substance accumulates within living organisms.

### Shipping Package

The packaging material can be recycled, or you can save it to return the monitor to a service center for repair or disposal.

### CFC Compounds in Distribution Packaging

Cushioning material used for shipping finished monitors are not manufactured with nor do they contain any CFC compounds.

### Design for Disassembly/Recycling

These monitors have been designed for easy end-of-life disassembly and recycling. Fasteners are generally of the same type for efficient disassembly. Components made of different materials can be easily separated and plastics have been identified using international symbols to aid in recycling.

### Monitor Disposal

#### WARNING

If you need to dispose of a monitor, ask a qualified service representative for the proper procedure. Improper disposal could result in personal injury from implosion.

:: **TCO'99** (TCO'99 applied model only)



### Congratulations!

You have just purchased a TCO'99 approved and labelled product! Your choice has provided you with a product developed for professional use. Your purchase has also contributed to reducing the burden on the environment and also to the further development of environmentally adapted electronics products.

### Why do we have environmentally labelled computers?

In many countries, environmental labelling has become an established method for encouraging the adaptation of goods and services to the environment. With the growing manufacture and usage of electronic equipment throughout the world, there is a recognized concern for the materials and substances used by electronic products with regards to their eventual recycling and disposal. By proper selection of these materials and substances, the impact on the environment can be minimized.

There are also other characteristics of a computer, such as energy consumption levels, that are important from the viewpoints of both the work (internal) and natural (external) environments. Electronic equipment in offices is often left running continuously, resulting in unnecessary consumption of large amounts of energy and additional power generation. From the standpoint of carbon dioxide emissions alone, it is vital to save energy.

### What does labelling involve?

The product meets the requirements for the TCO'99 scheme which provides for international and environmental labelling of personal computers and/or displays.

The labelling scheme was developed as a joint effort by the TCO (The Swedish Confederation of Professional Employees), Svenska Naturskyddsforeningen (The Swedish Society for Nature Conservation) and Statens Energimyndighet (The Swedish National Energy Administration).

## ■■■ Regulatory Information cont.

Approval requirements cover a wide range of issues: ecology, ergonomics, emission of electrical and magnetical fields, energy consumption and electrical safety.

Ecological criteria impose restrictions on the presence and use of heavy metals, brominated and chlorinated flame retardants, and other substances. The product must be prepared for recycling and the manufacturing site(s) shall be certified according to ISO14001 or EMAS registered.

Energy requirements include a demand that the system unit and/or display, after a certain period of inactivity, shall reduce its power consumption to a lower level in one or more stages. The length of time to reactivate the system unit shall be reasonable for the user.

Labelled products must meet strict environmental demands, for example, in respect of the reduction of electrical and magnetical fields as well as work load and visual ergonomics.

Below you will find a brief summary of the ecological requirements met by this product. The complete ecological criteria document can be found at TCO Development's website <http://www.tcodevelopment.com> or may be ordered from:

**TCO Development**  
SE-114 94 STOCKHOLM, Sweden  
Fax: +46 8 782 92 07  
Email : [development@tco.se](mailto:development@tco.se)  
Information regarding TCO'99 approved and labelled products may also be obtained at <http://www.tcodevelopment.com>

### Ecological requirements

#### Flame retardants

Flame retardants may be present in printed wiring board laminates, cables, and housings. Their purpose is to prevent, or at least to delay the spread of fire. Up to 30% by weight of the plastic in a computer casing can consist of flame retardant substances. Many flame retardants contain bromine or chlorine, and these flame retardants are chemically related to PCBs (polychlorinated biphenyls). Both the flame retardants containing bromine or chlorine and the PCBs are suspected of giving rise to health effects, including reproductive damage in fish-eating birds and mammals, due to the bio-accumulative\* processes when not disposed of in accordance with strict standards for disposal.

TCO'99 requires that plastic components weighing more than 25 grams shall not contain flame retardants with organically bound bromine or chlorine. Flame retardants are allowed in the printed wiring board laminates due to the lack of commercially available alternatives.

#### Cadmium\*\*

Cadmium is present in rechargeable batteries and in the colour-generating layers of certain computer displays. TCO'99 requires that batteries, the colour-generating layers of display screens, and the electrical or electronics components shall not contain any cadmium.

#### Mercury\*\*

Mercury is sometimes found in batteries, relays and switches. TCO'99 requires that batteries shall not contain any mercury. It also demands that mercury is not present in any of the electrical or electronics components associated with the labelled unit. There is however one exception. Mercury is, for the time being, permitted in the back light system of flat panel monitors as there today is no commercially available alternative. TCO aims on removing this exception when a mercury free alternative is available.

#### Lead\*\*

Lead can be found in picture tubes, display screens, solders and capacitors. TCO'99 permits the use of lead due to the lack of commercially available alternatives, but in future requirements TCO Development aims at restricting the use of lead.

\* Bio-accumulative is defined as substances which accumulate in living organisms.

\*\*Lead, Cadmium and Mercury are heavy metals which are bio-accumulative.

## ■■■ Regulatory Information cont.

:: **TCO'03** (TCO'03 applied model only)



### **Congratulations!**

The display you have just purchased carries the TCO'03 Displays label.

This means that your display is designed, manufactured and tested according to some of the strictest quality and environmental requirements in the world. This makes for a high performance product, designed with the user in focus that also minimizes the impact on our natural environment. Some of the features of the TCO'03 Display requirements:

### **Ergonomics**

- Good visual ergonomics and image quality in order to improve the working environment for the user and to reduce sight and strain problems. Important parameters are luminance, contrast, resolution, reflectance, colour rendition and image stability.

### **Energy**

- Energy-saving mode after a certain time – beneficial both for the user and the environment
- Electrical safety

### **Emissions**

- Electromagnetic fields
- Noise emissions

### **Ecology**

- The product must be prepared for recycling and the manufacturer must have a certified environmental management system such as EMAS or ISO 14 001
- Restrictions on
  - chlorinated and brominated flame retardants and polymers
  - heavy metals such as cadmium, mercury and lead.

The requirements included in this label have been developed by TCO Development in co-operation with scientists, experts, users as well as manufacturers all over the world. Since the end of the 1980s TCO has been involved in influencing the development of IT equipment in a more user-friendly direction. Our labelling system started

with displays in 1992 and is now requested by users and IT-manufacturers all over the world.

For more information, please visit  
[www.tcodevelopment.com](http://www.tcodevelopment.com)

## English

### **Information for Environmental Preservation**

LGE. announced the 'LG Declaration for a Cleaner Environment' in 1994, and this ideal has served as a guiding managerial principle ever since. The Declaration is a foundation that has allowed us to undertake environmentally friendly activities in careful consideration of economic, environmental, and social aspects.

We promote activities for environmental preservation, and we specifically develop our products to embrace the concept of environment-friendly.

We minimize the hazardous materials contained in our products. For example, there is no cadmium to be found in our monitors.

### **Information for recycling**

This monitor may contain parts which could be hazardous to the environment. It is important that this monitor be recycled after use.

LGE. handles all waste monitors through an environmentally acceptable recycling method. There are several take-back and recycling systems currently in operation worldwide. Many parts will be reused and recycled, while harmful substances and heavy metals are treated by an environmentally friendly method.

If you want to find out more information about our recycling program, please contact your local LG vendor or a corporate representative of LG.

We set our vision and policies on a cleaner world by selecting the issue of the global environment as a task for corporate improvement. Please visit our website for more information about our 'green' policies.

[http://www.lge.com/experience/social\\_commitment/environment.jsp](http://www.lge.com/experience/social_commitment/environment.jsp)

## ■ ■ ■ Regulatory Information cont.

### ■ ■ ■ Deutsch

#### Informationen zur Erhaltung der Umwelt

Im Jahr 1994 verkündete LGE die 'LG Declaration for a Cleaner Environment' (LG Erklärung für eine sauberere Umwelt). Seitdem dient dieses Ideal als führendes Prinzip des Unternehmens. Diese Erklärung war die Basis für die Durchführung von

umweltfreundlichen Aktivitäten, wobei wirtschaftliche, umweltbezogene und soziale Aspekte in die Überlegungen mit einbezogen wurden.

Wir fördern Aktivitäten zum Schutz der Umwelt und die Entwicklung unserer Produkte ist darauf ausgerichtet, unserem Konzept bezüglich Umweltfreundlichkeit gerecht zu werden.

Wir sind darauf bedacht, den Anteil der in unseren Produkten enthaltenen schädlichen Materialien zu minimieren. So ist in unseren Monitoren beispielsweise kein Kadmium zu finden.

#### Informationen zum Thema Recycling

Dieser Monitor enthält Teile, die umweltschädlich sein können. Es ist unbedingt erforderlich, dass der Monitor recycelt wird, nachdem er außer Dienst gestellt wurde.

Bei LGE werden alle ausrangierten Monitore in einem unter umweltbezogenen Aspekten geeigneten Verfahren recycelt. Augenblicklich sind weltweit mehrere Rücknahme- und Recyclingsysteme im Einsatz. Viele Teile werden wieder verwendet und recycelt. Schädliche Substanzen und Schwermetalle werden durch umweltverträgliche Verfahren behandelt.

Falls Sie mehr über unser Recyclingprogramm erfahren möchten, wenden Sie sich bitte an Ihren lokalen LG-Händler oder einen Unternehmensvertreter von LG.

Wir richten unsere Firmenpolitik auf eine sauberere Umwelt hin aus, indem wir umweltspezifische Aspekte als wichtigen Punkt in die Weiterentwicklung unseres Unternehmens einfließen lassen. Zusätzliche Informationen über unsere 'grüne' Firmenpolitik erhalten Sie auf unserer Website.

[http://www.lge.com/experience/social\\_commitment/environment.jsp](http://www.lge.com/experience/social_commitment/environment.jsp)

### ■ ■ ■ Français

#### Information sur la protection de l'environnement

LGE a publié sa 'Déclaration en faveur d'un

environnement plus propre' en 1994 et celle-ci est restée, depuis lors, un principe directeur de notre entreprise. Cette déclaration a servi de base à notre réflexion et nous a permis de prendre en compte à la fois les aspects économiques et sociaux de nos activités, tout en respectant l'environnement.

Nous encourageons les activités en faveur de la préservation de l'environnement et c'est dans cet esprit que nous développons nos produits : nous réduisons au minimum les matières dangereuses qui entrent dans leur composition et l'on ne trouve pas de cadmium, par exemple, dans nos moniteurs.

#### Information sur le recyclage

Ce moniteur peut contenir des composants qui présentent un risque pour l'environnement. Il est donc important que celui-ci soit recyclé après usage.

LGE traite les moniteurs en fin de cycle conformément à une méthode de recyclage respectueuse de l'environnement. Nous reprenons nos produits et les recyclons dans plusieurs sites répartis dans le monde entier. De nombreux composants sont réutilisés et recyclés, et les matières dangereuses, ainsi que les métaux lourds, sont traités selon un procédé écologique.

Si vous souhaitez plus de renseignements sur notre programme de recyclage, veuillez contacter votre revendeur LG ou un l'un de nos représentants.

Nous voulons agir pour un monde plus propre et croyons au rôle de notre entreprise dans l'amélioration de l'environnement. Pour plus de renseignements sur notre politique "verte", rendez visite à notre site :

[http://www.lge.com/experience/social\\_commitment/environment.jsp](http://www.lge.com/experience/social_commitment/environment.jsp)

### ■ ■ ■ Italiano

#### Informazioni per la tutela dell'ambiente

La LGE ha annunciato nel 1994 la cosiddetta 'LG Declaration for a Cleaner Environment' (Dichiarazione di LG a favore di un ambiente più pulito), un ideale che da allora funge da principio ispiratore della gestione aziendale. La dichiarazione rappresenta il fondamento che consente di intraprendere attività a favore dell'ambiente tenendo conto degli aspetti economici, ambientali e sociali.

## ■■■ Regulatory Information cont.

Noi della LG, promuoviamo attività a favore della tutela dell'ambiente sviluppando appositamente i nostri prodotti per cogliere il concetto del rispetto dell'ambiente riducendo i materiali dannosi presenti nei nostri prodotti. Ad esempio nei nostri monitor non è presente il cadmio.

### Informazioni per il riciclaggio

Il monitor può presentare componenti che potrebbero risultare eventualmente dannosi per l'ambiente. È importante che il monitor sia riciclato al termine del suo utilizzo.

La LGE. gestisce tutti i monitor di rifiuto con un metodo di riciclaggio soddisfacente dal punto di vista ambientale. In tutto il mondo sono attualmente in funzione numerosi sistemi di riciclaggio e recupero. I diversi componenti sono riutilizzati e riciclati, mentre le sostanze dannose e i metalli pesanti vengono trattati con un metodo rispettoso dell'ambiente.

Se si desiderano maggiori informazioni in merito al programma di riciclaggio, è consigliabile rivolgersi al proprio rivenditore LG o ad un rappresentante aziendale della LG.

Noi della LG impostiamo la nostra visione e le nostre politiche a favore di un mondo più pulito ponendo la questione dell'ambiente dal punto di vista globale come una mansione rivolta al miglioramento della nostra azienda. Vi invitiamo a visitare il nostro sito internet per ulteriori informazioni sulla nostra politica "verde".

[http://www.lge.com/experience/social\\_commitment/environment.jsp](http://www.lge.com/experience/social_commitment/environment.jsp)

## ■■■ Español

### Información para la conservación medioambiental

LGE. presentó la 'Declaración para un entorno más limpio de LG' en 1994 y este ideal ha servido para guiar nuestros principios empresariales desde entonces. La Declaración es la base que nos ha permitido llevar a cabo tareas que respetan el medio ambiente siempre teniendo en cuenta aspectos sociales, económicos y medioambientales.

Promocionamos actividades orientadas a la conservación del medio ambiente y desarrollamos nuestros productos específicamente para que se ajusten a la filosofía que protege el entorno.

Reducimos al máximo el uso de materiales de riesgo en nuestros productos. Un ejemplo de ello es la ausencia total de cadmio en nuestros monitores.

### Información para el reciclaje

Este monitor puede contener piezas que entrañen riesgos medioambientales. Es importante reciclar este monitor después de su utilización.

LGE. trata todos los monitores usados siguiendo un método de reciclaje que no daña al entorno. Contamos con diversos sistemas de recuperación y reciclaje que funcionan a nivel mundial en la actualidad. Es posible reciclar y reutilizar muchas de las piezas, mientras que las sustancias dañinas y los metales pesados se tratan siguiendo un método que no perjudique al medio ambiente. Si desea obtener más información acerca del programa de reciclaje, póngase en contacto con su proveedor local de LG o con un representante empresarial de nuestra marca.

Basamos nuestra visión y nuestras políticas en un mundo más limpio y para ellos optamos por un entorno global como tarea principal de nuestra evolución como empresa. Visite nuestra página Web para obtener más información sobre nuestras políticas ecológicas.

[http://www.lge.com/experience/social\\_commitment/environment.jsp](http://www.lge.com/experience/social_commitment/environment.jsp)

## ■■■ Português

### Informações relacionadas à preservação ambiental

A LGE. anunciou a 'LG Declaration for a Cleaner Environment' (Declaração da LG para um ambiente mais limpo) em 1994 e esse ideal tem servido desde então como um princípio administrativo de orientação. A Declaração é a base que nos tem permitido realizar atividades favoráveis ao ambiente com consideração atenta aos aspectos econômicos, ambientais e sociais.

Promovemos atividades de preservação ambiental e desenvolvemos nossos produtos para englobar especificamente o conceito de favorável ao ambiente.

Reduzimos os materiais perigosos contidos em nossos produtos. Por exemplo, não há cádmio em nossos monitores.



## Regulatory Information cont.

### Informações relacionadas à reciclagem

Este monitor pode conter peças que podem representar riscos ao ambiente. É importante que ele seja reciclado após o uso.

A LGE cuida de todos os monitores descartados através de um método de reciclagem agradável ao ambiente. Há vários sistemas de devolução e reciclagem atualmente em operação no mundo. Muitas peças serão reutilizadas e recicladas e as substâncias nocivas e os metais pesados passarão por tratamento através de um método favorável ao ambiente.

Para obter mais informações sobre nosso programa de reciclagem, entre em contato com seu fornecedor LG local ou com um representante corporativo da LG.

Definimos nossa visão e nossas políticas relacionadas a um mundo mais limpo selecionando a questão do ambiente global como uma tarefa de aprimoramento corporativo. Visite nosso site para obter mais informações sobre nossas políticas de meio ambiente.

[http://www.lge.com/experience/social\\_commitment/environment.jsp](http://www.lge.com/experience/social_commitment/environment.jsp)

### Nederlands

#### Informatie met betrekking tot het behoud van het milieu

LGE publiceerde in 1994 de 'LG Declaration for a Cleaner Environment' (de LG-verklaring met betrekking tot een schoner milieu). Deze verklaring en het ideaal van een schoner milieu fungeren sindsdien als een bestuurlijke leidraad voor onze onderneming. Op basis van deze verklaring ontplooiën wij milieuvriendelijke activiteiten, waarbij er zowel met sociale en economische aspecten, als met milieuaspecten zorgvuldig rekening wordt gehouden.

Wij ondersteunen activiteiten die zijn gericht op het behoud van het milieu en wij houden bij het ontwikkelen onze producten specifiek rekening met de milieuvriendelijkheid van onze producten.

Wij minimaliseren het gebruik van schadelijke stoffen in onze producten. Er wordt bijvoorbeeld geen cadmium verwerkt in onze monitoren.

#### Informatie met betrekking tot recycling

Deze monitor bevat materialen die schadelijk zouden kunnen zijn voor het milieu. Het is belangrijk dat deze

monitor aan het einde van zijn levensduur wordt gerecycled.

LGE verwerkt alle afvalmonitoren via een milieuvriendelijke recyclingmethode. Hiervoor worden er momenteel wereldwijd verscheidene inname- en recyclingsystemen gehanteerd. Een groot aantal onderdelen wordt opnieuw gebruikt en gerecycled, waarbij schadelijke stoffen en zware metalen volgens een milieuvriendelijke methode worden verwerkt.

Voor meer informatie over ons recyclingprogramma kunt u contact opnemen met uw plaatselijke LG-vertegenwoordiger of een LG-vestiging.

Onze visie en ons beleid met betrekking tot een schonere wereld vloeien voort uit het feit dat wij het milieu hebben aangemerkt als een onderwerp dat speciale aandacht verdient binnen onze onderneming. Bezoek onze website voor meer informatie over ons 'groene' beleid.

[http://www.lge.com/experience/social\\_commitment/environment.jsp](http://www.lge.com/experience/social_commitment/environment.jsp)

### Russian

#### Информация по охране окружающей среды

В 1994 году корпорация LGE опубликовала 'Декларацию LG по охране окружающей среды', которая с тех пор служит основным принципом управления. На основе этой декларации мы смогли предпринять действия, обеспечивающие безопасность окружающей среды, уделяя при этом должное внимание экономическим, экологическим и социальным аспектам.

Мы стимулируем деятельность по охране окружающей среды, уделяя особое внимание разработке нашей продукции в соответствии с концепцией экологической безопасности.

Мы сводим к минимуму содержание опасных веществ в нашей продукции. Например, в наших мониторах вы не найдете кадмия.

#### Информация по утилизации отходов

Этот монитор может содержать компоненты, которые могут нанести ущерб окружающей среде.

Необходимо утилизировать монитор после использования.

■■■ Regulatory Information cont.

Корпорация LGE перерабатывает все бракованные мониторы с помощью экологически приемлемого метода утилизации отходов. По всему миру действуют системы утилизации отходов и возврата использованной продукции. Многие компоненты будут вторично использованы и утилизированы, в то время как вредные вещества и тяжелые металлы будут обработаны с помощью экологически приемлемого метода.

За более подробной информацией по нашей программе утилизации отходов обращайтесь к местному поставщику или представителю корпорации LG.

Мы ориентируемся на обеспечение экологической безопасности, ставя себе целью глобальную защиту окружающей среды. Дополнительную информацию о нашей политике по охране окружающей среды вы можете найти на нашем сайте:

[http://www.lge.com/experience/social\\_commitment/environment.jsp](http://www.lge.com/experience/social_commitment/environment.jsp)

한국어

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<http://www.lge.co.kr/about/digitalg/environment/environment.jsp>

:: **EPA (U.S.A only)** (EPA applied model only)

ENERGYSTAR is a set of power-saving guidelines issued by the U.S. Environmental Protection Agency(EPA).



As an ENERGY STAR Partner LGE U. S. A.,Inc. has determined that this product meets the ENERGY STAR guidelines for energy efficiency.

:: **NOM MARK (Mexico only)**

