

TOSHIBA

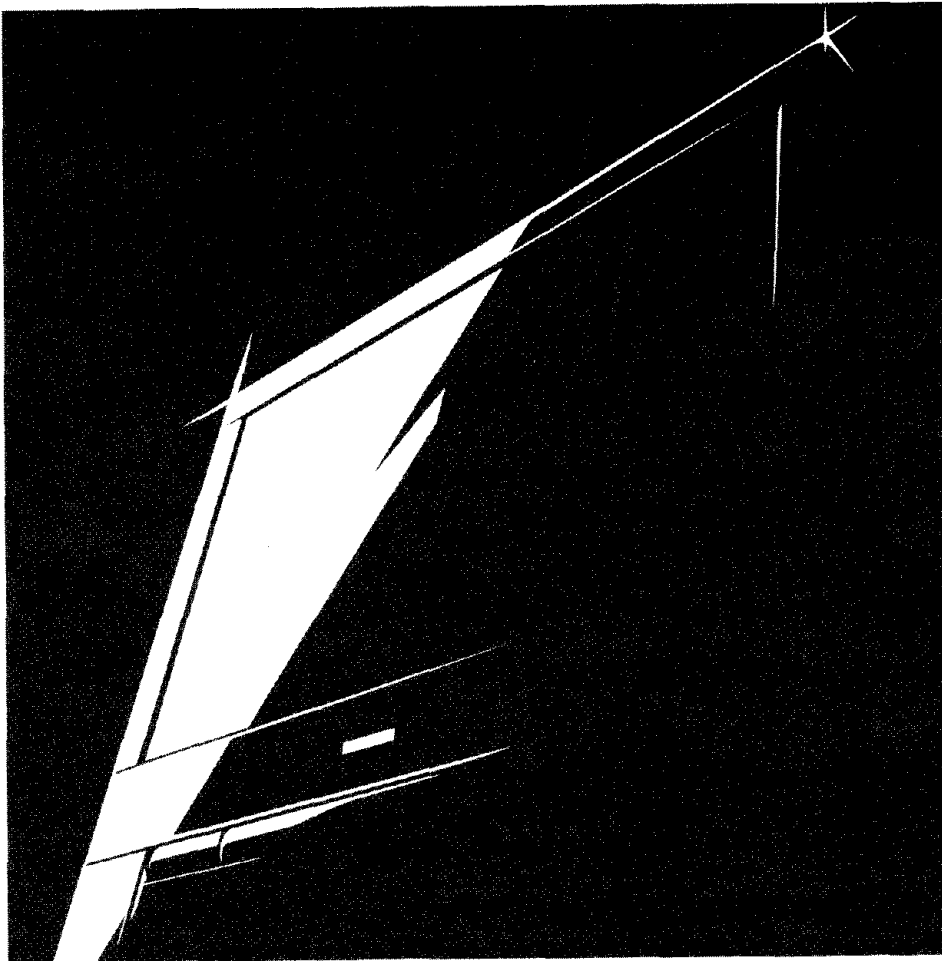
Projection Television

OWNER'S MANUAL

16:9
WIDE

DOLBY SURROUND
PRO-LOGIC

TW56D90



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Dear Customer

Welcome to the high quality picture world created by the TOSHIBA Projection Color Television.

This manual will help you to use its many exciting and useful features.

Before operating the TV, please read all the safety and operating instructions in this manual thoroughly and retain it for future reference.

Customer's Record

You will find the model number and serial number on the back of the TV.

Record these numbers in the spaces provided below.

Refer to them whenever you call upon your TOSHIBA dealer regarding this product.

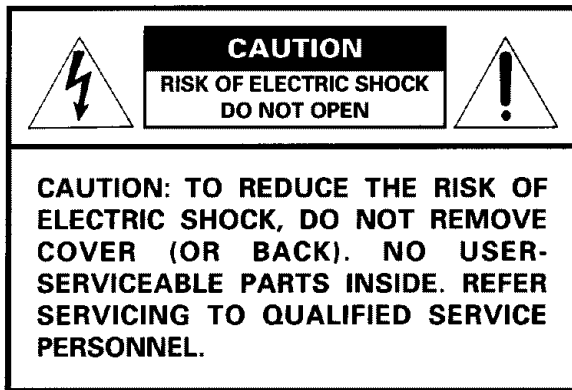
Model Number _____

Serial Number _____

Safety Precautions

WARNING:

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



The lightning symbol in the triangle tells you that the voltage inside this product may be strong enough to cause an electric shock. DO NOT TRY TO SERVICE THIS PRODUCT YOURSELF.



The exclamation point in the triangle tells you that important operating and maintenance instructions follow this symbol.

CAUTION:

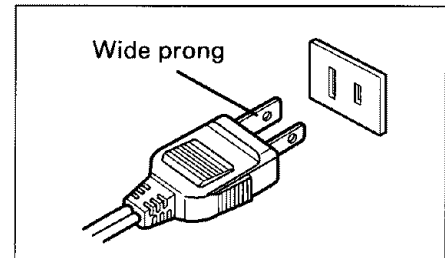
As a safety feature, the AC plug has one prong wider than the other.

It will fit only one way into a standard electrical outlet.

If the plug will not fit into the outlet, try turning it around.

If the plug will not fit either way, the outlet is probably old and non-standard. You will need to have a new outlet installed by an electrician.

DO NOT CHANGE THE SAFETY FEATURE OF THE PLUG.



CAUTION:

TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS POLARIZED PLUG WITH AN EXTENSION CORD RECEPTACLE OR OTHER OUTLET UNLESS THE PRONGS CAN BE FULLY INSERTED INTO THE OUTLET TO PREVENT ANY EXPOSURE OF THE PRONGS OF THE POLARIZED PLUG.

NOTE TO CATV SYSTEM INSTALLER:

This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC that 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 cable entry as practical.

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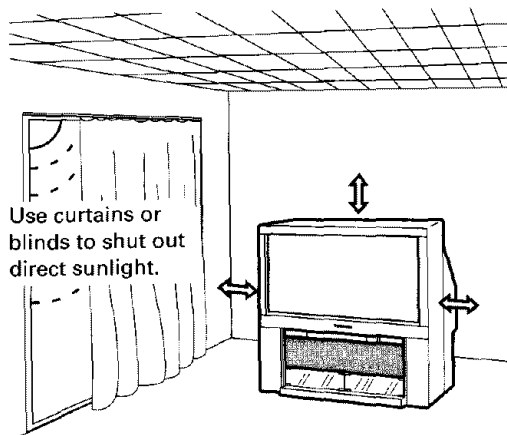
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Installation

To install the TV

Downward spot lights or fluorescent lights in an overhead "Honeycomb" prevent direct illumination of the screen.



If you install the TV close to a wall, keep a enough space (\leftrightarrow : 10 inches or more) around the TV.

Where to install

Place the TV on the floor or on a sturdy platform. The mounting surface should be flat and steady. When placing the TV on a soft floor, make sure that the floor is not damaged by the weight of the TV.

Air Circulation

Place the TV far enough from the walls to allow proper ventilation. This will prevent the TV from overheating and avoid possible damage to the TV. Avoid dusty places too.

Heat Damage

Damage may occur if you leave the TV in direct sunlight or near a heater. Avoid places subject to extremely high temperatures or humidity, or to temperatures of 41°F (5°C) or lower.

Power Supply

Plug into an electrical outlet with standard household power (120 volt AC, 60 Hz). Do not change the plug's safety prong. See page 2.

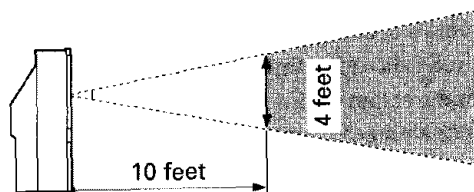
Moisture Condensation

If the room temperature suddenly rises (or if the TV is moved from a cool place to a hot place), dew condensation may occur on the lenses, resulting in picture distortion or color fading. In such a case, simply wait a while (with the power on) and the dew will disappear.

Best Viewing

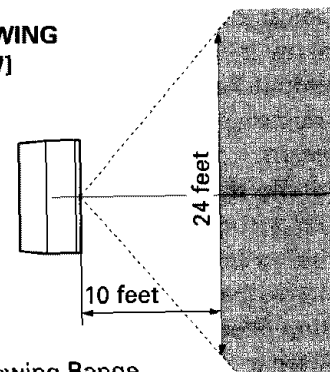
Position the TV approximately 10-25 feet away. Sitting too far to the left or right of the screen will cause the picture to appear dull as will direct sunlight and/or room lights. Turn the TV off to check for reflections on the screen. Then remove any source of reflections when viewing.

VERTICAL VIEWING ANGLE [SIDE VIEW]



▒ Viewing Range

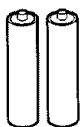
HORIZONTAL VIEWING ANGLE [TOP VIEW]



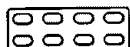
▒ Viewing Range

Supplied accessories

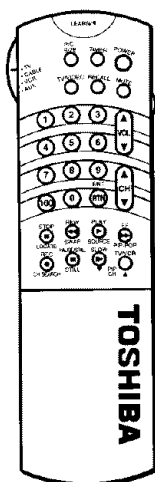
• When you unpack the package, be sure that it contains all the accessories (shown below).



Two "AA" size alkaline batteries



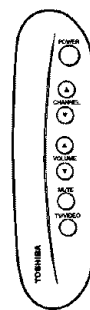
Template



Remote Control

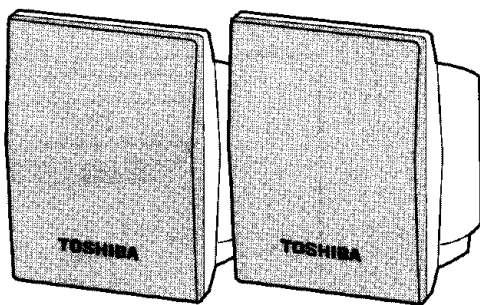


Two "AAA" size batteries

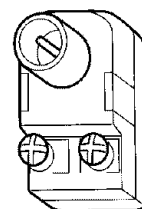


EZ Remote Control*

* The instructions for the EZ Remote Control are on the separate sheet enclosed in this accessory package.



Surround Speakers with cables

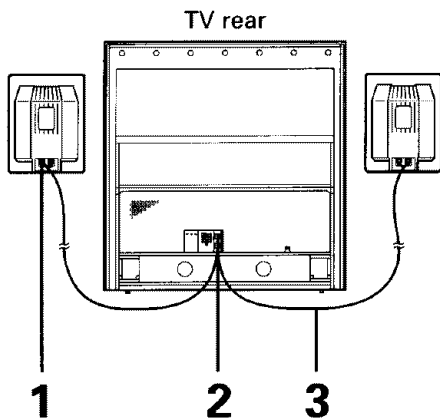


Antenna Adapter

Installation (continued)

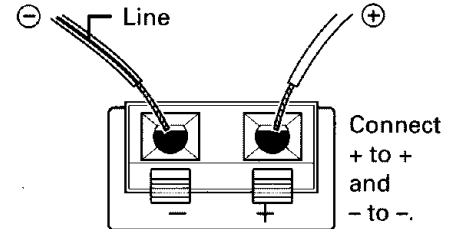
- The Surround Speakers are packed in a separate box inside this container. Unpack the Speakers carefully and set them up as shown below.

To set up the Surround Speakers



Connection

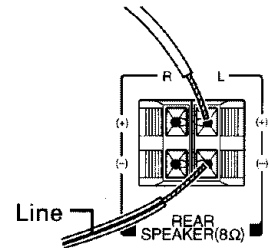
- 1 Connect one end of the speaker cable to the terminals on the Surround Speaker.



- 2 Connect the other end of the speaker cable to the "REAR SPEAKER" terminals* on the TV rear panel. While depressing the button, insert the cable. Then, release the button.

*Note:

The REAR SPEAKER terminals can be used only for the supplied speakers. Do not connect any other speakers to these terminals.



- 3 Connect another speaker following steps 1 and 2 above.

Mounting position

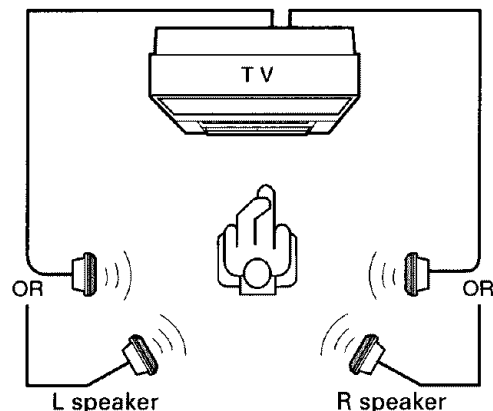
To enjoy the sound of the DSP Surround or Dolby Pro Logic Surround features, you must mount the speakers to the left and right, on a shelf or on a wall behind your normal viewing position. See page 39 for details.

Note:

You can get the best surround performance when you install the speakers slightly above your viewing position while watching TV.

CAUTIONS

- If the speakers are mounted on a wall, hang them from the opening provided on their back panels.
- Care should be taken when choosing speaker mounting hardware to insure compatibility with the material of the wall. Do not use mounting hardware with thin and/or soft wall materials, as the speaker may fall and cause personal injury or be damaged.

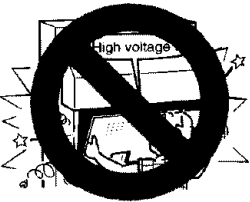


Care and Maintenance



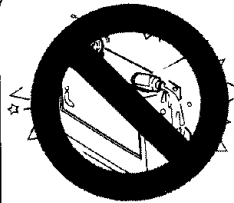
Do not stand or climb on the TV.

- The TV is dangerous if it is broken or if it has fallen down.
- Be careful when children are present.



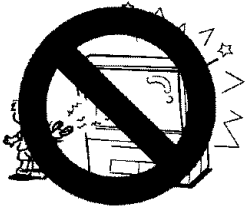
Do not remove the back cover.

- Let qualified technicians check and adjust your TV.

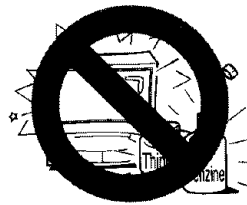


Do not place containers with liquids such as cosmetics on the TV.

If any foreign material or water has gotten into the TV, unplug the AC cord and contact your dealer.

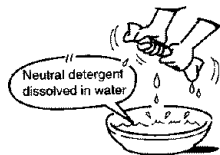
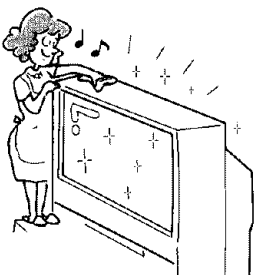


Keep magnets, toys with magnets, electric clocks, speakers, etc. away from the TV.



Do not use solvent such as benzine, thinner, etc. to clean the TV.

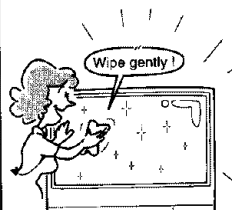
- These solvents may corrode the cabinet or damage its finish.
- If rubber or vinyl products touch the TV for a long time, a stain may result.



When the cabinet becomes dirty, clean it with a soft and dry cloth.

When the cabinet is very dirty,

- ① Wring a wet cloth and wipe the cabinet clean.
- ② Finish with a dry cloth.



When taking care of the screen:

- ① Turn off the TV.
- ② Clean the screen with a soft, dry cloth.

Antenna/Cable TV Connection

- You can use either an indoor or outdoor antenna to receive VHF and/or UHF channels.
- Channels 2-13 are VHF channels, and channels 14-69 are UHF channels.
- We recommend using an outdoor antenna for better picture quality.
- You can receive Cable TV by contacting your local cable company.
- Cable TV delivers both VHF and UHF channels and other channels not available to your antenna.

Types of antenna cables

Shown below are two basic types of antenna cables. Signals from a home antenna may be conveyed by either type. Cable TV signals will always be conveyed by a 75 ohm coaxial cable.

- ① A 75 ohm coaxial cable is generally a round cable with F-type connectors that can easily be attached to a terminal without tools.

Optional F-type connector

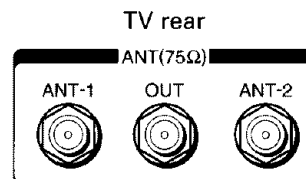


- ② A 300 ohm cable is a flat "twin-lead" cable that can be attached to a terminal through an antenna adapter supplied as an accessory.



Antenna connection panel

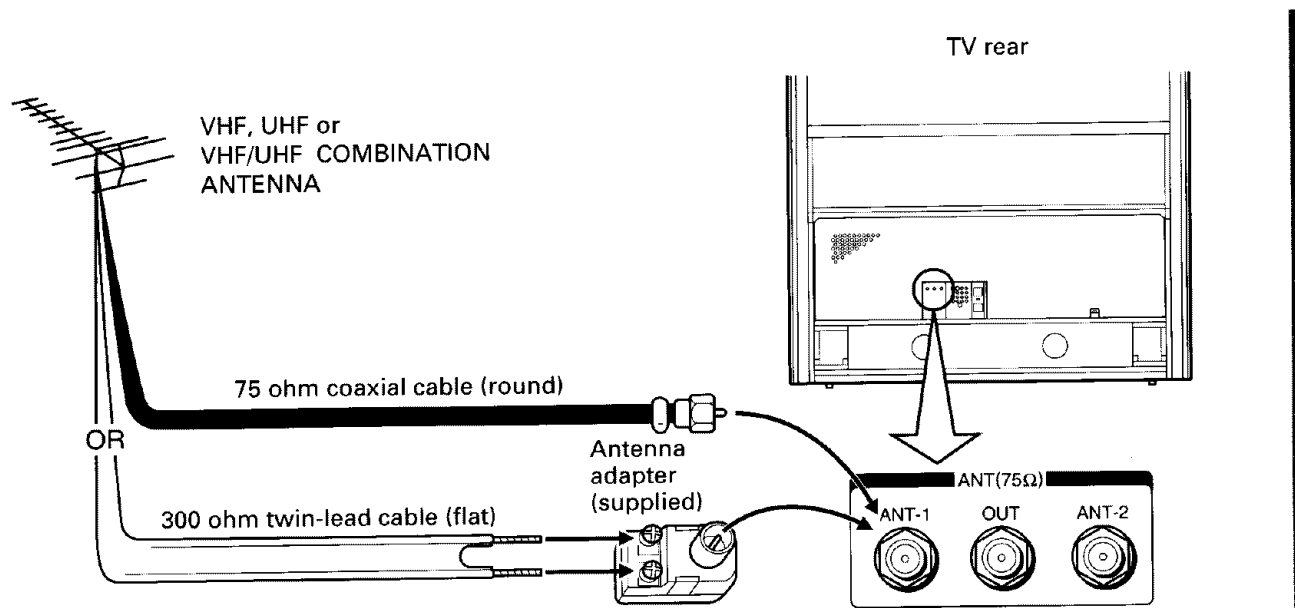
There are two separate 75 ohm F-type connector terminals and a converter output terminal as shown below.



The ANT-1 and ANT-2 terminals are for connecting a VHF/UHF antenna or a cable TV system. The signal, which is input on the ANT-1, also is output from the OUT terminal whenever the RF switcher in the TV is in the ANT-2 position. You can switch between the ANT-1 and ANT-2 positions by pressing the ANT 1/2 button on the Remote Control or the ANT/VIDEO button on the TV. See page 22.

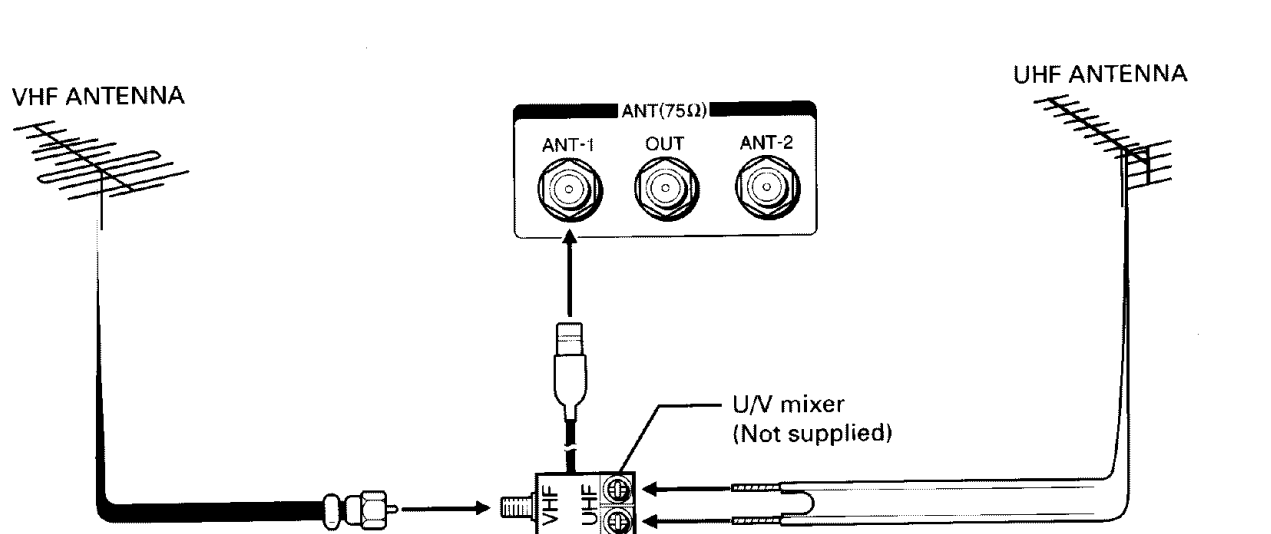
Home antenna connection

Single lead-in cable



Note: You can connect another signal source, like a cable TV system or video game, to the ANT-2 terminal. Refer to CAUTION on page 48.

Both VHF and UHF lead-in cables



Note: You can connect another signal source, like a cable TV system or video game, to the ANT-2 terminal. Refer to CAUTION on page 48.

Antenna/Cable TV Connection (continued)

Cable TV connection

Generally, the incoming cable for a cable TV system can be connected directly to the TV antenna terminal just like a home antenna connection. **(A-1)**

But some cable companies offer "premium pay channels". Since the signals of these premium pay channels are scrambled, a cable TV converter/decoder is generally provided to the subscribers by the cable TV company. This decoder box is necessary for normal viewing of the scrambled channels. We recommend that you consult your cable TV company for more specific instructions on installing cable TV. **(A-2)**

(A-1) Cable without a decoder box (Unscrambled channels)



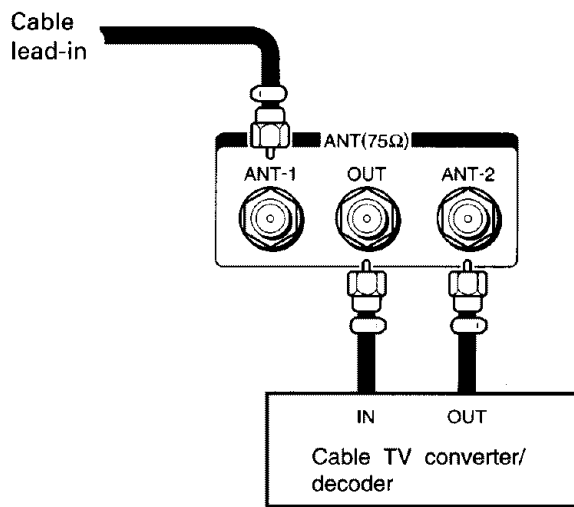
Note: You can connect another signal source, like a cable TV system or video game, to the ANT-2 terminal. Refer to CAUTION on page 48.

(A-2) Cable with a decoder box (Unscrambled and Scrambled channels)

- The unscrambled channels will come through the ANT-1 terminal whenever the ANT1/2 button on the Remote Control, or the ANT/VIDEO button on the TV, is in "ANT 1" mode.
- The scrambled channels from the decoder box will come through the ANT-2 terminal whenever the ANT1/2 button, or the ANT/VIDEO button, is in "ANT 2" mode.
- Set the TV and the VCR on channel 3 or 4 to match the output channel of the converter.

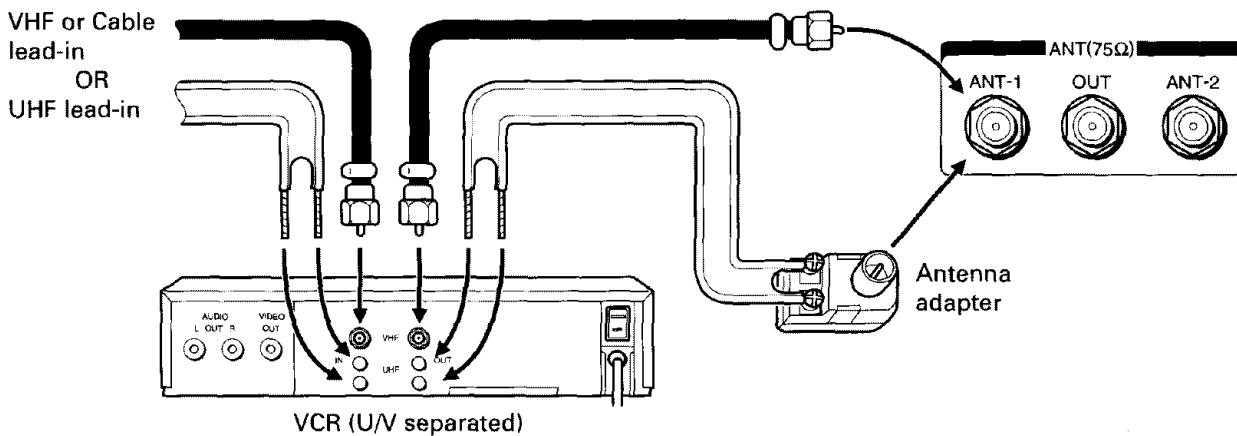
Note:

The decoding device may or may not be a part of the cable converter.



Antenna/Cable TV and VCR connections

Antenna/Cable TV connection via VCR (Simplified method)

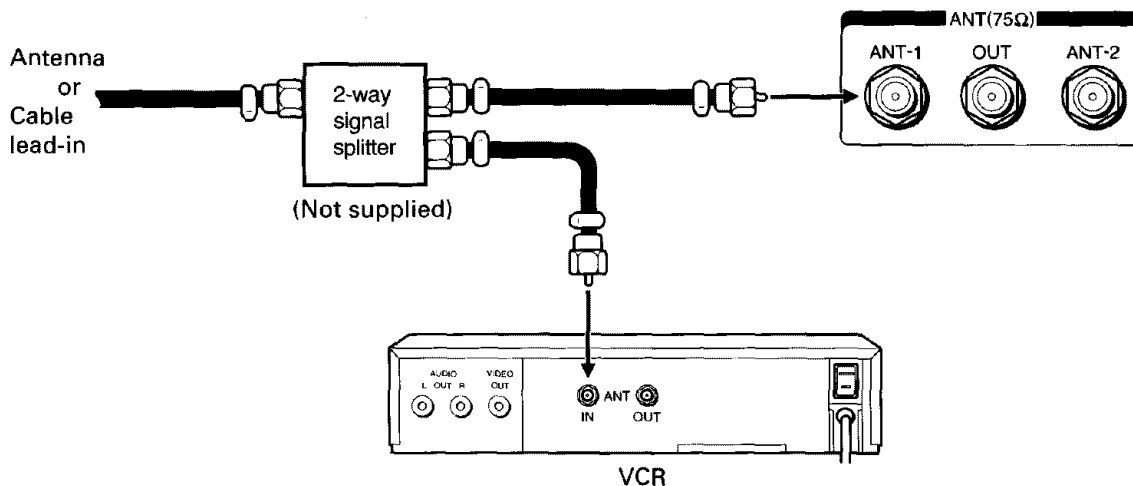


Notes:

- Playback of tapes may often cause the TV/VCR switching of the VCR to disconnect the antenna from the TV. If you cannot select a certain channel, try pressing the TV/VCR button on the Remote Control.
- If you connect both VHF and UHF lead-in cables, use a U/V mixer (not supplied). (See page 9.)
- VIDEO/AUDIO connections from the VCR to the TV are required for stereo tape playback from stereo VCR's.

Using a 2-way signal splitter

You can view either TV programs or VCR tapes regardless of the position of the VCR's TV/VCR switch.

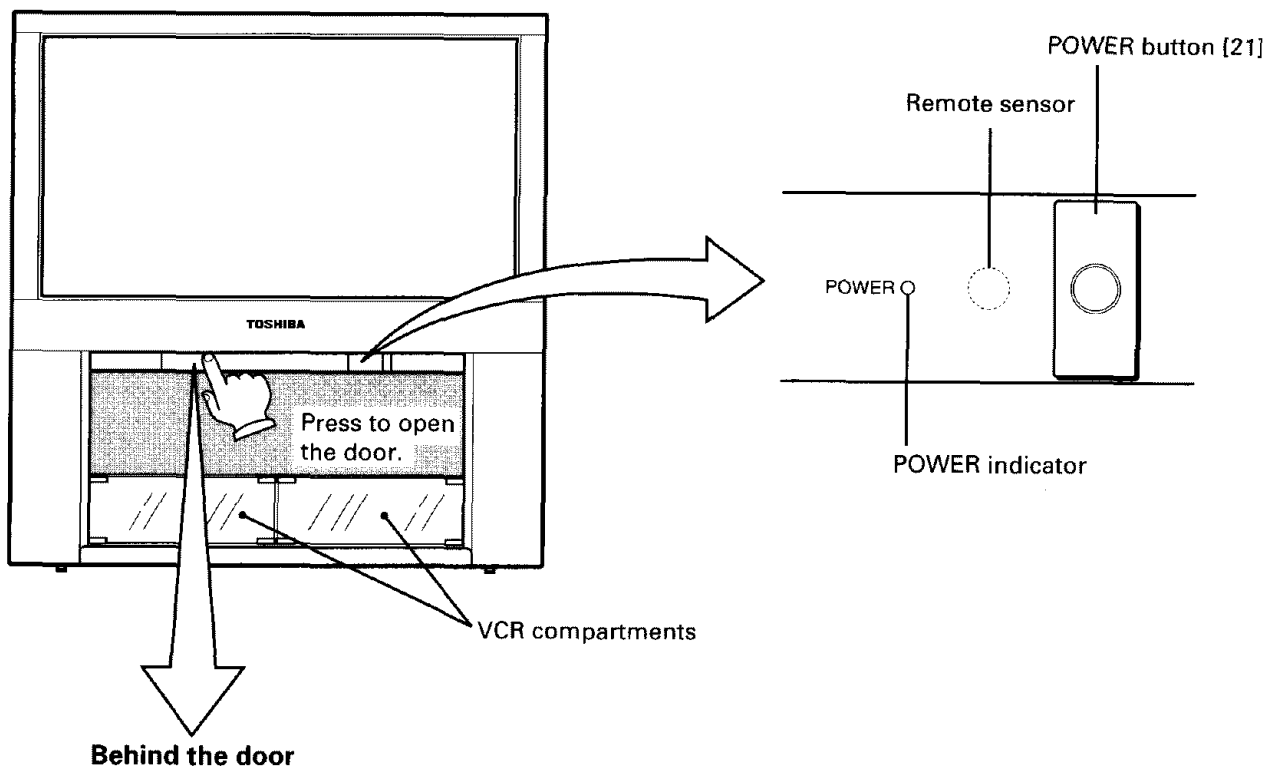


Note: VIDEO/AUDIO connections from the VCR to the TV are required for playback. (See page 62.)

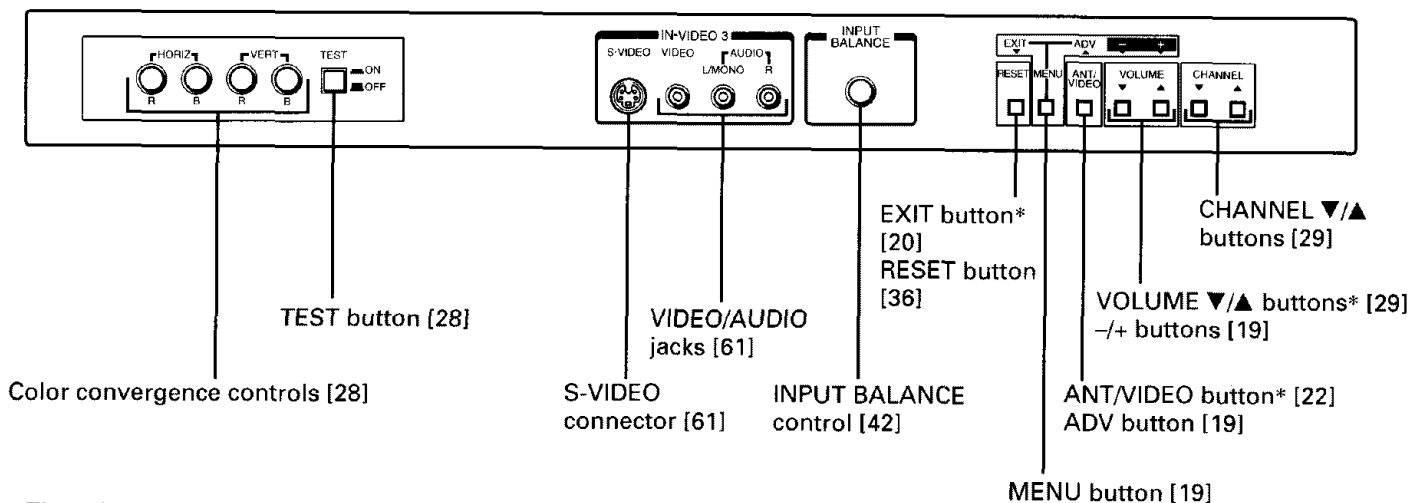
Operation and Controls

- The following describes the functions of each part of the TV and the Remote Control. For the specific use of each control, consult the corresponding page numbers in brackets.

Front view



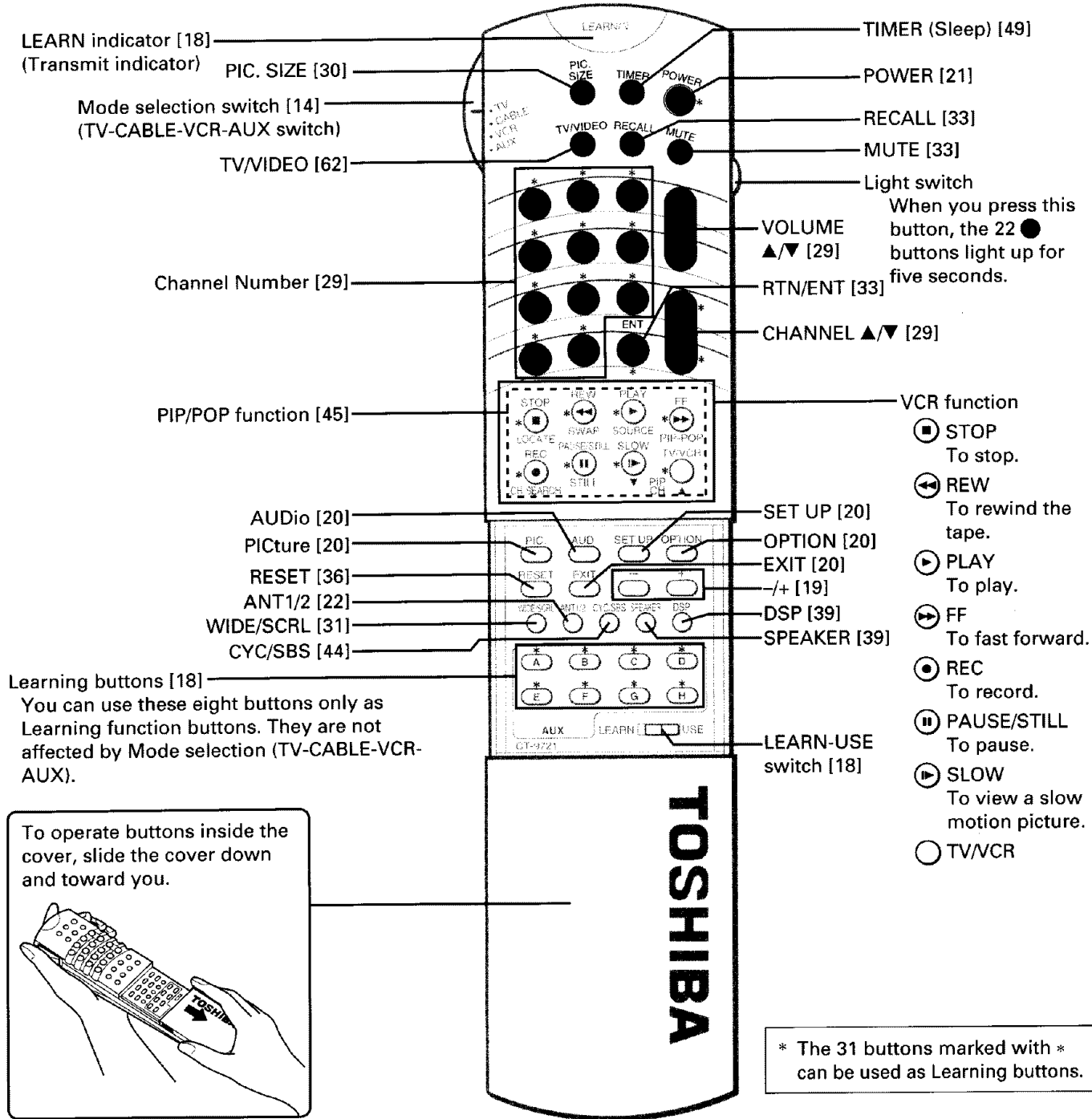
Behind the door



* These buttons have dual functions.

Remote Control

- See the table on the next page, "To operate desired equipment", describing activation of specific buttons or Mode Selection. (Refer to the owner's manual supplied with the VCR for details about the VCR function buttons.)

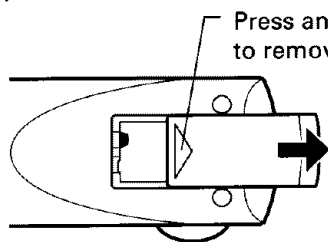


Using the Remote Control

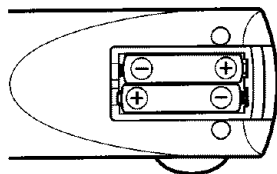
- With this Remote Control, you can operate your TV and most models of remote-controlled VCR's and cable TV converters even if they are different brands. See next page.

Battery installation

- 1 Place the Remote Control face down and remove the battery cover.



- 2 Insert two "AA" size alkaline batteries, matching the + and - signs on each battery with the + and - signs of the battery compartment.



- 3 Slide the battery cover shut until the lock snaps.

CAUTIONS

- Do not throw your batteries into a fire. Dispose of your batteries in a designated disposal area.
- Do not combine used batteries with new ones.
- Do not mix battery types.

Tips for best operation

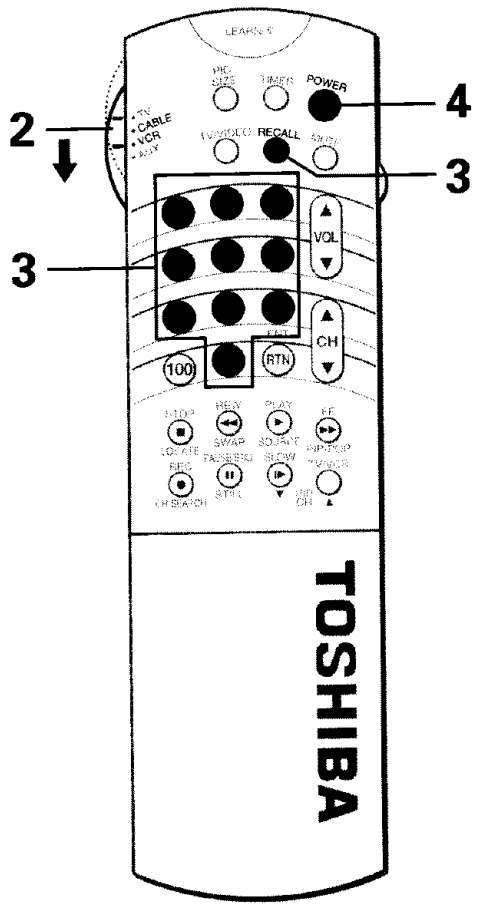
- For optimum performance, aim the Remote Control directly at the TV from a distance of no more than 28 feet (8.5m). Be sure there is no obstruction between the Remote Control and the TV.
- If your Remote Control does not always adjust the TV as you wish, you probably need to replace the batteries. Use alkaline batteries for longer use.
- If the Remote Control will not be used for a long period of time or when the batteries are worn out, remove the batteries to prevent leakage.
- Do not drop, dampen or disassemble the Remote Control.

To operate desired equipment

When you want to operate	Set the Mode selection switch to	You can use
TV	TV	all the buttons
Cable TV Converter	CABLE	<ul style="list-style-type: none"> • POWER button • CHANNEL ▲/▼ buttons • Channel Number buttons • RTN/ENT button
VCR	VCR	<ul style="list-style-type: none"> • POWER button • CHANNEL ▲/▼ buttons • Channel Number buttons • VCR function buttons • RTN/ENT button
Other Video/audio Equipment (REMOTE Video Disc Players, stereo systems or additional VCR's, etc.)	AUX	as Learning buttons; <ul style="list-style-type: none"> • POWER button • CHANNEL ▲/▼ buttons • Channel Number buttons • VCR function buttons • RTN/ENT button

The function buttons not listed in the table above operate the TV as usual.

To program the Remote Control



- This Remote Control is preprogrammed to operate Toshiba VCR's.
- To use VCR's other than Toshiba models (or Cable converters), perform the following procedures before operating.
- When you connect several pieces of video/audio equipment to the TV, follow the instructions on page 18.

1 Refer to the "VCR CODE TABLE" (or "CABLE TV CONVERTER CODE TABLE") on pages 16 and 17 to find the code number that corresponds to the brand name of your VCR (or your converter).

If more than one number is listed, try each one separately until you find the one that works.

2 Set the Mode selection switch to VCR (or CABLE).

3 Hold down **RECALL** while pressing the **Number buttons** for the three digit code number for your brand of VCR (or converter). The transmit indicator lights up for 1 second when the programming is completed.

When an operation error has occurred, the indicator blinks. Press **RECALL** again to reset.

4 Point the Remote Control at the VCR (or at the converter) and press **POWER** to test the code number.
 —If the **right number was entered**, the VCR should turn on.
 —If the **VCR does not respond to the Remote Control**, repeat steps 1 to 4 with another code number.

Follow the instructions on page 18 if the VCR does not respond, even though you have programmed the Remote Control following steps 1 to 4 above.

For future reference, write the code you set.

VCR CODE: _____

CABLE CODE: _____

Note: You have to reprogram the Remote Control when you change its batteries.

Using the Remote Control

(continued)

- The code numbers listed below are the newest ones at the time of printing. New code numbers may or may not have been added since printing.

VCR code table

BRAND NAME	CODE NUMBER	BRAND NAME	CODE NUMBER	BRAND NAME	CODE NUMBER
Aiko	297	Goodmans	019, 039, 056, 081, 091, 297	Osaki	019, 056, 091
Aiwa	019	Gradiente	019	Otto Versand	100
Akai	060, 068, 080, 125, 261	Graetz	060, 123	Pallidium	091
Alba	039, 228, 297	Granada	065, 100, 123	Panasonic	054, 096, 244
Amstrad	019	Grundig	100	Penney	054, 056, 057, 059, 061, 259
Anitech	091	Harman/Kardon	057	Pentax	061, 084, 124
ASA	056, 100	Hem	091	Perdio	019
Audiovox	056	Hinari	091, 227	Philco	054
Baird	123	Hitachi	019, 060, 061, 084, 124	Philips	054, 081, 100, 129
Bell & Howell	123	Imperial	019	Phonola	100
Broksonic	140, 203, 230	Interfunk	100	Pilot	056
Bush	091, 228, 297	ITT	060, 065, 123, 125	Pioneer	086, 100
Canon	054	JCL	054	Portland	039
Capehart	039	Jensen	060	Proline	019
Carver	100	JVC	027, 060, 086	Pulsar	058
CCE	091, 297	Kendo	125	Pye	100
CGE	019	Kenwood	057, 060, 065, 086	Quartz	065
Cimline	091	Lloyd	019	Quasar	054, 115
Condor	039	Loewe	056	Quelle	100
Craig	066, 259	Loewe Opta	100	Radiola	100
Crown	297	Logik	091, 259	RCA	054, 061, 084, 096, 124, 168, 221
Curtis Mathes	054	Luxor	062, 065, 125	RCA Unified	079
Daewoo	039, 064, 065, 297	LXI	056	Realistic	019, 054, 056, 065, 066, 067, 081, 085, 123, 259
Dansai	091	Magnavox	019, 054, 100, 129, 168	Rex	060
Daytron	039	Manesth	064, 091	Ricoh	053
De Graaf	061	Marantz	054, 057, 081, 100	Roadstar	056, 091, 259
Decca	019, 100	Marta	056	Runco	058
Dual	060	Matsui	227, 228	Saba	060
Dumont	019, 100, 123, 124	MEI	054	Saisho	227, 228
Dynatech	019	Memorex	019, 054, 056, 058, 065, 066, 067, 123	Salora	062, 065, 125
Electronic	019	MGA	062, 080	Samsung	064, 259
Emerson	019, 021, 056, 080, 140, 203, 227, 228, 230, 231, 313	Minolta	061, 124	Sansui	060, 086
ESC	297	Mitsubishi	062, 080, 086, 100, 192, 233, 261	Sanyo	065, 066, 123, 259
Ferguson	060	MTC	019, 259	SBR	100
Fidelity	019	Multitech	019, 091	Schaub Lorenz	019, 060
Finlandia	100, 123, 129	Murphy	019	Schneider	019, 091, 100, 129
Finlux	019, 061, 100, 123, 124	NEC	057, 059, 060, 069, 086	Scott	064, 140, 203, 229, 231
First Line	062, 091	Neckermann	100	Sears	054, 056, 061, 065, 066, 073, 085, 123, 124
Fisher	065, 066, 073, 085, 123	Nikko	056	SEI	100
Frontech	039	Noblex	259	Sentra	039
Funai	019	Nokia	060, 065, 123, 125, 259	Sharp	067, 081
GE	054, 079, 084	Nordmende	060	Shintom	091
GEC	100	Optonica	067, 081	Siemens	056, 123
General	071	Orion	140, 227, 228	Sinudyne	100
Go Video	251, 298				
Goldstar	056, 057				

Cable TV converter code table

BRAND NAME	CODE NUMBER	BRAND NAME	CODE NUMBER	BRAND NAME	CODE NUMBER
Sony	051, 052, 053, 054	ABC	026, 030, 032, 036	Unika	172
STS	061	Archer	058, 172	United Artists	026
Sunstar	019	Century	172	United Cable	022
Sylvania	054, 062, 100, 129	Citizen	172	Universal	058, 096, 172, 210
Symphonic	019	Colour Voice	044, 050	Viewstar	046, 079
Tashiko	019	Comtronics	059, 079	Zenith	019
Tatung	019, 060, 100	Eastern	021		
Teac	019, 060	Garrard	172		
Technics	054	Gemini	034, 089		
Teknika	019, 054, 056, 071	General			
Telefunken	060, 206	Instrument	030		
Tenosal	091	Hamlin	028, 039, 278, 292		
Tensai	019	Hitachi	030		
Thomson	060	Jasco	172		
Thorn	060	Jerrold	022, 030, 031, 033, 034, 043, 045		
Toshiba	060, 062, 064, 085, 229, 231, 385	Macom	052		
Totevision	056, 259	Magnavox	046		
Triumph	227	Memorex	019		
Unitech	259	Movie Time	175		
Universum	019, 056, 068, 100, 125	NSC	089, 175		
Vector Rsearch	057, 059	Oak	026, 038		
Victor	027, 060, 086	Panasonic	040		
Video Concepts	059, 080	Paragon	019		
Videosonic	259	Philips	044, 046, 047, 048, 049, 050, 079		
Wards	019, 054, 061, 066, 067, 081, 091, 168, 231, 259	Pioneer	163		
Yamaha	057, 060	Pulsar	019		
Yoko	259	PVP Stereo			
Zenith	052, 053, 058	Visual Matrix	022		
		RCA	040		
		Regal	039, 278, 292		
		Regency	021		
		Rembrandt	089		
		Runco	019		
		Samsung	059, 163		
		Scientific Atlanta	025, 027, 036, 296		
		Signal	034, 059		
		Signature	030		
		SL Marx	059		
		Sprucer	040		
		Standard			
		Components	174		
		Starcom	022, 034		
		Stargate	034, 059		
		STS	175		
		Tocom	031, 032, 078		
		Toshiba	019		

Using the Remote Control

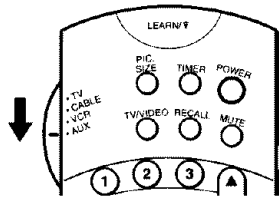
(continued)

- This Remote Control is capable of learning operating codes from most infrared remote control transmitters. You can control the functions of your TV and a variety of video/audio equipment with the supplied Remote Control only.
- The 31 buttons can be used as Learning buttons. (See page 13.)

To program the Remote Control (continued)

To learn operating code of another remote control

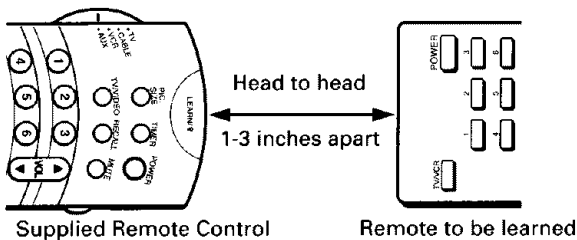
- 1** Set the Mode selection switch to AUX.



- 2** Set the LEARN-USE switch to LEARN.



- 3** Place the supplied Remote Control and the remote control transmitter to be learned, head to head approximately 1 to 3 inches (3 to 8cm) apart.

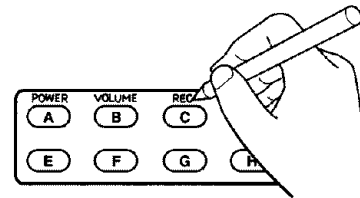


- 7** Set the LEARN-USE switch to USE.



- 8** To check your programming, operate the appropriate equipment with the supplied Remote Control. If the equipment does not operate as expected, repeat steps 1 to 7. If needed, try changing the distance between the two remote controls.

- 9** Attach the supplied template to the Remote Control to enter the function names of the AUX buttons you have programmed. Use a ballpoint pen etc. to write the function names.



- 4** Hold down the button to learn on the supplied Remote Control for about 1 second until the LEARN indicator lights up.

Note:

When you press a button other than Learning button, the indicator will blink. For specific Learning buttons in specific modes, see the table "To operate desired equipment" on page 14.

- 5** Hold down the function button to be learned on the remote control transmitter for about 3 seconds until the LEARN indicator goes off.

Note:

If the LEARN indicator goes off after blinking, the supplied Remote Control cannot learn the operating code or an error has occurred. Try steps 4 and 5 again.

- 6** Repeat steps 4 and 5 for other function keys.

To cancel the learned operating codes

- 1** Set the Mode selection switch to AUX.

- 2** Set the LEARN-USE switch to LEARN.

- 3** Hold down the button of the function to cancel on the Remote Control for about 1 second until the LEARN indicator lights up.

- 4** Hold down **RECALL** and **RESET** at the same time for about 6 seconds until the LEARN indicator goes off after blinking.

Note:

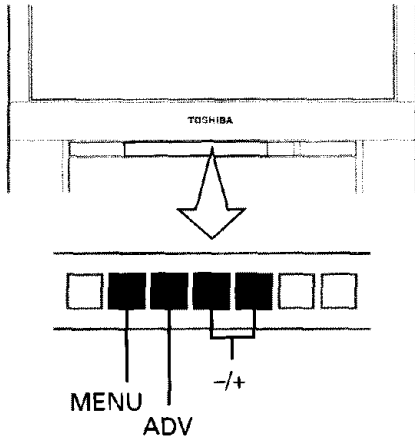
You cannot cancel the programming if you release the button while the indicator is blinking.

- 5** Set the LEARN-USE switch to USE.

Quick Reference Menu Guide

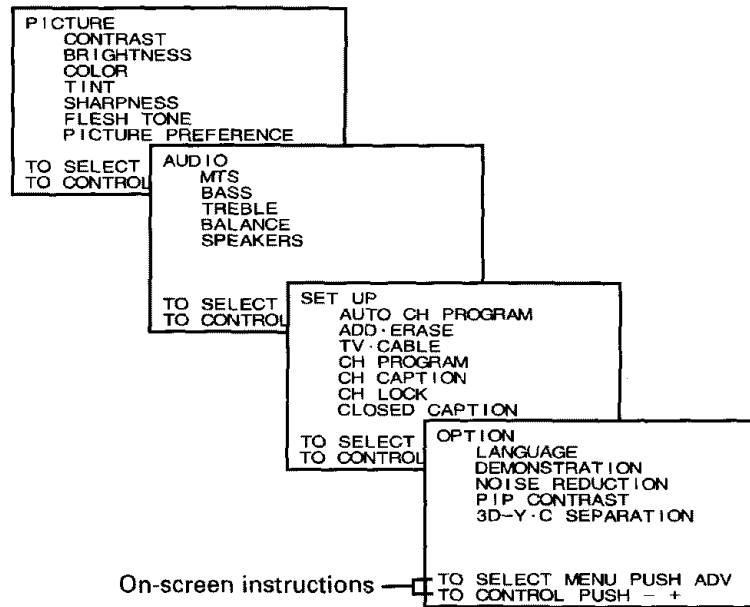
- We recommend that you familiarize yourself with these procedures for using the Menu function.

To use the menu function buttons on the TV



MENU button

Each time you press **MENU**, the PICTURE, AUDIO, SET UP or OPTION menu on-screen display is selected in order.



ADV button

Use the **ADV** button after you have pressed **MENU** to select the function you want to adjust.

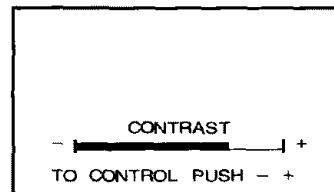
Each time you press **ADV**, the function to be adjusted will be selected in numerical order.

The selected function will be displayed in magenta.

-/+ buttons

Use the **-/+** buttons after you have pressed **ADV** or any of the four menu buttons (PICTURE, AUDIO, SETUP or OPTION).

Example: CONTRAST adjustment mode display



Pressing **+** increases the picture contrast.
Pressing **-** decreases the picture contrast.

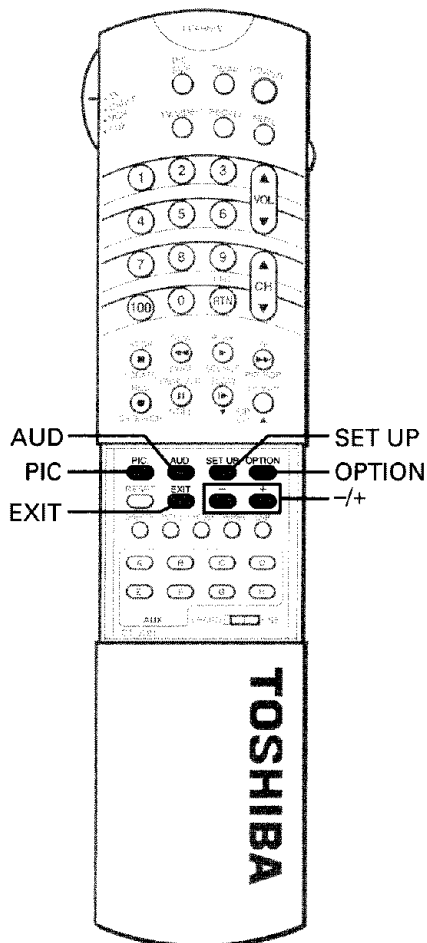
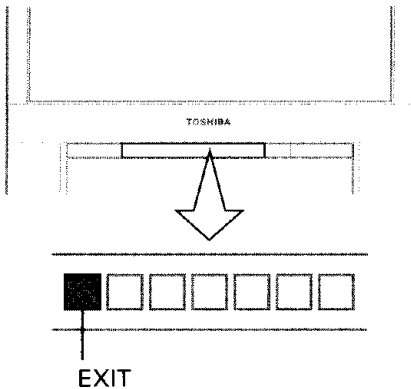
Notes:

- The on-screen instructions will appear under each menu display for easy step-by-step operation.
- The ADV button on the TV functions as the ANT/VIDEO button when no menu display is on the screen.
- The -/+ buttons on the TV function as the VOLUME ▲/▼ buttons when no menu display is on the screen.
- The EXIT button on the TV functions as the RESET button when there is no on-screen display.

Quick Reference Menu Guide

(continued)

To use the menu function buttons on the Remote Control



PIC(TURE) button

Press **PIC** repeatedly until the PICTURE menu function you want to adjust is selected.
The selected function will be displayed in magenta, then press **-/+** to adjust the setting.
Details for each function begin on page 34.

PICTURE
CONTRAST
BRIGHTNESS
COLOR
TINT
SHARPNESS
FLESH TONE
PICTURE PREFERENCE
TO SELECT MENU
PUSH PIC
TO CONTROL PUSH - +

AUD(IO) button

Press **AUD** repeatedly until the AUDIO menu function you want to adjust is selected.
The selected function will be displayed in magenta, then press **-/+** to adjust the setting.
Details for each function begin on page 37.

AUDIO
MTS
BASS
TREBLE
BALANCE
SPEAKERS

TO SELECT MENU
PUSH AUD
TO CONTROL PUSH - +

SET UP button

Press **SET UP** repeatedly until the SET UP menu function you want to adjust is selected.
The selected function will be displayed in magenta, then press **-/+** to adjust the setting.
Details for each function begin on page 23.

SET UP
AUTO CH PROGRAM
ADD-ERASE
TV-CABLE
CH PROGRAM
CH CAPTION
CH LOCK
CLOSED CAPTION
TO SELECT MENU
PUSH SET UP
TO CONTROL PUSH - +

OPTION button

Press **OPTION** repeatedly until the OPTION menu function you want to adjust is selected.
The selected function will be displayed in magenta, then press **-/+** to adjust the setting.
Details for each function begin on page 51.

OPTION
LANGUAGE
DEMONSTRATION
NOISE REDUCTION
PIP CONTRAST
3D-Y·C SEPARATION

TO SELECT MENU
PUSH OPTION
TO CONTROL PUSH - +

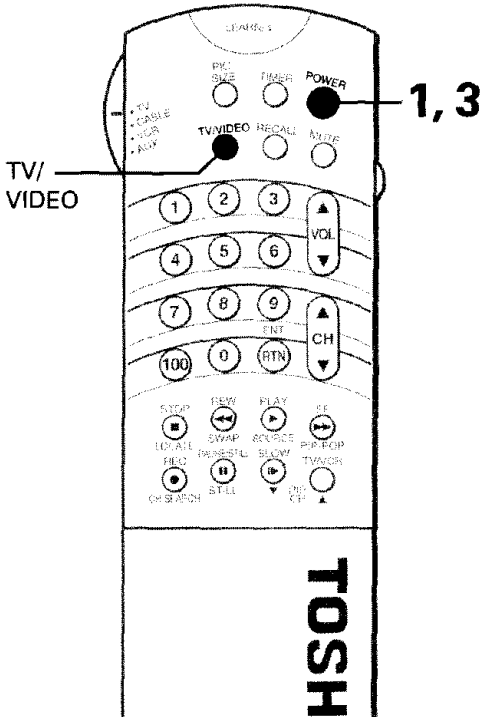
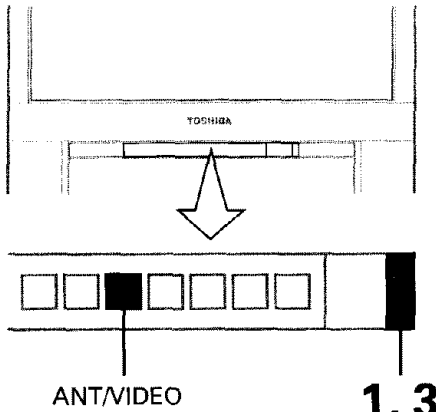
EXIT button (on the TV and on the Remote Control)

The above four menu displays will automatically disappear from the screen if no control has been operated for about 15 seconds, and all other menu displays also disappear after about 6 seconds.
If you want to clear the screen of all on-screen displays instantly, press **EXIT**.

Turning the TV On/Off

To turn the TV on/off

First set the Mode selection switch on the Remote Control to TV.



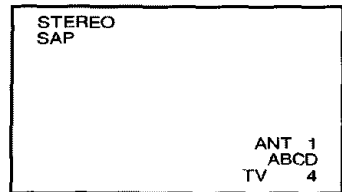
Note: The TV/VIDEO button or ANT/VIDEO button is used to input signals from other sources, like VCR's or Video Disc Players, connected to this TV. See pages 22 and 62 for details.

1 Press **POWER** on the Remote Control or the TV. The picture will appear in a few seconds.



2 The following on-screen information will be displayed for a few seconds.

- Antenna mode (when in TV mode).
- Channel number or VIDEO mode selected.
- Channel caption (if previously preset).
- Stereo or SAP audio status.



3 To turn the TV off, press **POWER** again.

Auto-Power-Off

- If a vacant channel is selected, or the TV broadcast for a day is finished, the TV will automatically turn off after about 15 minutes. This **Auto-Power-Off** feature does not operate in the VIDEO mode.

Last Mode Memory

- If the power is cut off while you are viewing the TV and the power is resupplied, the TV is turned on automatically by the **Last Mode Memory** feature. If the power is going to be off or when you leave home for a long time, unplug the power plug from the wall outlet to prevent the TV from turning on in your absence.

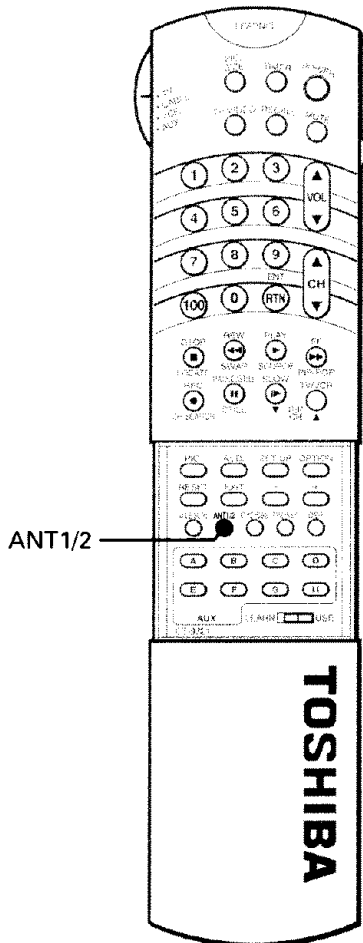
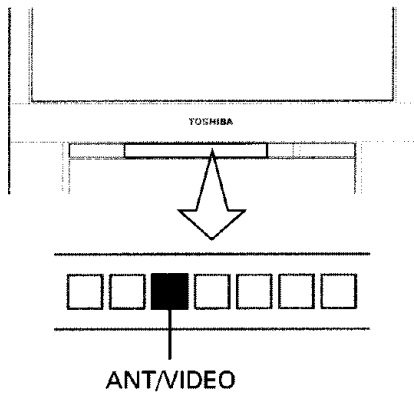
Turning the TV On/Off

(continued)

- Your TV has two separate antenna inputs (ANT-1 and ANT-2) that allow you to connect two different signal sources, if desired.

GETTING STARTED

To select the antenna input



You can switch back and forth between the two signal sources by pressing the ANT1/2 button on the Remote Control or the ANT/VIDEO button on the TV.

Using the ANT1/2 button (on the Remote Control)

Each time you press the button, the ANT 1 mode and ANT 2 mode will alternate. The selected mode will be displayed in magenta to show which antenna source you are watching. Select the mode that matches the antenna terminal you use.

ANT 1	
ANT 2	
TO SELECT PUSH ANT 1 · 2	

Note:

This button does not function in the VIDEO mode. See page 62 for details on using the VIDEO modes.

Using the ANT/VIDEO button (on the TV)

Each time you press the button, the ANT 1, VIDEO 1, VIDEO 2, VIDEO 3 or ANT 2 mode will be selected in order. The selected mode will be displayed in magenta to show which signal source you are watching. Press the button until "ANT 1" or "ANT 2" is displayed in magenta to match the antenna terminal you use.

VIDEO 1	ANT 1
VIDEO 2	ANT 2
VIDEO 3	ANT 2
TO SELECT PUSH ANT · VIDEO	

Note:

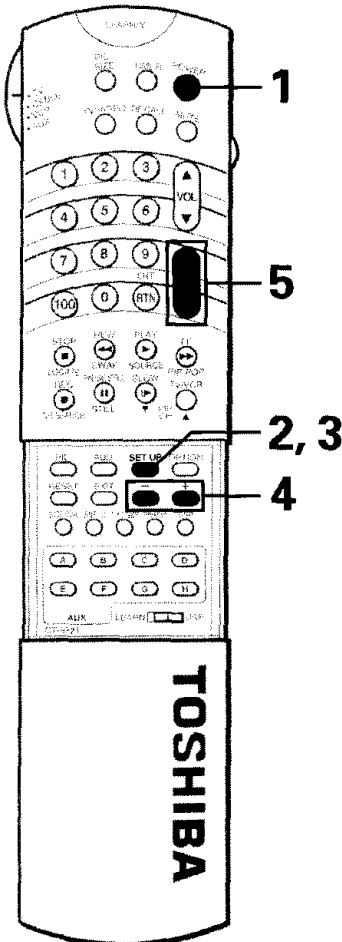
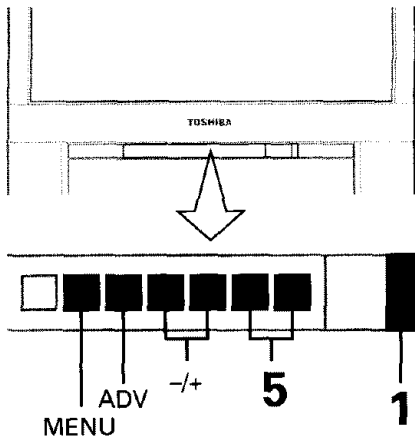
This button functions as the ADV button while any of four menu displays (PICTURE, AUDIO, SET UP or OPTION) are on the screen.

Programming Channels

- First, use the **AUTO CHANNEL PROGRAM** function to preset all active channels in your area automatically.
If necessary, arrange the preset channels with the **CHANNEL PROGRAM** and **ADD/ERASE** functions so that you can tune into only desired channels.

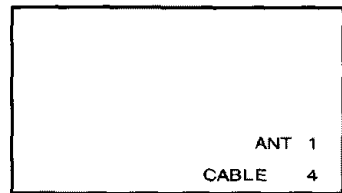
GETTING STARTED

AUTO CHANNEL PROGRAM function

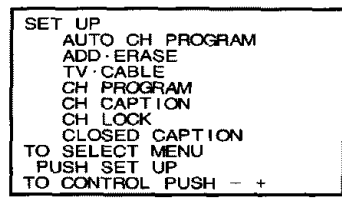


To program all available channels automatically (AUTO CH PROGRAM)

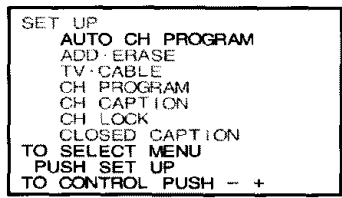
1 Press **POWER** on the Remote Control or the TV to turn on the TV.



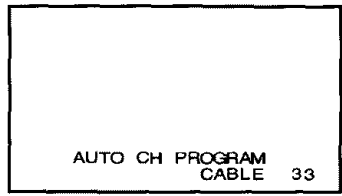
2 Press **SET UP** on the Remote Control (or **MENU** on the TV) to display the SET UP menu on the screen.



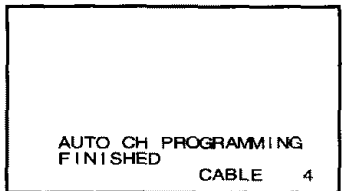
3 Press **SET UP** repeatedly on the Remote Control (or **ADV** on the TV) until "AUTO CH PROGRAM" is displayed in magenta.



4 Press **-** or **+** to start autoprogramming. The TV will automatically determine whether the TV (antenna), STD CABLE, HRC CABLE, or IRC CABLE signals are being received. Then automatically cycle through all channels and place active channels in the channel memory.



5 When autoprogramming is complete, you will see the message at the right. You can check to see which channels are in memory by pressing **CHANNEL ▲** or **▼**.

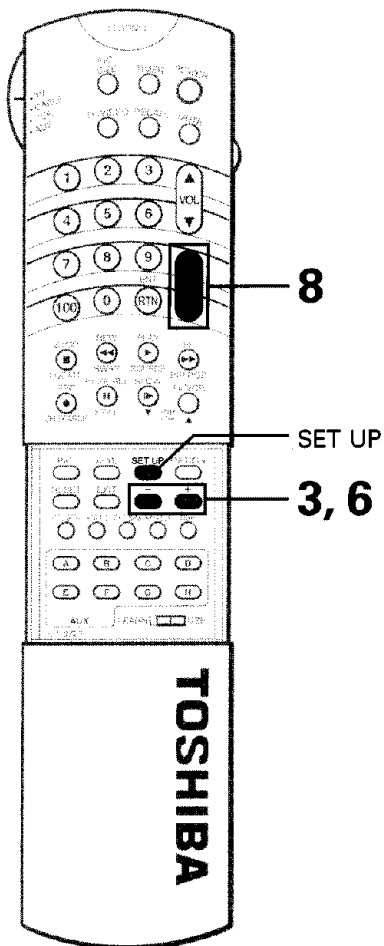
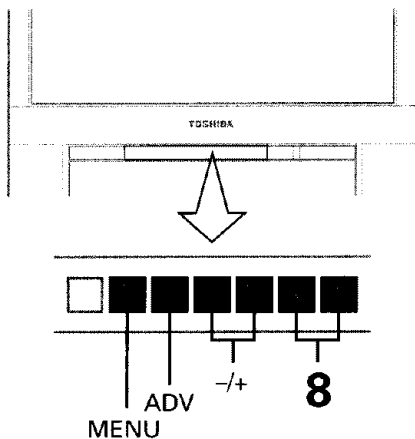


Programming Channels (continued)

- If the AUTO CH PROGRAM function does not memorize any certain CABLE channels, follow the "CHANNEL PROGRAM function" instructions below. (You will probably not need to use this function.)

GETTING STARTED

CHANNEL PROGRAM function



To program channels of a specific TV/CABLE mode (TV • CABLE) (CH PROGRAM)

- 1 Press **SET UP** on the Remote Control (or **MENU** on the TV) to display the SET UP menu on the screen.
- 2 Press **SET UP** repeatedly on the Remote Control (or **ADV** on the TV) until "TV•CABLE" is displayed in magenta.
- 3 Press **-** or **+** until the mode that corresponds to your TV signal system is displayed in magenta. Each time you press the button, the TV, STD CABLE, HRC CABLE or IRC CABLE mode will be selected in order.

```

SET UP
AUTO CH PROGRAM
ADD·ERASE
TV·CABLE
CH PROGRAM
CH CAPTION
CH LOCK
CLOSED CAPTION
TO SELECT MENU
PUSH SET UP
TO CONTROL PUSH - +
    
```

```

SET UP
AUTO CH PROGRAM
ADD·ERASE
TV·CABLE
CH PROGRAM
CH CAPTION
CH LOCK
CLOSED CAPTION
TO SELECT MENU
PUSH SET UP
TO CONTROL PUSH - +
    
```

```

TV
STD CABLE
HRC CABLE
IRC CABLE

TO SELECT PUSH - +
    
```

Tuning band and Receivable channels

Tuning band	Receivable channels
TV broadcast	VHF: 2-13 UHF: 14-69
STD CABLE*	** 1-125 (Number on this TV)
HRC CABLE*	
IRC CABLE*	

* Your cable company can advise you as to which system they are using.

CHANNEL PROGRAM function (continued)

- 4** Press **SET UP** on the Remote Control (or **MENU** on the TV) again to display the SET UP menu on the screen.

```

SET UP
AUTO CH PROGRAM
ADD ERASE
TV CABLE
CH PROGRAM
CH CAPTION
CH LOCK
CLOSED CAPTION
TO SELECT MENU
PUSH SET UP
TO CONTROL PUSH - +
    
```

- 5** Press **SET UP** repeatedly on the Remote Control (or **ADV** on the TV) until "CH PROGRAM" is displayed in magenta.

```

SET UP
AUTO CH PROGRAM
ADD ERASE
TV CABLE
CH PROGRAM
CH CAPTION
CH LOCK
CLOSED CAPTION
TO SELECT MENU
PUSH SET UP
TO CONTROL PUSH - +
    
```

- 6** Press **-** or **+** to start channel programming. The TV will automatically cycle through all the TV or CABLE channels in the mode selected by the TV•CABLE function and store active channels in the channel memory.

```

CH PROGRAM
CABLE 33
    
```

- 7** When channel programming is complete, you will see the message at the right.

```

CH PROGRAMMING
FINISHED
CABLE 4
    
```

- 8** Press **CHANNEL ▲** or **▼** to make sure the channel programming has been done properly.

To change the tuning band for the small picture (PIP/POP)

The TV•CABLE function only works with the main picture.

- 1** Press **PIP/POP ON OFF** to display the small picture.
- 2** Press **SWAP** to switch the main and small picture.
- 3** Change the tuning band following the steps 1 to 3 on the previous page.

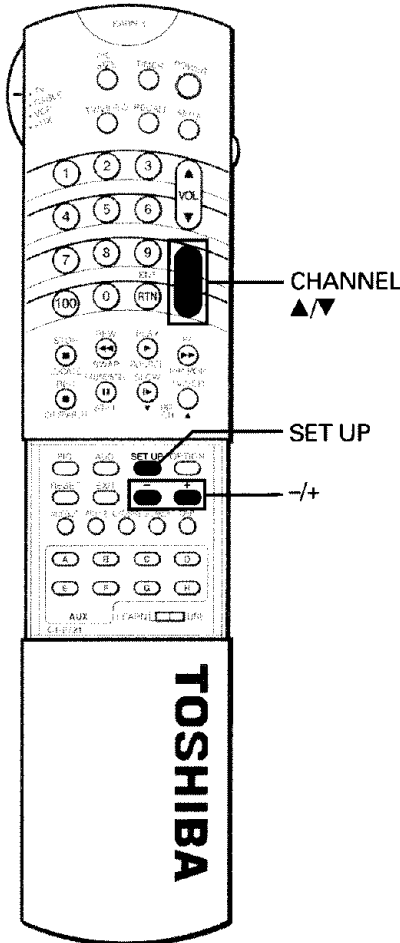
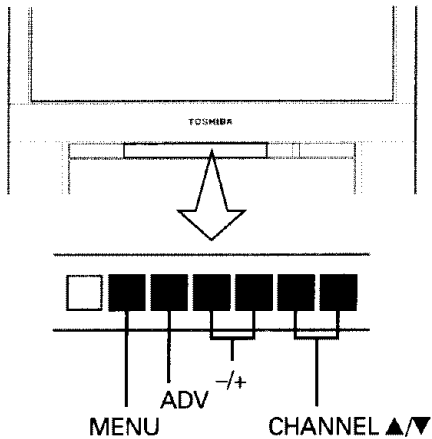
** CABLE channel reference chart

Number on this TV	Corresponding CABLE channel	Number on this TV	Corresponding CABLE channel
1	A-8	67	67
5	A-7	68	68
6	A-6	69	69
14	A	.....	.....
15	B	92	92
16	C	93	93
.....	.....	94	94
34	U	95	A-5
35	V	96	A-4
36	W	97	A-3
37	AA	98	A-2
38	BB	99	A-1
.....	.....	100	100
60	XX	101	101
61	YY	102	102
62	ZZ	.....	.....
63	AAA	123	123
64	BBB	124	124
65	65	125	125
66	66	.....	.....

The above chart is typical of many cable system channel allocations. If in doubt, consult your cable company.

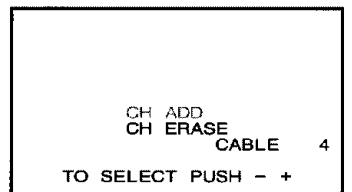
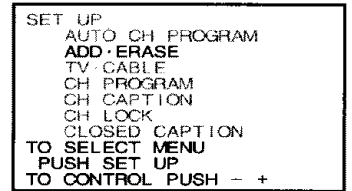
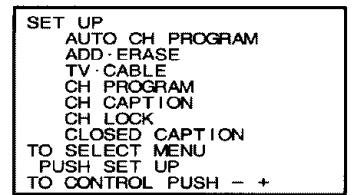
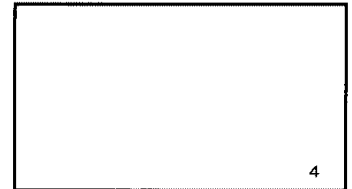
Programming Channels (continued)

ADD/ERASE function



To erase unnecessary channels

- 1** Select the channel to be erased with **CHANNEL ▲** or **▼**.
- 2** Press **SET UP** on the Remote Control (or **MENU** on the TV) to display the SET UP menu on the screen.
- 3** Press **SET UP** repeatedly on the Remote Control (or **ADV** on the TV) until "ADD•ERASE" is displayed in magenta.
- 4** Press **-** or **+** until "CH ERASE" is displayed in magenta indicating that the channel has been erased from the memory.
- 5** Repeat steps 1 through 4 for other channels.



ADD/ERASE function (continued)

To add channels

When you want to restore a channel which has been erased, follow the instructions below.

1 Select the channel you want to restore with the Channel Number buttons. (See page 29 for the method to select channels.)

4

2 Press **SET UP** on the Remote Control (or **MENU** on the TV) to display the SET UP menu on the screen.

```

SET UP
AUTO CH PROGRAM
ADD·ERASE
TV·CABLE
CH PROGRAM
CH CAPTION
CH LOCK
CLOSED CAPTION
TO SELECT MENU
PUSH SET UP
TO CONTROL PUSH - +
        
```

3 Press **SET UP** repeatedly on the Remote Control (or **ADV** on the TV) until "ADD•ERASE" is displayed in magenta.

```

SET UP
AUTO CH PROGRAM
ADD•ERASE
TV·CABLE
CH PROGRAM
CH CAPTION
CH LOCK
CLOSED CAPTION
TO SELECT MENU
PUSH SET UP
TO CONTROL PUSH - +
        
```

4 Press **-** or **+** until "CH ADD" is displayed in magenta, indicating that the channel has been memorized.

```

CH ADD
CH ERASE
CABLE 4
TO SELECT PUSH - +
        
```

You have now completed the channel programming.

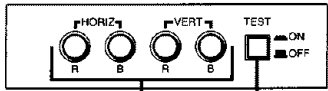
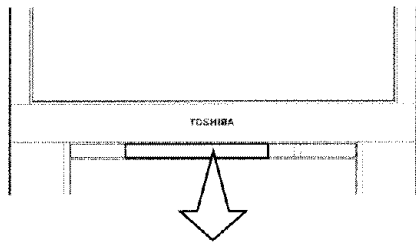
Before Watching TV Programs

- Your dealer should adjust the color convergence when your TV is delivered. However, convergence may drift over time or if you move the TV. If you can see clear images on the screen, skip this page.

GETTING STARTED

To align the colors

This wide projection TV uses three separate TV tubes; a red one, a green one, and a blue one. The red, green and blue images are projected onto the screen where they converge to form a full color picture. You can see a clear picture when they converge correctly.



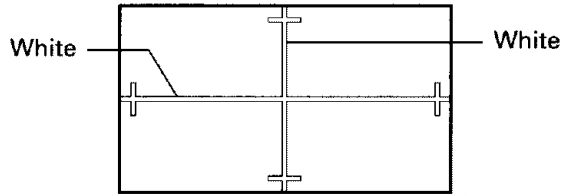
TEST button

Color convergence controls

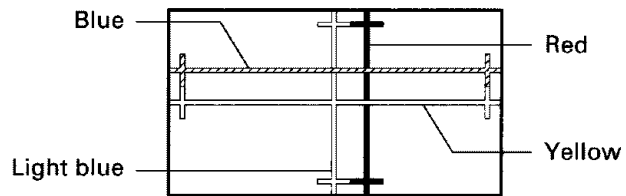
- HORIZ(ontal)
- R: Red
- B: Blue
- VERT(ical)
- R: Red
- B: Blue

To check and align the colors

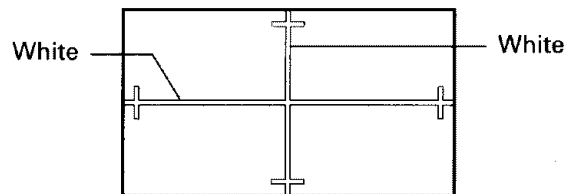
- Select an active channel and wait a moment for the picture to stabilize.
- Push the TEST button to set to the "TEST ON" position. If alignment is correct, there will be one vertical and one horizontal white line: so you don't have to align the colors.



- If you see separate colored lines, adjust the color convergence controls. Turn the knobs until the red and blue lines disappear into the other lines.



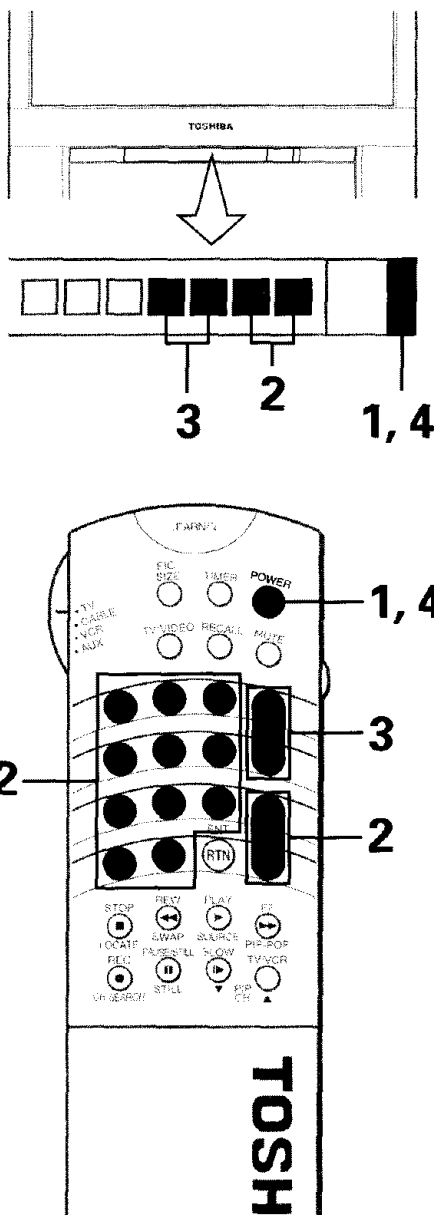
- When color convergence is correctly adjusted, you will see single white lines.



- Push the TEST button again to set to the "TEST OFF" position.

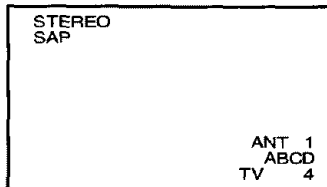
Watching TV Programs

To watch a TV program



1 Press **POWER** on the Remote Control or the TV.

The following on-screen information will be displayed for a few seconds.



- Antenna mode (when in TV mode).
- Channel number or VIDEO mode selected.
- Channel caption (if previously preset).
- Stereo or SAP audio status.

2 Select the desired program in one of the following two ways.

To scan the memorized channels in numerical sequence

Press **CH (CHANNEL) ▲** to select next higher channel.

Press **CH (CHANNEL) ▼** to select next lower channel.

Press the button again to select next memorized channels.



To select a channel directly

Press the **Channel Number** buttons (0 – 9 and 100).

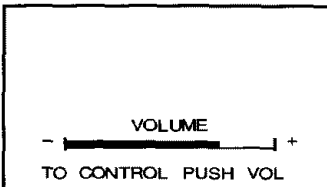
To select channel 4, press "4" (or press "0" and "4" in order).

To select channel 38, press "3" and "8" in order.

To select channel 125, press "100", "2" and "5" in order.

3 Adjust the sound volume with **VOLUME ▲/▼** on the Remote Control or the TV.

Press **▲** to increase the volume; **▼** to decrease the volume.



4 To turn off the TV, press **POWER** again.

* The **VOLUME ▼/▲** buttons on the TV function as the menu **-/+** buttons while any of the menu displays (PICTURE, AUDIO, SET UP or OPTION) are on the screen.

If you cannot select certain channels, either TV broadcast or CABLE channels

Check if the **TV•CABLE** function is properly set. See page 24.

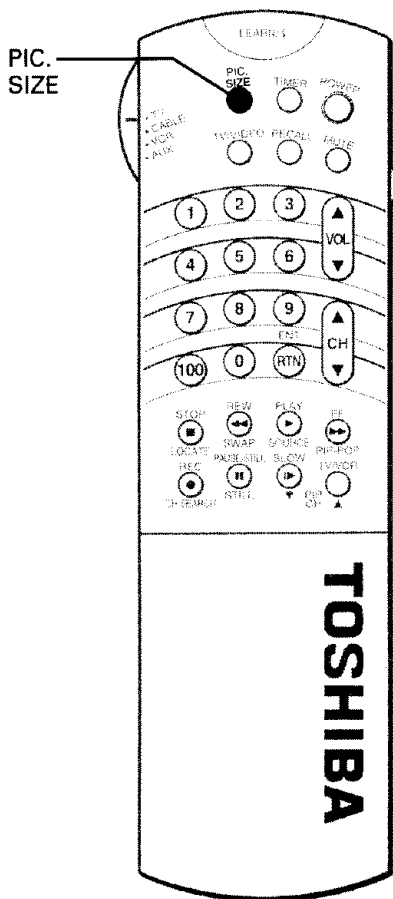
BASIC OPERATION

Enjoying Wide Pictures

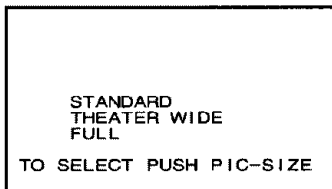
- You can watch programs with the usual TV picture aspect ratio of 4:3 as well as programs in a variety of letter box formats.

To select the picture size

BASIC OPERATION



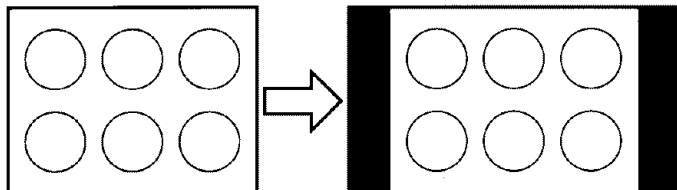
Press **PIC. SIZE** repeatedly. "STANDARD", "THEATER WIDE" or "FULL" mode will be selected in order. The selected mode will be displayed in magenta.



STANDARD

This mode shows pictures in the conventional ratio of 4:3.

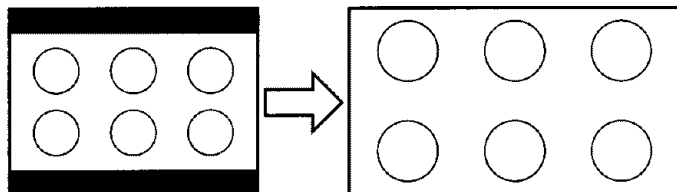
Viewing a normal program



THEATER WIDE

This mode shows the pictures magnified by 1.33 times.

Viewing a normal program or letter box program



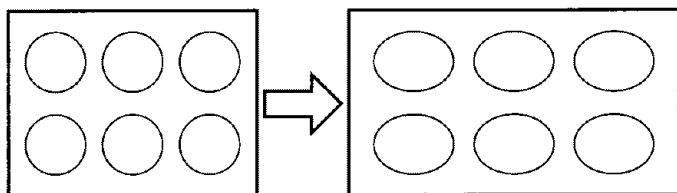
Note:

If you select this mode in normal programs, the picture at the top and bottom of the screen will be hidden. If subtitles are difficult to read, scroll the picture. (See page 32.)

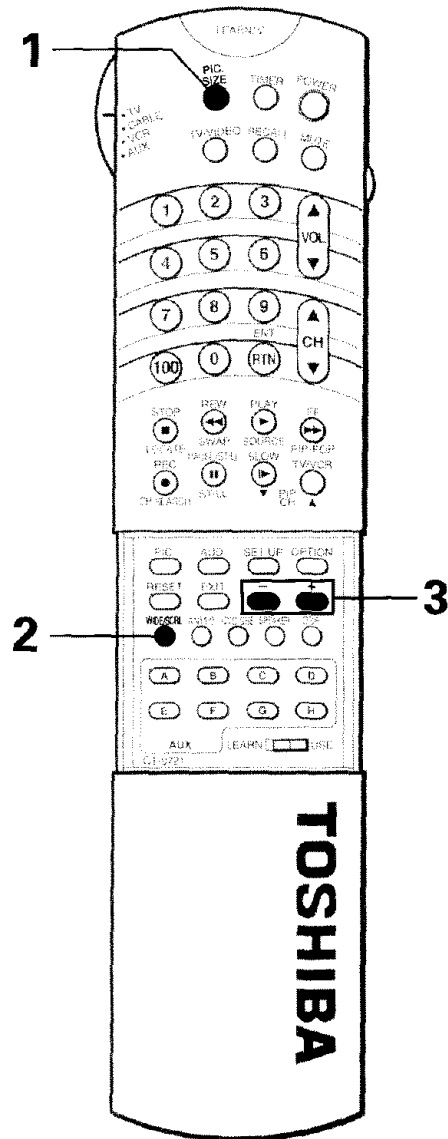
FULL

This mode shows the pictures stretched horizontally by 1.33 times.

Viewing a normal program



To adjust the height and the vertical position of the THEATER WIDE mode picture



To adjust the height of the picture

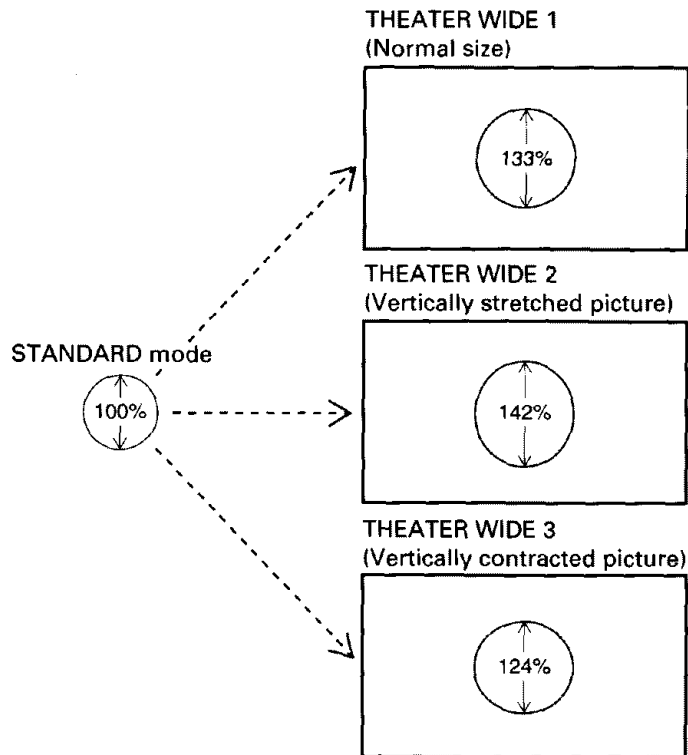
1 Press **PIC. SIZE** to select the THEATER WIDE mode.

2 Press **WIDE/SCRL** until "THEATER WIDE SIZE" is displayed on the screen in magenta.

THEATER WIDE SIZE
PICTURE SCROLL
TO SELECT PUSH WIDE · SCRL

3 Press **-** or **+**.
The menu display will appear as shown at the right. Then repeatedly press **-** or **+** to select the appropriate picture height from the following three modes.

THEATER WIDE 1
THEATER WIDE 2
THEATER WIDE 3
TO SELECT PUSH - +



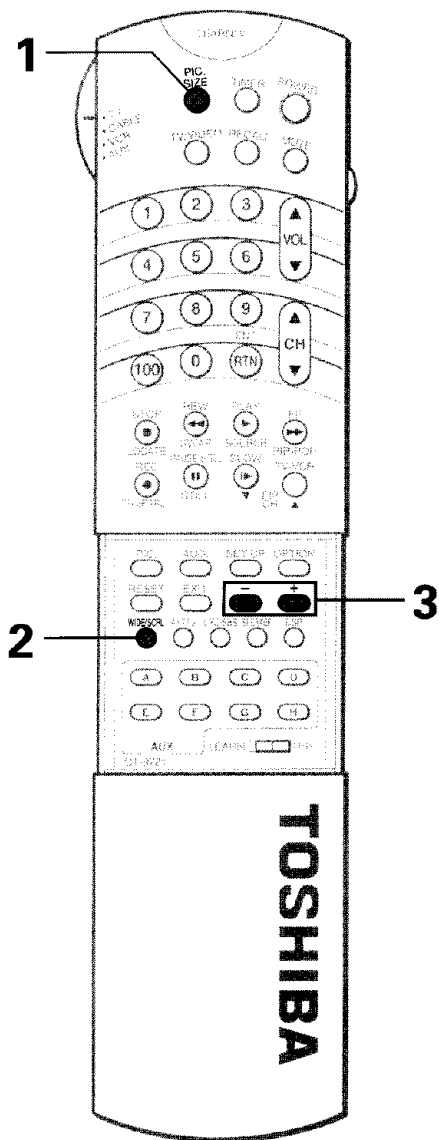
Note: This setting is reset to "THEATER WIDE 1" mode automatically when you change to another channel or press the RESET button.

Pressing reset will automatically change the PIC size to STANDARD mode.

Enjoying Wide Pictures (continued)

To adjust the height and the vertical position of the THEATER WIDE mode picture (continued)

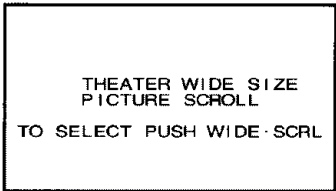
BASIC OPERATION



To adjust the vertical position of the picture

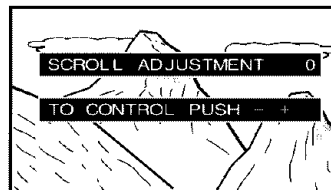
1 Press **PIC. SIZE** to select the THEATER WIDE mode.

2 Press **WIDE/SCRL** until "PICTURE SCROLL" is displayed on the screen in magenta.



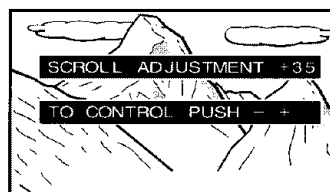
3 Press - or + to adjust the vertical position of the picture.

Normal position



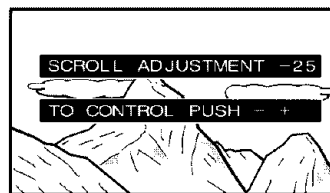
(Center)

To scroll the picture, press +.



(Upper end)

To lower the picture, press -.



(Lower end)

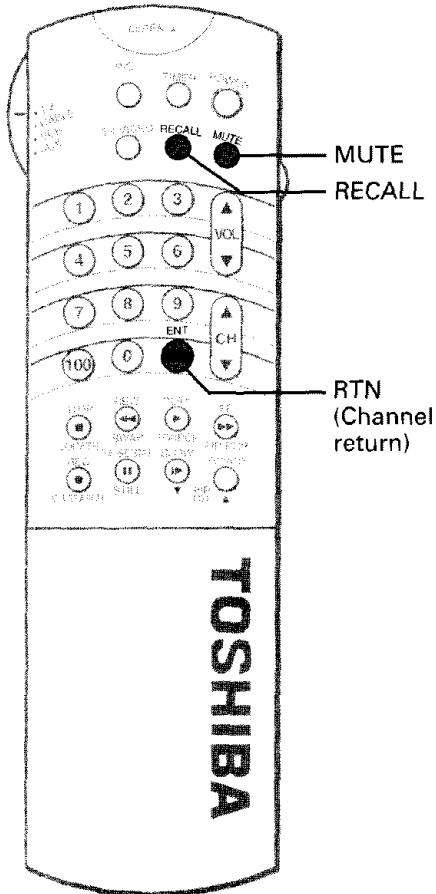
Note: This setting is reset to the normal position automatically when you change to another channel or press the RESET button.

Pressing reset will automatically change the PIC size to STANDARD mode.

Convenient Remote Functions

- These convenient functions can be operated with the Remote Control only.

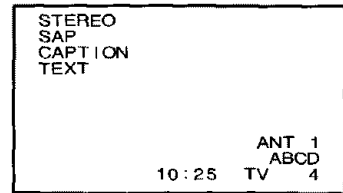
On-screen displays/sound muting/channel return



To display on-screen information

Press **RECALL** to display the following on-screen information.

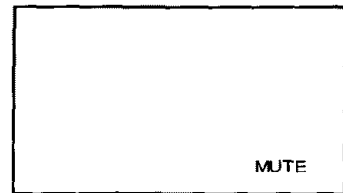
- Antenna mode (when in TV mode).
- Channel number or VIDEO mode selected.
- Channel caption (if previously preset).
- Time (if clock has been set).
- Stereo or SAP audio status.
- Closed Caption or Text program status.



To mute the sound

- 1 Press **MUTE** to mute the sound immediately without affecting the picture.

Note: While muting the sound, the "CAPTION 1" mode will be selected automatically. (See page 58.)



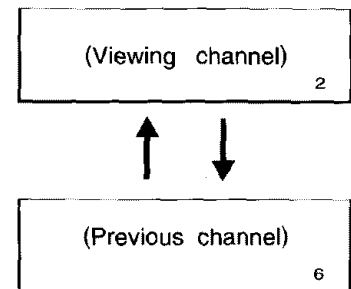
- 2 To restore the sound, press **MUTE** again.

To return to the previous channel viewed

Using this function, you can watch two channels alternately.

- 1 Select the first channel you want to view.
- 2 Select the other channel with the Channel Number buttons.
- 3 Press **RTN**. The previous channel will return.

Each time you press **RTN**, the TV will switch back and forth between the two channels.

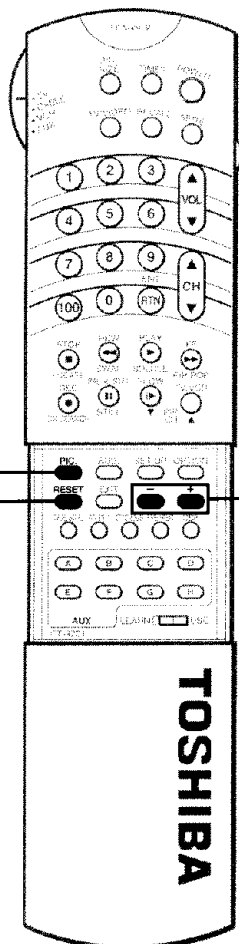
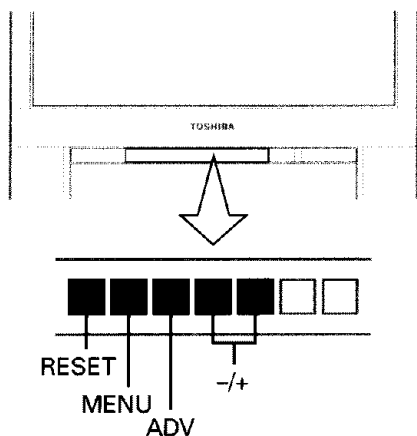


BASIC OPERATION

Controlling the Picture

To adjust the picture performance

BASIC OPERATION



To adjust the picture quality

You can adjust the picture quality (CONTRAST, BRIGHTNESS, COLOR, TINT, and SHARPNESS) to suit your personal preference.

- 1 Press **PIC** on the Remote Control (or **MENU** on the TV) to display the PICTURE menu.

```

PICTURE
CONTRAST
BRIGHTNESS
COLOR
TINT
SHARPNESS
FLESH TONE
PICTURE PREFERENCE
TO SELECT MENU
PUSH PIC
TO CONTROL PUSH - +
    
```

- 2 Press **PIC** on the Remote Control (or **ADV** on the TV) until the item you want to adjust is displayed in magenta.

```

PICTURE
CONTRAST
BRIGHTNESS
COLOR
TINT
SHARPNESS
FLESH TONE
PICTURE PREFERENCE
TO SELECT MENU
PUSH PIC
TO CONTROL PUSH - +
    
```

- 3 Press **-** or **+** to adjust the level.

Example: CONTRAST adjustment mode display

```

          CONTRAST
- ————— +
TO CONTROL PUSH - +
    
```

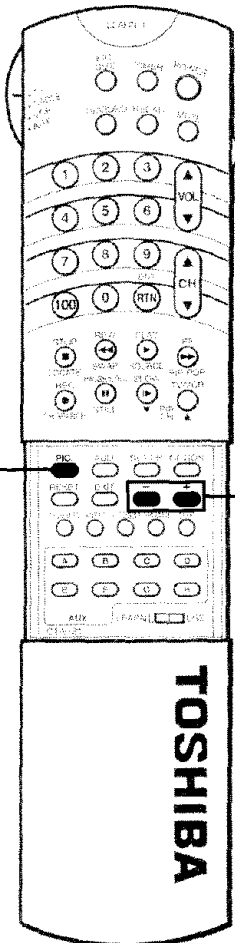
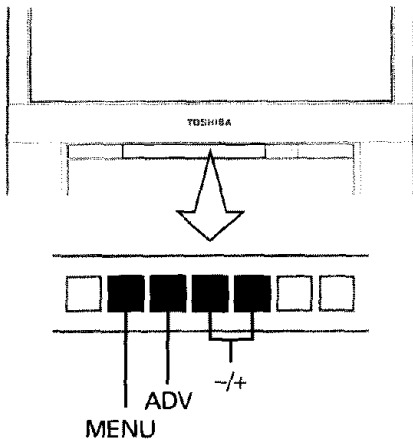
Item	Pressing	
	-	+
CONTRAST	lower	higher
BRIGHTNESS	darker	lighter
COLOR	paler	deeper
TINT	reddish	greenish
SHARPNESS	softer	sharper

The above five PICTURE items you have adjusted will be stored in the MEMORY of the PICTURE PREFERENCE function. (See page 36.)

If you want to adjust any other item, Press **PIC** repeatedly until the item you want to adjust is displayed in magenta.

To reset the picture adjustments, Press **RESET**. (See page 36 for details.)

To adjust the picture performance (continued)



Flesh tone function (FLESH TONE)

This function allows you to obtain natural flesh tone by correcting the reference of tint between TV stations.

- 1 Press **PIC** on the Remote Control (or **MENU** on the TV) to display the PICTURE menu.

```

PICTURE
CONTRAST
BRIGHTNESS
COLOR
TINT
SHARPNESS
FLESH TONE
PICTURE PREFERENCE
TO SELECT MENU
PUSH PIC
TO CONTROL PUSH - +
    
```

- 2 Press **PIC** on the Remote Control (or **ADV** on the TV) until "FLESH TONE" is displayed in magenta.

```

PICTURE
CONTRAST
BRIGHTNESS
COLOR
TINT
SHARPNESS
FLESH TONE
PICTURE PREFERENCE
TO SELECT MENU
PUSH PIC
TO CONTROL PUSH - +
    
```

- 3 Press **-** or **+** until "FLESH TONE ON" is displayed on the screen in magenta. This function has now been activated.

```

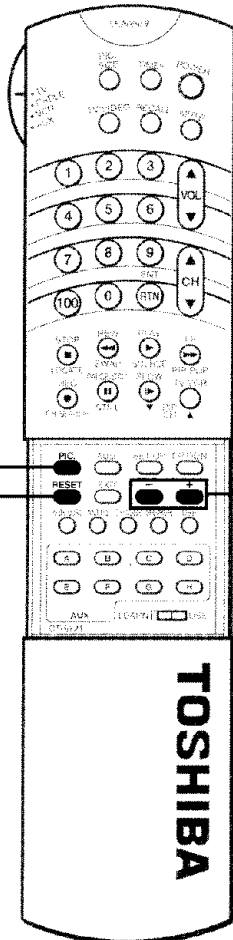
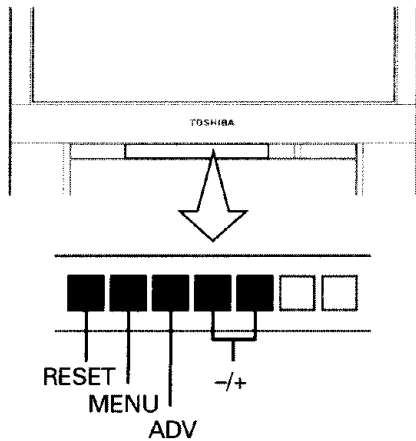
FLESH TONE ON
FLESH TONE OFF
TO SELECT PUSH - +
    
```

To deactivate this function
Select "FLESH TONE OFF".

Controlling the Picture (continued)

BASIC OPERATION

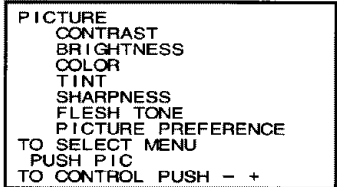
To adjust the picture performance (continued)



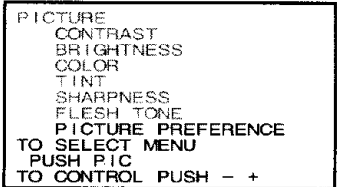
To select the picture preference

You can select a desired picture tone from three picture preset modes (NORMAL, THEATER, MEMORY) instantly.

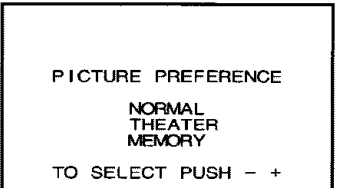
- 1 Press **PIC** on the Remote Control (or **MENU** on the TV) to display the PICTURE menu.



- 2 Press **PIC** on the Remote Control (or **ADV** on the TV) until "PICTURE PREFERENCE" is displayed in magenta.



- 3 Press **-** or **+** until your desired mode is displayed in magenta.



Mode	Picture quality
NORMAL	the picture quality preset at the factory
THEATER	soft and moody picture
MEMORY	the picture quality you set (First follow page 34.)

Note:

When you press the RESET button, the picture quality of the MEMORY mode will be set to the factory-preset level.

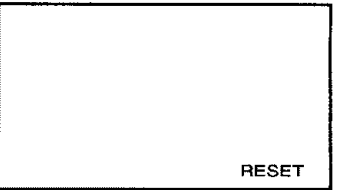
RESET button

To reset the **PICTURE** and **AUDIO** adjustments to the factory-preset level (maximum CONTRAST and all other adjustments centered)

Press **RESET**.

The RESET button also performs the following adjustments:

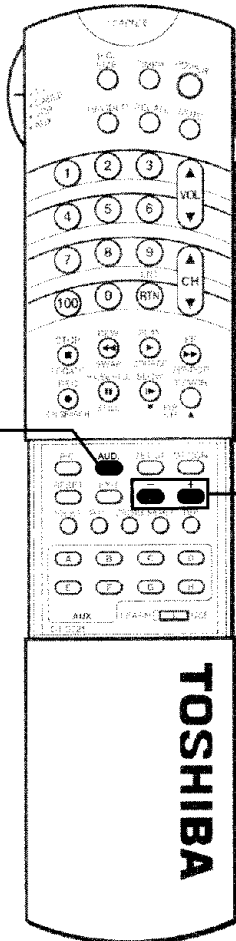
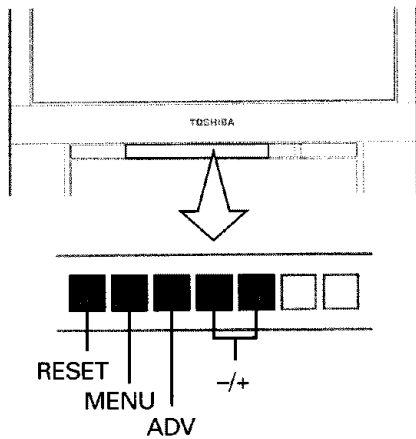
- NOISE REDUCTION OFF
- PICTURE PREFERENCE NORMAL
- PIP CONTRAST Maximum setting
- PICTURE SIZE STANDARD
- PICTURE SCROLL Normal position
- THEATER WIDE THEATER WIDE 1



Controlling the Sound

- You can adjust the sound quality (BASS, TREBLE and BALANCE) to suit your personal preference.

To adjust the sound performance



1 Press **AUD** on the Remote Control (or **MENU** on the TV) to display the AUDIO menu on the screen.

```
AUDIO
MTS
BASS
TREBLE
BALANCE
SPEAKERS
INPUT BALANCE
TEST
TO SELECT MENU
PUSH AUD
TO CONTROL PUSH - +
```

2 Press **AUD** on the Remote Control (or **ADV** on the TV) until the item you want to adjust is displayed in magenta.

```
AUDIO
MTS
BASS
TREBLE
BALANCE
SPEAKERS
INPUT BALANCE
TEST
TO SELECT MENU
PUSH AUD
TO CONTROL PUSH - +
```

3 Press **-** or **+** on the Remote Control to adjust the level.

Example: BASS adjustment mode display

```
          BASS
- ─────────── +
TO CONTROL PUSH - +
```

Item	Pressing	
	-	+
BASS	weaker	stronger
TREBLE	weaker	stronger
BALANCE	decreases the right channel	decreases the left channel

If you want to adjust any other item
Press **AUD** while the display remains on the screen.

Notes:

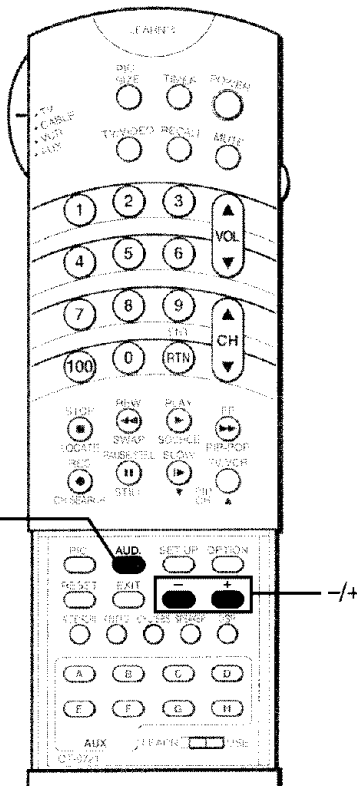
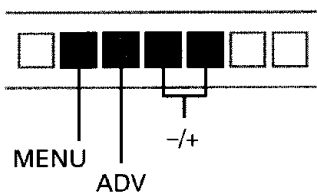
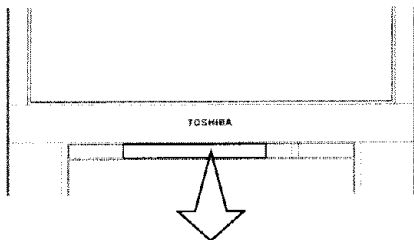
- The "INPUT BALANCE" and "TEST" functions are described on pages 42 and 43 respectively.
- The "SPEAKERS" mode selection is described on page 66.

Selecting Stereo and SAP Broadcasts

- The MTS (Multi-channel TV Sound) feature allows you to improve your TV viewing with high fidelity stereo sound. MTS also provides for an extra channel, SAP (Second Audio Program), used to transmit a second language or other Audio information.

To listen to Stereo/SAP broadcasts

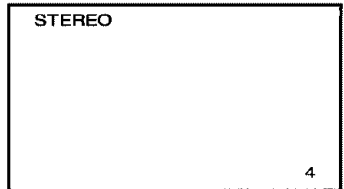
BASIC OPERATION



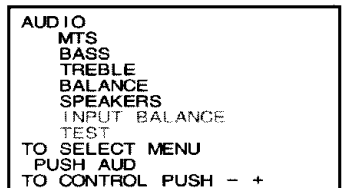
If the stereo sound is noisy
If a broadcast signal is not strong enough, and noise-free stereo sound is not available, select the MONAURAL mode. The noise should be reduced.

Listening to stereo sound

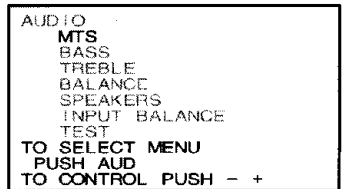
1 When the TV receives a stereo broadcast, the word "STEREO" is displayed on the screen whenever the TV is turned on, a channel is selected, or the RECALL button is pressed.



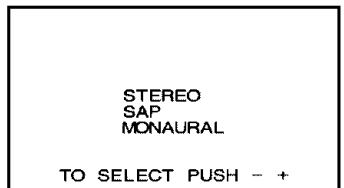
2 Press **AUD** on the Remote Control (or **MENU** on the TV) to display the AUDIO menu on the screen.



3 Press **AUD** (or **ADV** on the TV) repeatedly until "MTS" is displayed in magenta.

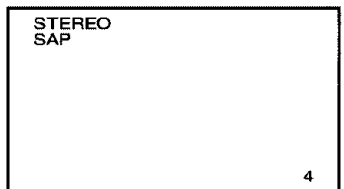


4 Press **-** or **+** repeatedly until "STEREO" is displayed in magenta. Usable selections are displayed in yellow.



Listening to the second language

1 When the TV receives a SAP broadcast, the word "SAP" is displayed on the screen.



2 Select "SAP" following steps 2 to 4 above.

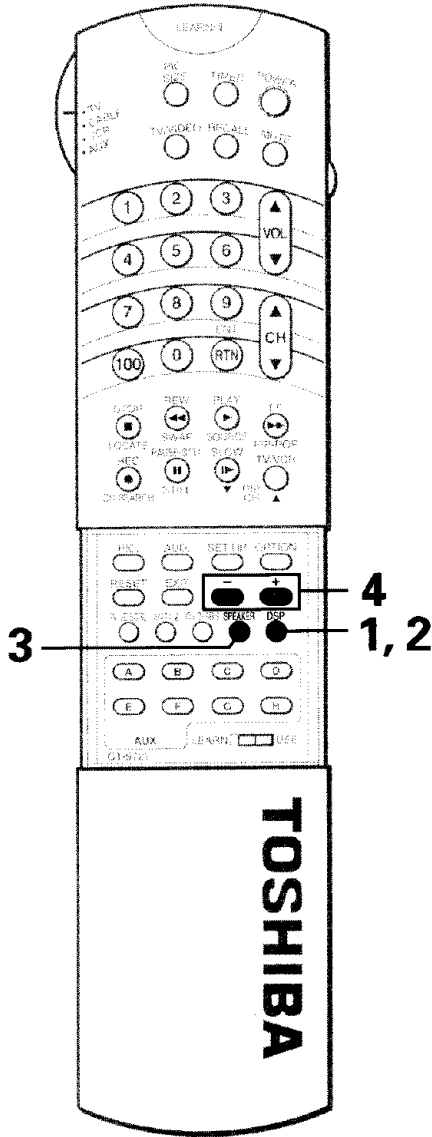
Notes:

- Be sure to select the STEREO mode if the broadcast is in stereo.
- If "STEREO" (or "SAP") is not displayed, in spite of a known MTS broadcast, select the STEREO or SAP mode.
- The MTS mode does not function in the VIDEO mode.

Enhancing the Surround Sound Effect

- With Toshiba's Dolby Pro Logic Surround and **DSP** (Digital Sound Processor), the TV can simulate a wide range of various surroundings: From Dolby Pro Logic Surround (NORMAL and PHANTOM) and Dolby 3 Stereo to THEATER, STADIUM, NIGHT CLUB and CONCERT HALL surround.

To select the DSP mode



Note:
The DSP function processes only stereo signals input from a TV broadcast or video.

Effects of each DSP mode

Mode	Surround effect
THEATER	A movie theater filled with a rich warm sound
STADIUM	A large football or baseball stadium for a live game
NIGHT CLUB	A nightclub room
CONCERT HALL	A concert hall having about 1500 seats

To activate the appropriate DSP mode

1 Press **DSP** on the Remote Control to call up the DSP mode display.

DOLBY PRO LOGIC : NORMAL
 DOLBY PRO LOGIC : PHANTOM
 DOLBY 3 STEREO
 THEATER
 STADIUM
 NIGHT CLUB
 CONCERT HALL
 OFF
 TO SELECT PUSH DSP · DOLBY

2 Press **DSP** repeatedly until your desired mode is displayed in magenta.

DOLBY PRO LOGIC : NORMAL
 DOLBY PRO LOGIC : PHANTOM
 DOLBY 3 STEREO
 THEATER
 STADIUM
 NIGHT CLUB
 CONCERT HALL
 OFF
 TO SELECT PUSH DSP · DOLBY

3 Press **SPEAKER** to select either the **FRONT** or **REAR** speakers to be adjusted.
The selected mode will be displayed in magenta.

THEATER
 FRONT
 REAR
 - ————— +
 TO SELECT PUSH SPEAKER
 TO CONTROL PUSH - +

The **FRONT** and **REAR** speakers can be adjusted separately.

FRONT mode—To adjust the built-in speakers or connected external speakers.

REAR mode—To adjust the Surround Speakers connected to the **REAR SPEAKER** terminals.

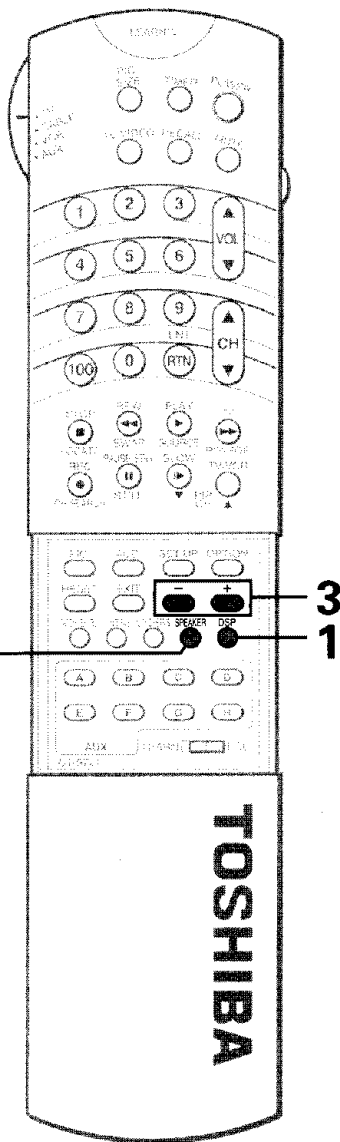
4 Press **-** or **+** to adjust the DSP level.

ADVANCED OPERATION

Enhancing the Surround Sound Effect (continued)

- The realistic sound of the cinema is now available from the Toshiba television. This amazing three dimensional sound effect is available from any video and laser disc recorded in Dolby Surround and from an increasing number of TV broadcasts.
- The illustrations on the next page show the surround effects available from the three modes, and the speakers driven.

Dolby Pro Logic Surround



To enjoy the Dolby Surround effects of the "DOLBY PRO LOGIC: NORMAL" and "DOLBY 3 STEREO" features, you have to connect external speakers (not supplied) to the TV. Be sure to set the MAIN SPEAKER switch to "EXT". See page 67 for details.

To select Dolby Pro Logic Surround

- 1 Press **DSP** repeatedly until your desired mode is displayed in magenta.

DOLBY PRO LOGIC : NORMAL
 DOLBY PRO LOGIC : PHANTOM
 DOLBY 3 STEREO
 THEATER
 STADIUM
 NIGHT CLUB
 CONCERT HALL
 OFF

TO SELECT PUSH DSP · DOLBY

If the MAIN SPEAKER switch located on the TV rear panel is set to the "INT" position, you will see the display at the right. Then select the external speaker position from the switch.

TO ENJOY THIS MODE
 TURN SPEAKER SW TO EXT
 HOOK UP EXT SPEAKERS

- 2 Press **SPEAKER** to select either the CENTER or REAR speakers to be adjusted. The selected mode will be displayed in magenta.

The CENTER and REAR speakers can be adjusted separately.

CENTER mode—To adjust the built-in Center Speakers.

REAR mode—To adjust the Surround Speakers connected to the REAR SPEAKER terminals.

DOLBY PRO LOGIC : NORMAL
 CENTER
 REAR

TO SELECT PUSH SPEAKER
 TO CONTROL PUSH - +

- 3 Press - or + to adjust the DSP level.

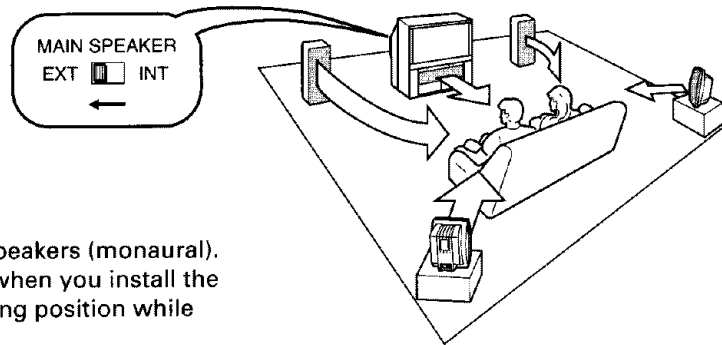
To deactivate the DSP function

Select "OFF" in the DSP mode display.

DOLBY PRO LOGIC: NORMAL

If you choose to use the external speakers.

Main Left (external) 1
Center (built-in) 2
Main Right (external) 1
Rear Left (Surround) 1
Rear Right (Surround) 1



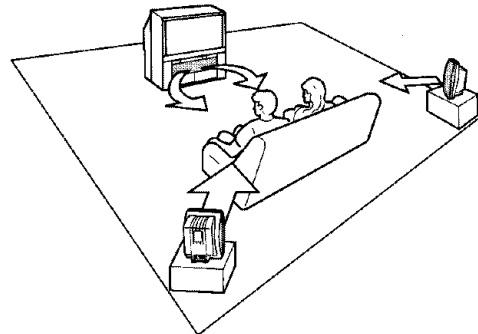
Notes:

- The built-in speakers operate as the Center speakers (monaural).
- You can get the best surround performance when you install the Surround Speakers slightly above your viewing position while watching TV.

DOLBY PRO LOGIC: PHANTOM

If you choose not to use the external speakers.

Main Left (built-in) 1
Main Right (built-in) 1
Rear Left (Surround) 1
Rear Right (Surround) 1



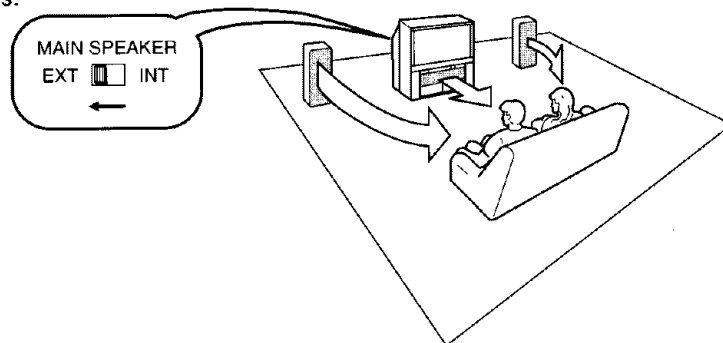
Notes:

- The built-in speakers operate as the Main speakers (stereo).
- You can get the best surround performance when you install the Surround Speakers slightly above your viewing position while watching TV.

DOLBY 3 STEREO

If you choose not to use the Surround Speakers.

Main Left (external) 1
Center (built-in) 2
Main Right (external) 1

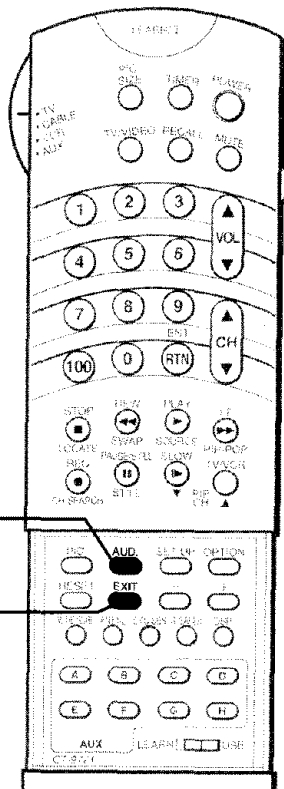
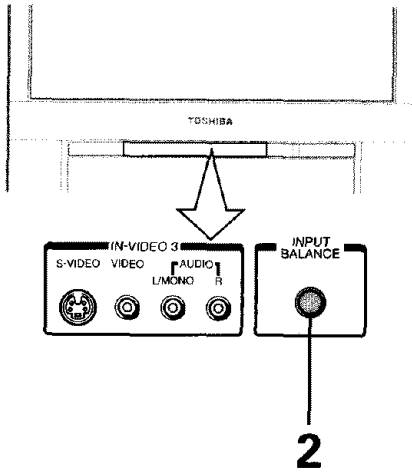


Note: The built-in speakers operate as the Center speakers (monaural).

Enhancing the Surround Sound Effect (continued)

- The input balance is normally preset and should need little or no adjustment.
- This adjustment is for the Dolby Pro Logic Normal/Phantom and Dolby 3 Stereo features.
- First select one of these 3 modes. (See page 40).

Dolby Surround level settings



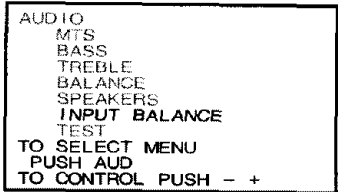
To adjust the INPUT BALANCE control

When listening to a monaural sound such as dialogue, the sound should come mostly from the Center (built-in_ Speakers. If not, adjust the input balance control on the set. Using a dialogue portion of the program, activate the INPUT BALANCE mode and adjust the control to minimize any dialogue leakage coming from the left and right speakers.

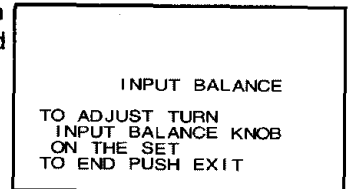
- 1 Press **AUD** repeatedly to select "INPUT BALANCE".

Note:

If you select a mode other than the Dolby Surround modes in the DSP mode display, "INPUT BALANCE" and "TEST" will not be displayed.




- 2 Adjust the **INPUT BALANCE** control on the set to minimize the dialogue sound from the left and right speakers.

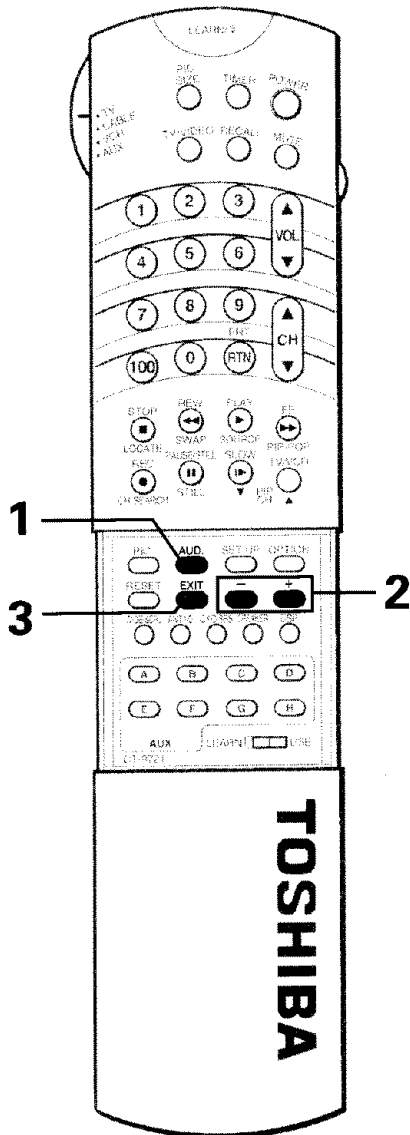


- 3 Press **EXIT** to end the INPUT BALANCE adjustment.

***Dolby Surround**

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Dolby Surround level settings (continued)



To select the Dolby Pro Logic TEST mode

These TEST sequences are designed to let you balance all the speakers to the same volume level. The method of adjustment described below is the same for all the Dolby Surround effects (Dolby Pro Normal/Phantom and Dolby 3 Stereo).

- 1 Press **AUD** repeatedly to select "TEST".

```
AUDIO
MTS
BASS
TREBLE
BALANCE
SPEAKERS
INPUT BALANCE
TEST
TO SELECT MENU
PUSH AUD
TO CONTROL PUSH - +
```

- 2 Press - or + to control the level. The adjustment screen for each speaker will be displayed for about 2 seconds each in the following order:

```
→ LEFT → CENTER → RIGHT ←
← REAR ←
```

```

          CENTER
- ─────────── +
TO CONTROL PUSH - +
TO END PUSH EXIT
```

Adjust the Center (built-in) and Rear speaker levels to match the Left and Right speakers while the Center or Rear adjustment display is on the screen.

Notes:

- In the "DOLBY PRO LOGIC: PHANTOM" mode, "LEFT + RIGHT" will be displayed in place of "CENTER".
Adjustable item is "REAR" only.
- The adjustment screen for the "REAR" speakers is not displayed in the "DOLBY 3 STEREO" mode.

- 3 Press **EXIT** to end the TEST.

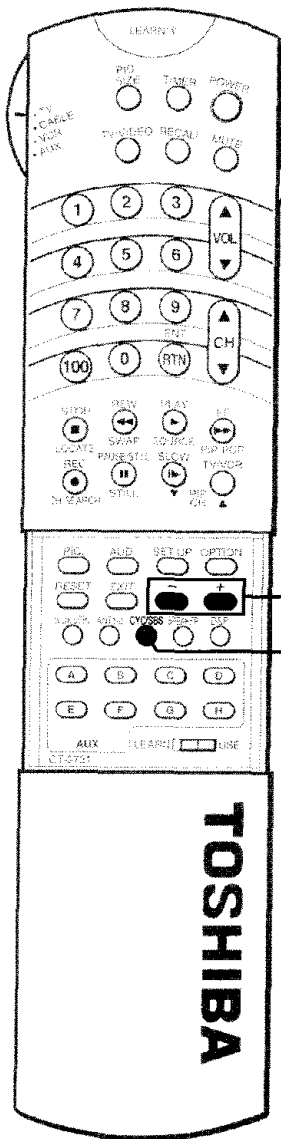
Note:

The DOLBY SURROUND level settings are only for the CENTER (built-in) and REAR speakers.

Enhancing the Surround Sound Effect (continued)

- The Sub-Bass System allows you to improve bass performance (even when the sound volume is low).

To operate the Sub-Bass System



1 Press **CYC/SBS** on the Remote Control to call up the Sub-Bass System ON/OFF mode display shown at the right.

SUB BASS SYSTEM ON
SUB BASS SYSTEM OFF
TO SELECT PUSH CYC·SBS

2 Press **CYC/SBS** until "SUB BASS SYSTEM ON" is displayed in magenta.

SUB BASS SYSTEM ON
SUB BASS SYSTEM OFF
TO SELECT PUSH CYC·SBS

3 Press - or + to call up the SBS level adjustment display.

SUB BASS SYSTEM
- [] +
TO CONTROL PUSH - +

4 Press - or + to adjust the SBS level.

To deactivate the Sub-Bass System function

Select "SUB BASS SYSTEM OFF" in the Sub-Bass System ON/OFF mode display.

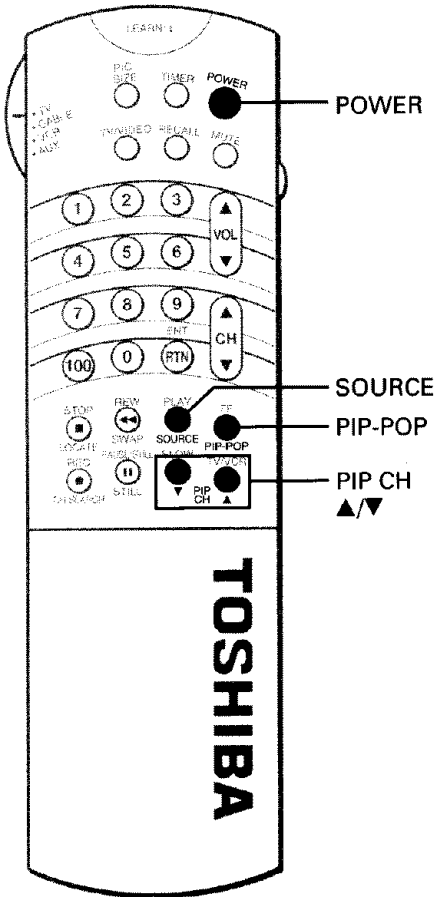
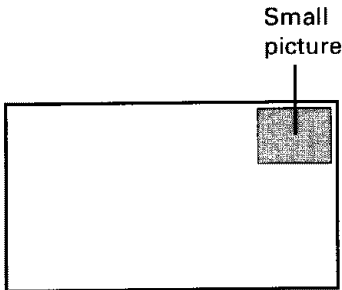
Note:

The Sub-Bass System does not operate through the "VARIABLE AUDIO OUTPUT" jacks. (See page 66) However, the above on-screen displays will appear when the buttons are pressed.

Two-Picture Screen

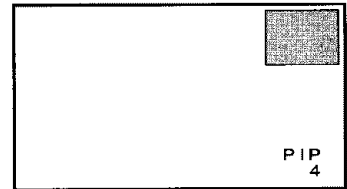
- This TV is capable of displaying two pictures simultaneously. This is called the Picture-in-Picture (or Picture-out-Picture) function. A TV picture or a picture from external source equipment such as a VCR can be displayed as a small picture. Be sure to connect a VCR with the VIDEO/AUDIO cables. (See page 62.)

To display a small picture



To display a TV broadcast picture as a small picture

- Turn on the TV and select the desired program.
- Press **PIP-POP** once to display a small picture.
- Press **PIP CH ▲/▼** to select the desired program for the small picture.

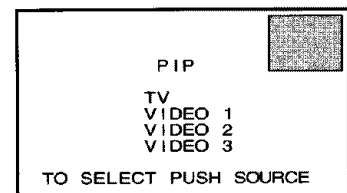


- To make the small picture disappear, press **PIP-POP** again.

To display a picture from an external source as a small picture

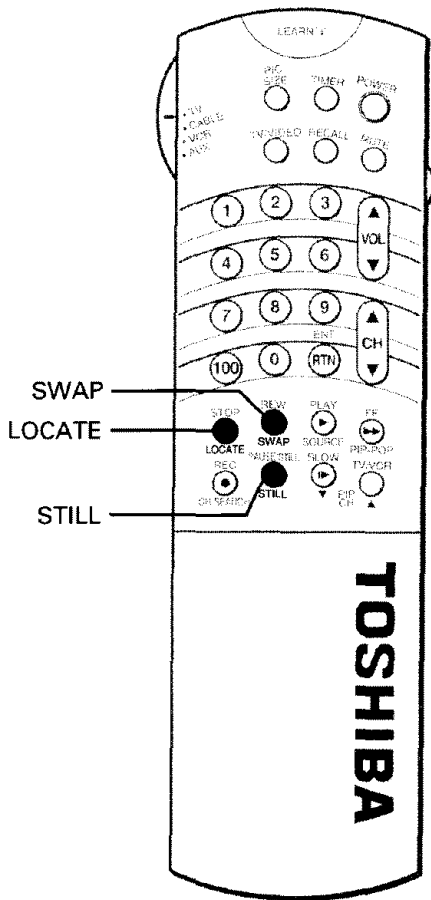
Connect external source equipment for the small picture. (For connection, see page 62.)

- Turn on the TV and select the desired program.
- Press **PIP-POP** to display a small picture.
- Press **SOURCE** repeatedly to select the input source (TV, VIDEO 1, VIDEO 2 or VIDEO 3) for the small picture. The selected mode will be displayed in magenta.



Two-Picture Screen (continued)

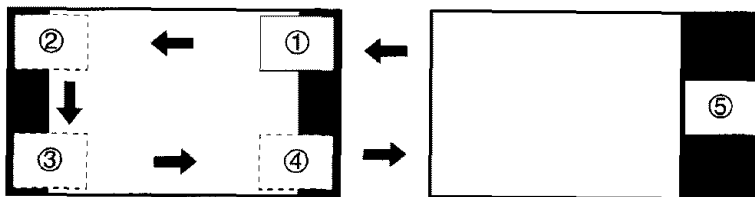
To use advanced functions



ADVANCED OPERATION

To change the position of the small picture

Press **LOCATE** repeatedly when a small picture is displayed. The display position of the small picture will change in order, ① to ⑤.

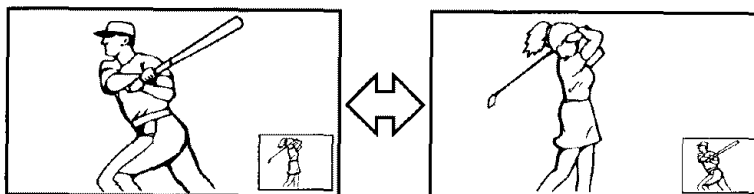


Note:

The position of the small picture in the wide screen mode ("THEATER WIDE" or "FULL") will change in order from ① to ④.

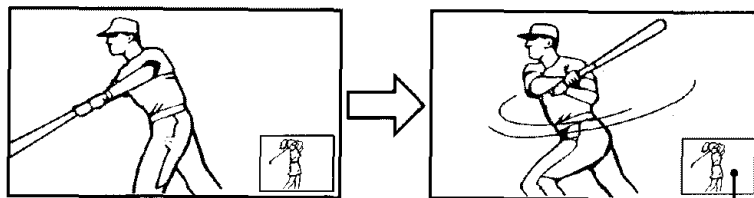
To switch the main and small picture

Press **SWAP** when a small picture is displayed. The main and small pictures will switch. To switch them again, press **SWAP** again.



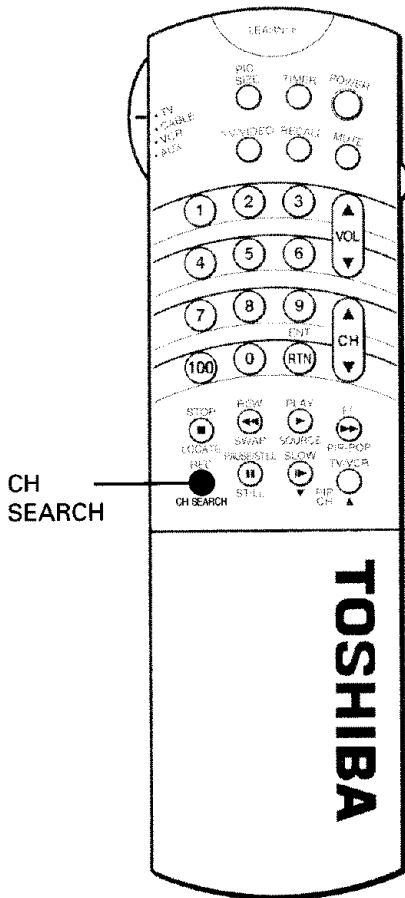
To freeze the small picture

Press **STILL** when a small picture is displayed. The small picture will become a still picture. To return to a moving picture, press **STILL** small again.



Still picture

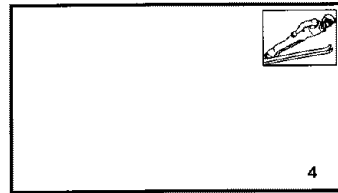
To use advanced functions (continued)



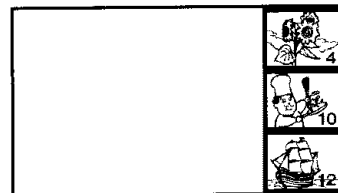
CH SEARCH function

Press **CH SEARCH** to scan the channels programmed in the TV memory.

One-picture search in the P-I-P mode



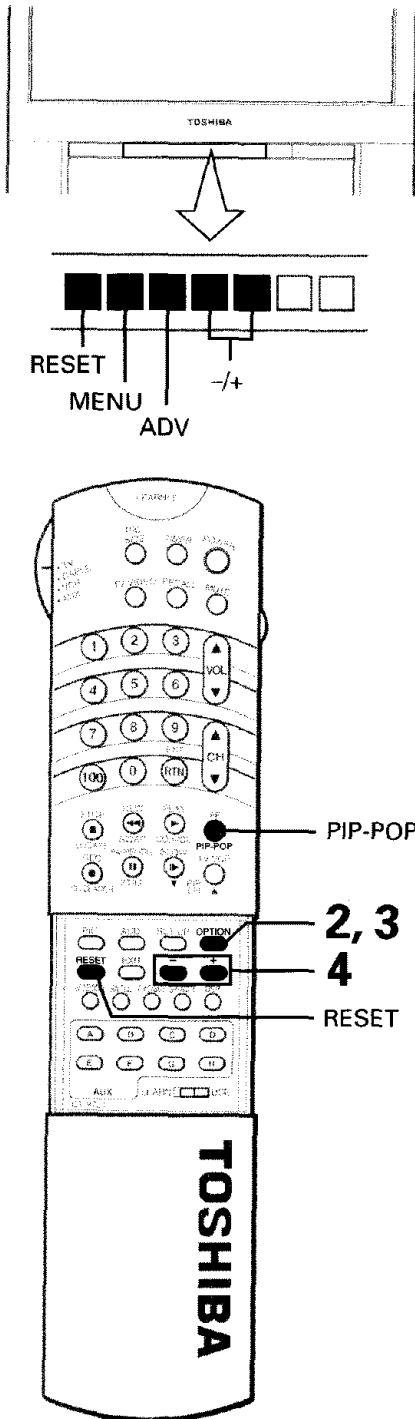
Three-picture search in the P-O-P mode



To cancel the channel search function
Press **CH SEARCH** again.

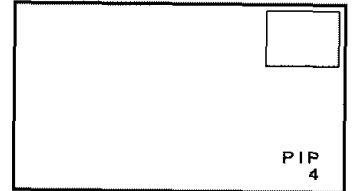
Two-Picture Screen (continued)

To adjust the picture performance of the small picture

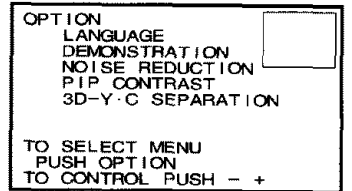


To adjust the contrast of the small picture

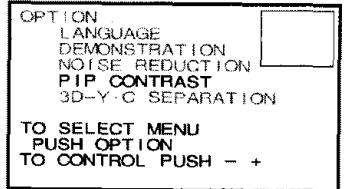
1 Press **PIP-POP** to display a small picture.



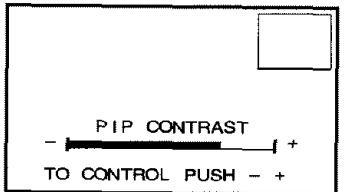
2 Press **OPTION** on the Remote Control (or **MENU** on the TV) to display the **OPTION** menu.



3 Press **OPTION** repeatedly on the Remote Control (or **ADV** on the TV) until "**PIP CONTRAST**" is displayed in magenta.



4 Press **-/+** on the Remote Control or the TV to adjust the contrast level of the small picture.



Note:

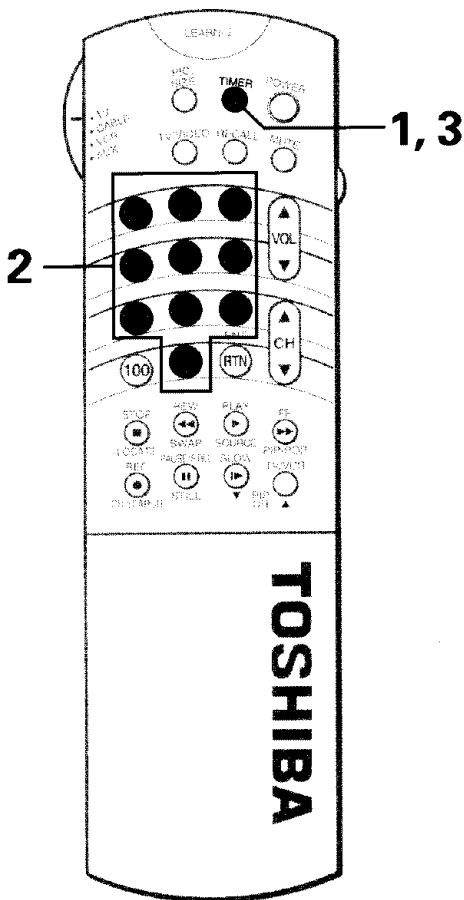
When you press the **RESET** button, your adjustment will automatically be set to the factory-preset level.

CAUTION:

Avoid displaying stationary images on your TV screen for an extended period of time. Stationary patterns generated by PIP-POP display, computer displays, videogames, stock market reports etc. can become permanently ingrained on the picture tube. This damage is not protected by your warranty as it is the result of misuse. If you use your TOSHIBA Television to display still images, it is always advisable to reduce the brightness and contrast settings. Never leave a PIP-POP display, computer display or videogame unattended.

Setting the OFF Timer and the Clock

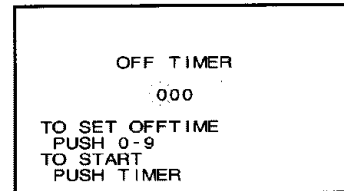
To set the OFF timer/clock



To set the OFF timer

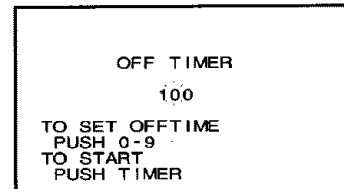
With the OFF timer, you can set the TV to turn off automatically after a pre-determined period of time (every 10 minutes, up to 180 minutes = 3 hours).

- 1 Press **TIMER** to select the **TIMER** mode.

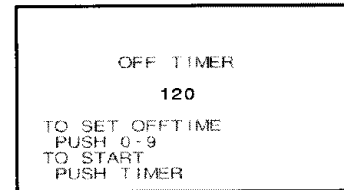


- 2 Press any two Number buttons to enter the length of time you want the TV to stay on. The remaining number(s) to be adjusted will blink continuously.

Example: 120 minutes
Press 1 and 2.



- 3 Press **TIMER** to start the timer. The display color will change from magenta to cyan, and then the display will go off.



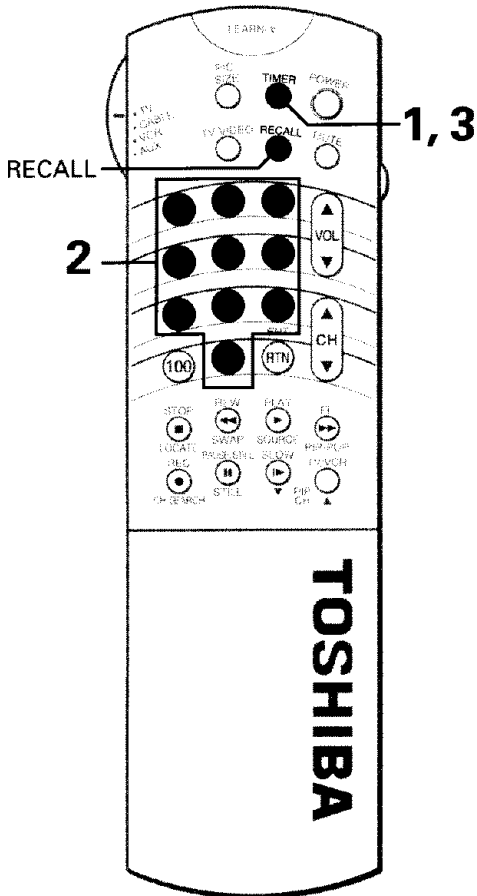
To cancel the OFF timer

Press **POWER** twice, once to turn the TV off and once to turn it on again.

- To display the time remaining, press **TIMER** once. The remaining time will be displayed on the screen.
To erase the display, press **TIMER** twice.

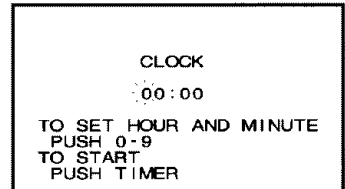
Setting the OFF Timer and the Clock (continued)

To set the OFF timer/clock (continued)



To set the clock

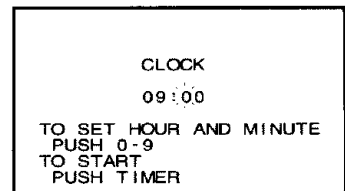
- 1 Press **TIMER** twice to select the **CLOCK** mode.



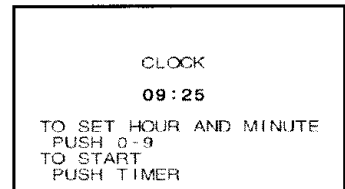
- 2 Press four Number buttons to enter the correct time, after each number position starts to blink.

Example: To set 9:25 p.m.
Press 0, 9, 2 and 5.

- The clock operates on a 12 hour-cycle.



- 3 Press **TIMER** to start the clock. The display color will change from magenta to cyan, and then the display will go off.



To monitor the time
Press **RECALL**.

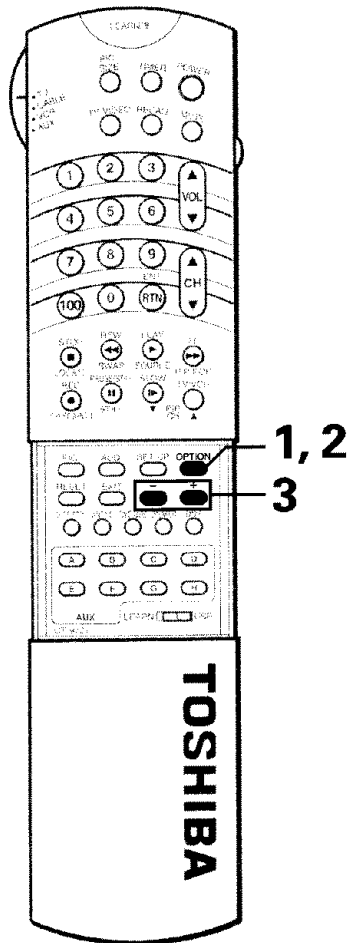
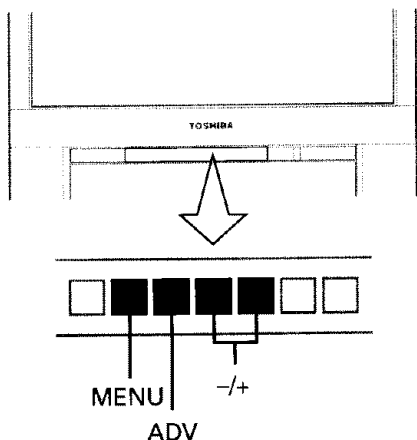
Note:

If the power source for the TV is interrupted (i.e., AC cord unplugged or power failure), the clock will have to be reset. (The time display will show "00:00".)

Changing On-screen Display Language

- Three different languages (ENGLISH, FRENCH and SPANISH) are available for the on-screen displays (adjustment menus, and messages), and you can choose the desired one.

To select a language for on-screen displays



1 Press **OPTION** on the Remote Control (or **MENU** on the TV) to display the **OPTION** menu on the screen.

```
OPTION
LANGUAGE
DEMONSTRATION
NOISE REDUCTION
PIP CONTRAST
3D-Y·C SEPARATION
```

TO SELECT MENU
PUSH OPTION
TO CONTROL PUSH - +

2 Press **OPTION** repeatedly on the Remote Control (or **ADV** on the TV) until "LANGUAGE" is displayed in magenta.

```
OPTION
LANGUAGE
DEMONSTRATION
NOISE REDUCTION
PIP CONTRAST
3D-Y·C SEPARATION
```

TO SELECT MENU
PUSH OPTION
TO CONTROL PUSH - +

3 Press - or + until your desired language is displayed in magenta.

LANGUAGE

ENGLISH
FRENCH
SPANISH

TO SELECT PUSH - +

Example: PICTURE menu display "ENGLISH"

```
PICTURE
CONTRAST
BRIGHTNESS
COLOR
TINT
SHARPNESS
FLESH TONE
PICTURE PREFERENCE
TO SELECT MENU
PUSH PIC
TO CONTROL PUSH - +
```

"FRENCH"

```
IMAGE
CONTRASTE
LUMINOSITE
COULEUR
TEINTE
NETTETE
COULEUR DE LA PEAU
PREFERENCE D IMAGE
APPUYEZ PIP
POUR SELECT MENU
APPUYEZ - + POUR REGLAGE
```

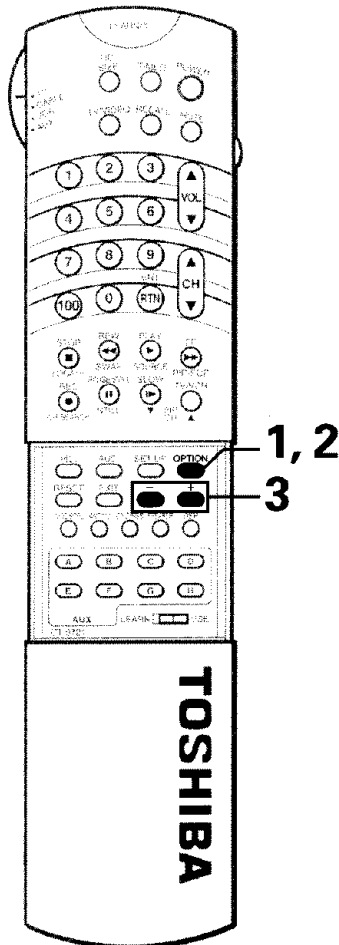
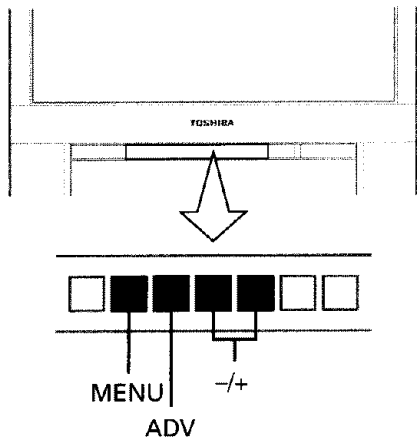
"SPANISH"

```
IMAGEN
CONTRASTE
BRILLO
COLOR
TINTE
NITIDEZ
TONO POR PIEL
PREFERENCIA DE IMAGEN
APRETAR PIP
PARA ESCOGER MENU
APRETAR - + POR CONTROL
```

ADVANCED OPERATION

Activating Auto Demonstration

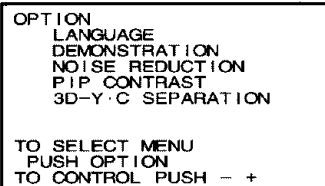
To review on-screen menus and special features



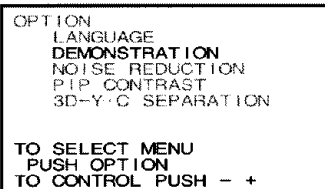
To start the auto demonstration

When this function is activated, your TV will automatically display a variety of its on-screen menus and special features. This function is provided for demonstration purposes only. You may not need to use this function.

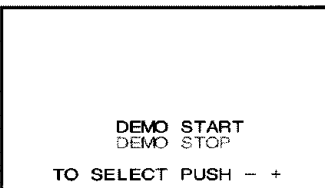
- 1 Press **OPTION** on the Remote Control (or **MENU** on the TV) to display the **OPTION** menu on the screen.



- 2 Press **OPTION** repeatedly on the Remote Control (or **ADV** on the TV) until "DEMONSTRATION" is displayed in magenta.



- 3 Press - or + until "DEMO START" is displayed on the screen in magenta. The on-screen demonstration will start after about 6 seconds.



Note:

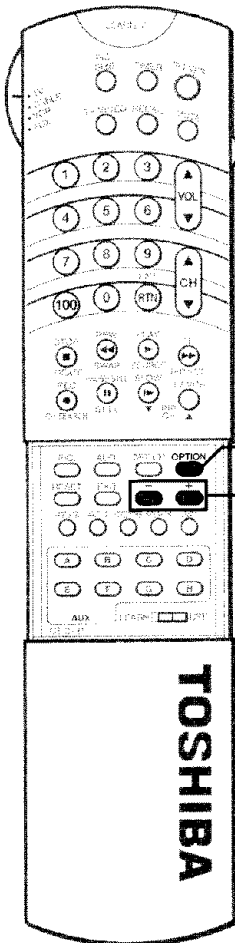
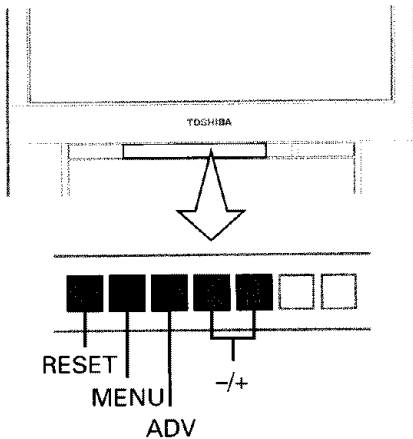
The on-screen demonstration will continue, even if the TV is turned off and on, or any other buttons are pressed.

To stop the demonstration

Select "DEMO STOP".

Turning Noise Reduction On

To reduce picture noise



This function allows you to reduce visible interference in your TV picture. This is useful when receiving a broadcast with a weak signal or playing back a video cassette or disc damaged by repeated use.

- 1 Press **OPTION** on the Remote Control (or **MENU** on the TV) to display the **OPTION** menu.

OPTION
LANGUAGE
DEMONSTRATION
NOISE REDUCTION
PIP CONTRAST
3D-Y·C SEPARATION

TO SELECT MENU
PUSH OPTION
TO CONTROL PUSH - +

- 2 Press **OPTION** repeatedly on the Remote Control (or **ADV** on the TV) until "NOISE REDUCTION" is displayed in magenta.

OPTION
LANGUAGE
DEMONSTRATION
NOISE REDUCTION
PIP CONTRAST
3D-Y·C SEPARATION

TO SELECT MENU
PUSH OPTION
TO CONTROL PUSH - +

- 3 Press **-** or **+** until "NOISE REDUCTION ON" is displayed on the screen in magenta.

NOISE REDUCTION ON
NOISE REDUCTION OFF
TO SELECT PUSH - +

To deactivate this function
Select "NOISE REDUCTION OFF".

*** 3D-Y·C SEPARATION**
3D-Y·C means "3-Dimensional luminance signal (Y)/chrominance signal (C) Separation circuit". It separates Y and C signals to prevent them from interfering with one another, thereby improving picture (especially color) quality. Select "3D-Y·C SEPARATION ON" for optimum picture quality.

3D-Y·C SEPARATION ON
3D-Y·C SEPARATION OFF
TO SELECT PUSH - +

Note:

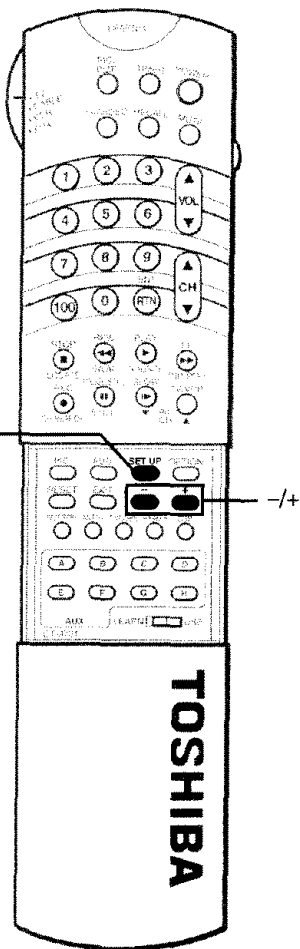
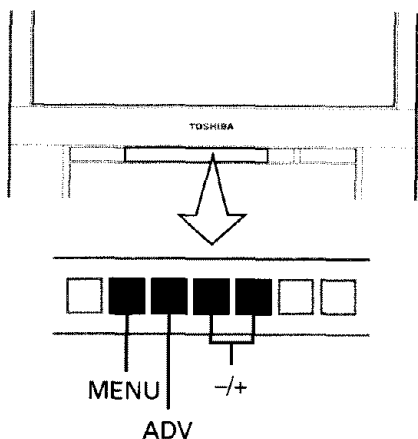
This feature will automatically be set to "ON" when you turn the TV on.

ADVANCED OPERATION

Captioning Channels

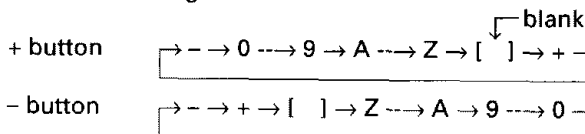
- This feature allows you to enter a 4 letter channel identifier of your choice that will appear over the channel number display. The caption can be anything you want (for example the station call letters).

To caption channels



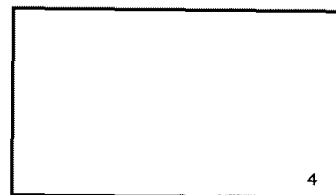
Letters of alphabet, numbers and other graphic symbols are available for *captioning*.

Each time you press the - or + button, the character to be displayed will change in the following order.

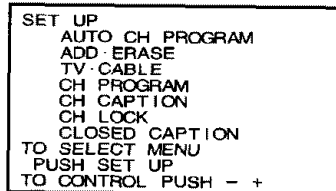


- Select the channel you want to caption.

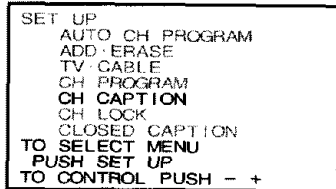
Example: To assign "ABCD" to channel 4.



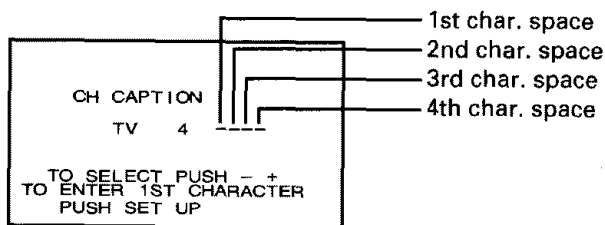
- Press **SET UP** on the Remote Control (or **MENU** on the TV) to display the **SET UP** menu on the screen.



- Press **SET UP** repeatedly, on the Remote Control (or **ADV** on the TV) until "CH CAPTION" is displayed in magenta.



- Press - or + to call up the caption setting mode display shown below on the screen.

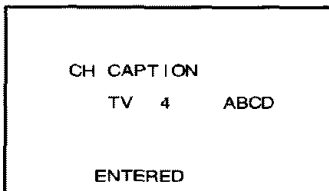


To caption channels (continued)

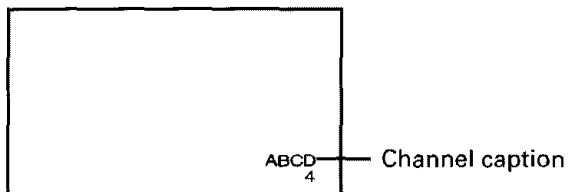
- 5 Press **-** or **+** to put a character "A" in the 1st character space. Press the button until the character you want appears on the screen.

- 6 Press **SET UP** once to enter the 1st character and to move to the next character space.

- 7 Repeat steps 5 and 6 to enter the 2nd, 3rd and 4th characters "B", "C", "D".
When the on-screen message at the right appears, the channel caption has been stored in the memory.



- 8 Repeat steps 1 through 7 for other channels.
You can caption up to 32 channels. The caption will appear when you turn the TV on, select a channel, or press the **RECALL** button.



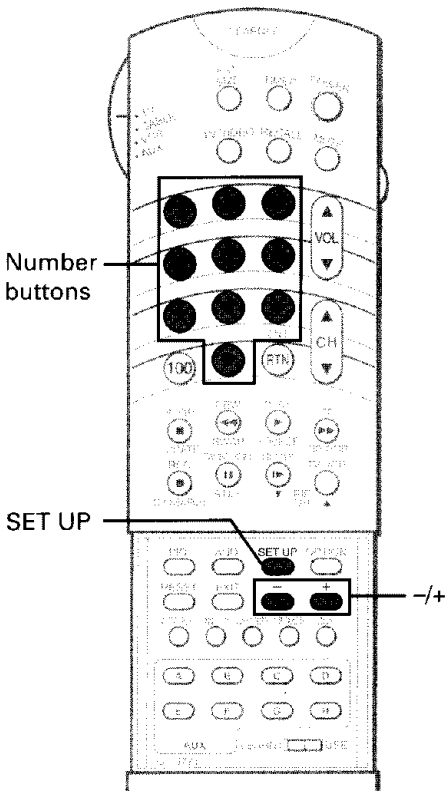
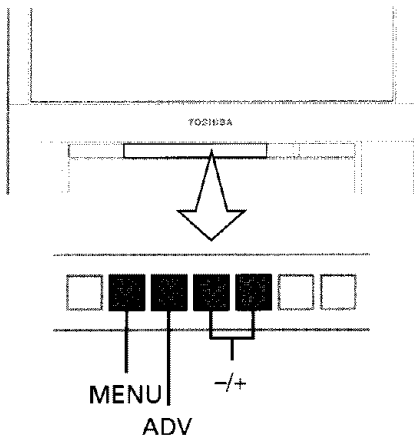
To clear the captioning

- 1 Select the channel which has the caption you want to erase.
- 2 Call up the channel caption setting mode display following steps 2 through 4 in the previous page.
- 3 Enter "[blank]" or "-" in all character spaces.

Locking Channels

- With this function, you can lock out specific channels (for example a channel that you do not want your children to watch) by entering your own 4-digit code. The TV will not be able to tune them for the next 24 hours, unless you cancel parental control. This TV has 4 memory spaces total for the TV mode and CABLE mode respectively.

To lock out channels

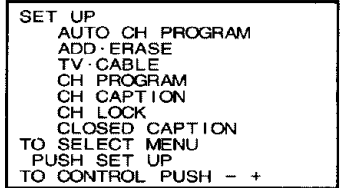


Note:
If different code numbers are used when you lock out a channel, the last one has priority over the preceding ones.

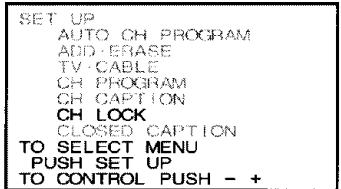
1 Select a channel you want to lock out.



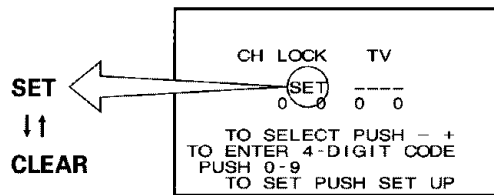
2 Press **SET UP** on the Remote Control (or **MENU** on the TV) to display the SET UP menu on the screen.



3 Press **SET UP** repeatedly on the Remote Control (or **ADV** on the TV) until "CH LOCK" is displayed in magenta.



4 Press **-** or **+** to call up the channel lock adjustment mode display shown below. Each time you press the button, "SET" and "CLEAR" alternate. Select "SET".



5 Press Number buttons (0 - 9) to enter a 4-digit code. The numbers you enter will replace the dashes in the display. **Pick a number that is easy to remember.**

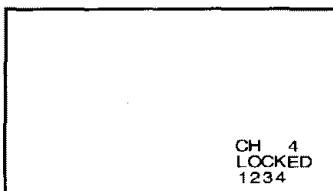
Example: To enter "1234".
Press 1, 2, 3 and 4 in order.

1 ----> **12** ----> **123** ----> **1234**

ADVANCED OPERATION

To lock out channels (continued)

- 6** Press **SET UP** to lock out the channel. The display at the right will appear on the screen for about 4 seconds.



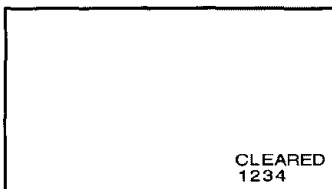
- 7** Repeat steps 1 to 6 for other channels.

To restore channels

- 1** Select "CLEAR" following steps 2 to 4 on the previous page.

- 2** Press the 4-digit code used to lock out the channels with the Number buttons.

- 3** Press **SET UP**. If you have entered the correct code, the display shown at the right appears.



If a wrong code has been entered

These messages appear. Try to enter the correct code again.



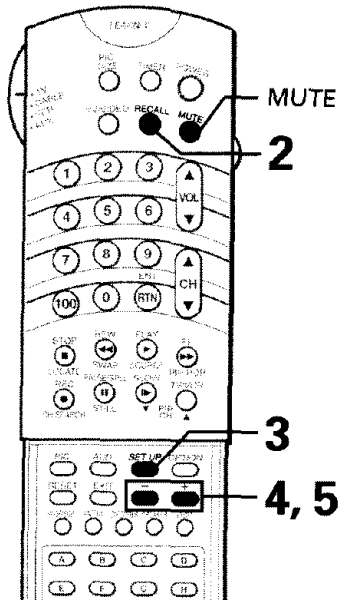
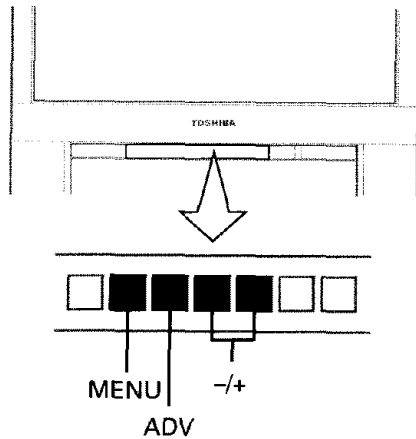
If you want to know the channels you have locked out

Call up the channel lock adjustment mode using the **SET UP** button and **-/+** buttons.

Operating the Closed Captioning Feature

- A caption is a printed version of the dialogue or sound effects of a program.

To use Closed Captioning



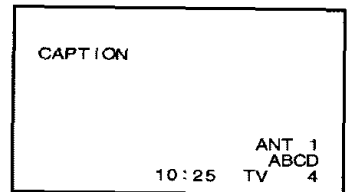
To deactivate this function
Select the "OFF" mode in the closed caption select mode display.

To view captions

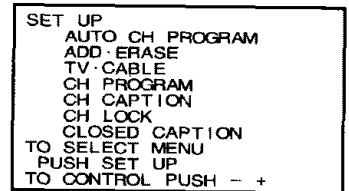
Captions will appear at either the top or bottom of the screen during captioned broadcasts as shown at the left. Captioning is especially helpful for hearing impaired individuals.

1 Select the desired program.

2 Press **RECALL** to check if the program is being captioned. If it is, the word "CAPTION" is displayed on the screen.



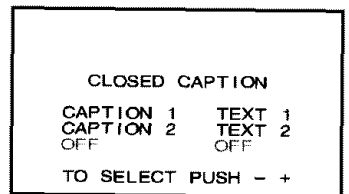
3 Press **SET UP** repeatedly on the Remote Control (or **ADV** on the TV) until "CLOSED CAPTION" is displayed in magenta.



4 Press **-** or **+** to call up the closed caption mode display. Usable selections are displayed in yellow.

Note:

If you select this menu immediately after changing to a closed-captioned channel, all the items may be displayed in cyan.



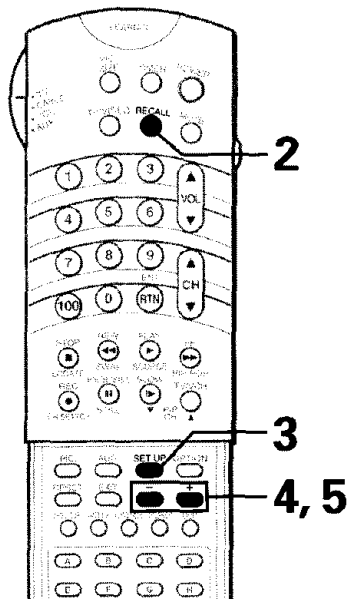
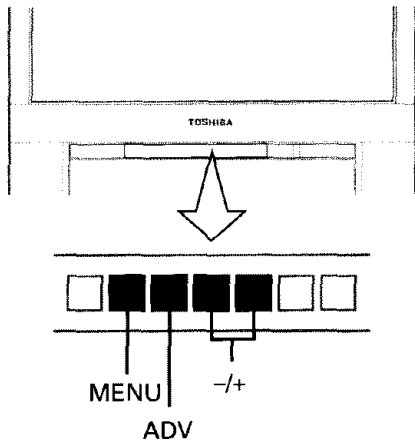
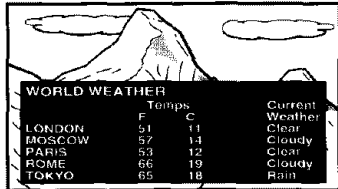
5 Press **-** or **+** until "CAPTION 1" or "CAPTION 2" is displayed in magenta.

The CAPTION 2 mode may be utilized for alternate languages if they are being transmitted.

Notes:

- A closed captioned signal may not be decoded in the following situations.
 - When a video tape has been dubbed.
 - When the signal reception is weak.
 - When the signal reception is non-standard.
- When you press the MUTE button, "CAPTION 1" mode will automatically be selected while muting the sound.

To use text information



To deactivate this function

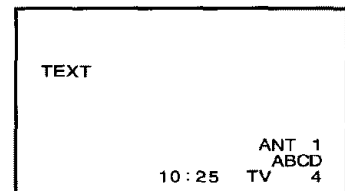
Select the "OFF" mode in the closed caption select mode display.

To view text

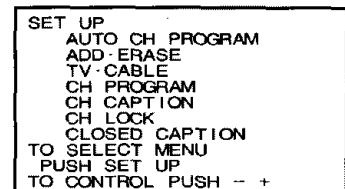
Text is information that is presented using from a half to a full television screen. It is usually not related to the program.

For example, it could be a listing of the closed-captioned programs, news, weather information or stock market reports.

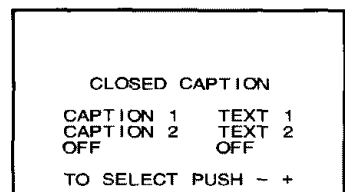
- 1 Select the desired program.
- 2 Press **RECALL** to check if the program includes TEXT information. If it does, the word "TEXT" is displayed on the screen.



- 3 Press **SET UP** repeatedly on the Remote Control (or **ADV** on the TV) until "CLOSED CAPTION" is displayed in magenta.



- 4 Press - or + to call up the closed caption select mode display. Usable selections are displayed in yellow.



Note:

If you select this menu immediately after changing to a closed-captioned channel, all the items may be displayed in cyan.

- 5 Press - or + until "TEXT 1" or "TEXT 2" is displayed in magenta.

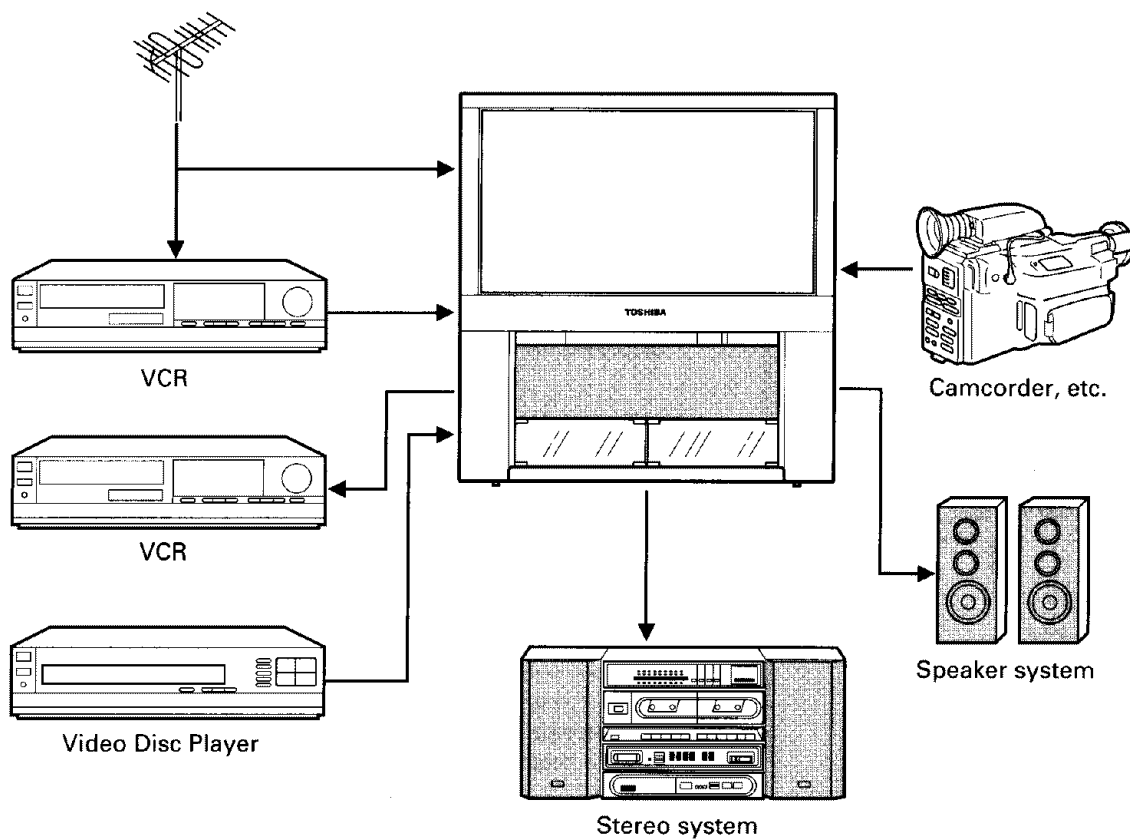
Note:

When you select the "TEXT" mode, the TEXT screen will always be displayed.

However, if TEXT character signals are not transmitted, the characters are not displayed.

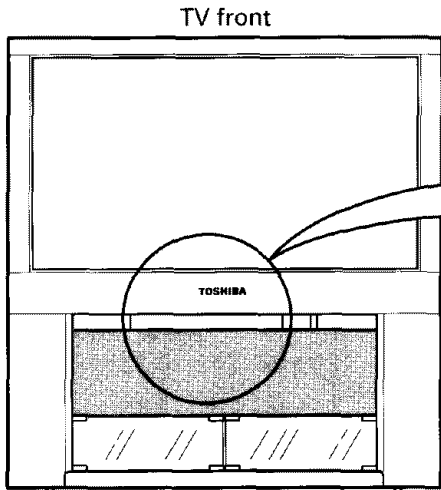
External Equipment Connections

To connect video/audio equipment

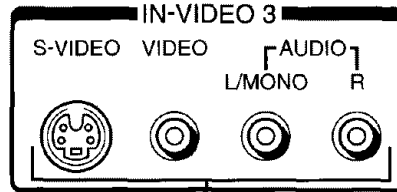


- Refer to the owner's manual of the equipment to be connected as well.
- When connecting the TV to other equipment, first turn off their power.
- The S-VIDEO INPUT jack has priority over the phono-type (yellow) VIDEO jack when both are used.
- If you connect monaural sound equipment, connect the audio output of the equipment to the L/MONO jack of the VIDEO 1, VIDEO 2 or VIDEO 3 INPUT jacks on the TV.
- The S-VIDEO INPUT jack accepts the SEPARATED Luminance/Chrominance (Y/C) signals conforming to the NTSC standard.

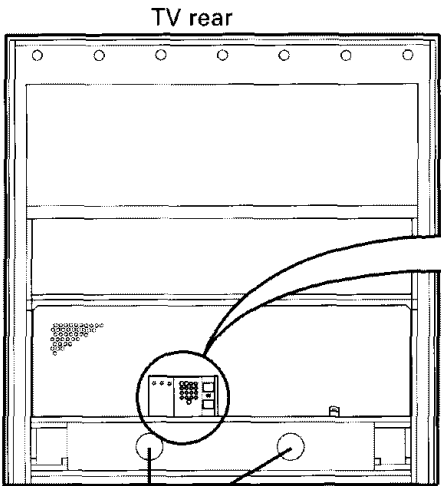
Monitor panel



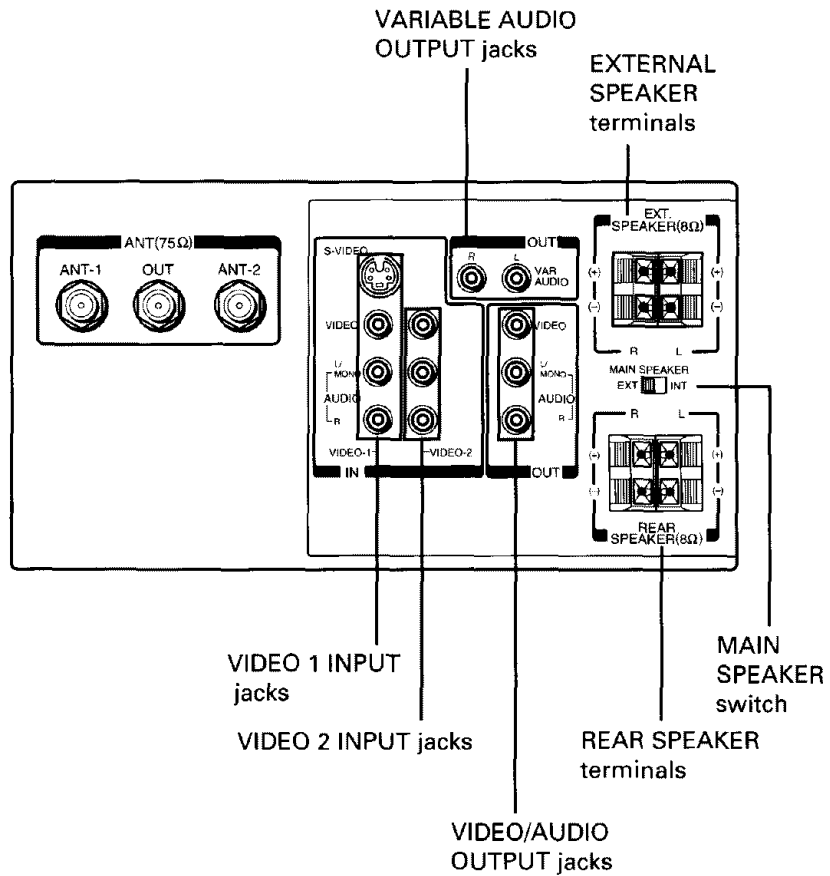
Behind the door



VIDEO 3 INPUT jacks



These openings are for connecting the VCR or other installed equipment.

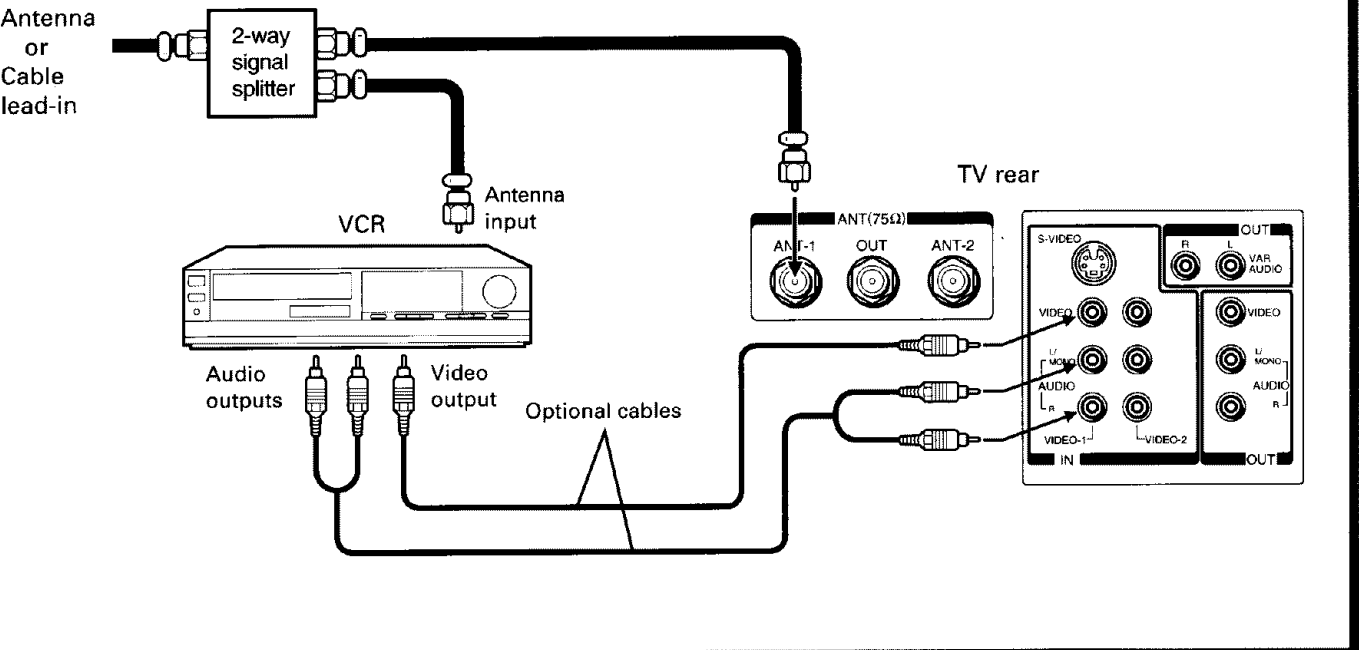


CONNECTING OTHER EQUIPMENT

External Equipment Connections (continued)

To connect a standard VCR

Connect VIDEO 1 or VIDEO 2 INPUT jacks on the TV rear panel to the video/audio output jacks of VCR, Video Disc Player, etc. for playback of video material.

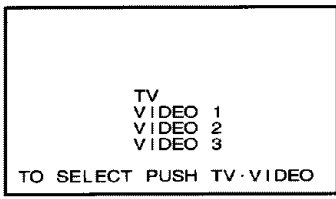


To select video input source

Press **TV/VIDEO** on the Remote Control (or **ANT/VIDEO** on the TV) repeatedly to select the appropriate source. Each time you press the button, the TV, VIDEO 1, VIDEO 2 or VIDEO 3 source will be selected in order. The selected source will be displayed in magenta.

Note on the VIDEO 2 INPUT jacks
 The VIDEO 2 INPUT jacks can also be used for connecting a second piece of video equipment with video/audio outputs. To view video from equipment connected to the VIDEO 2 INPUT jacks, select "VIDEO 2".

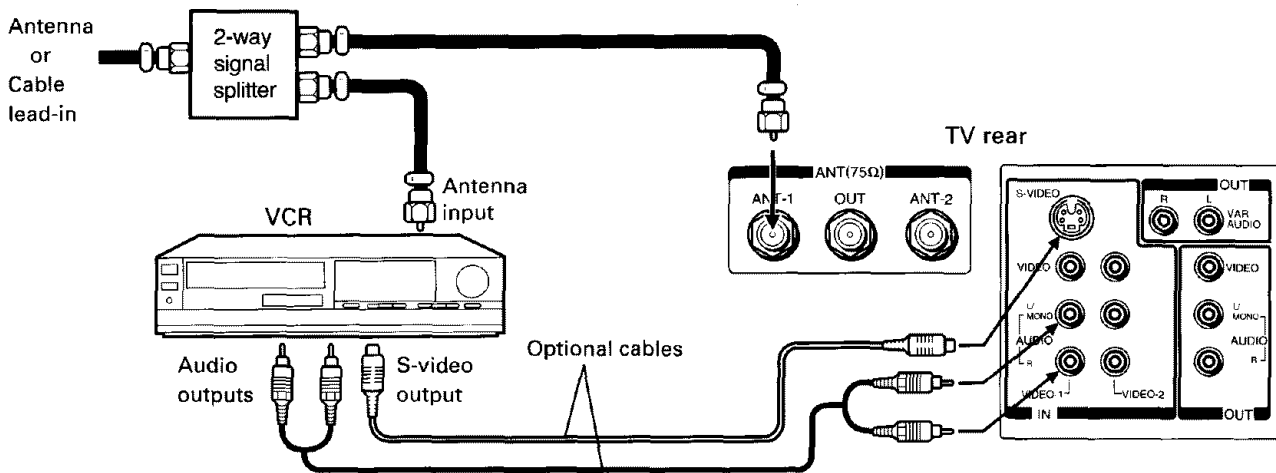
Note on the VIDEO 3 INPUT jacks
 The VIDEO 3 INPUT jacks on the TV front panel are convenient for connecting portable video/audio equipment. To view video from equipment connected to the VIDEO 3 INPUT jacks, select "VIDEO 3".



CONNECTING OTHER EQUIPMENT

To connect a VCR with an S-VIDEO jack

If you connect a VCR with an S-video connector to the "S-VIDEO" jack on the TV rear, you must also connect the audio cables to the AUDIO jacks of "VIDEO 1 INPUT" on the TV rear. The S-video cable supplies video signals only. Audio signals are separate.



To select video input source

- 1** Turn on the TV and the VCR.
- 2** Press **TV/VIDEO** on the Remote Control or **ANT/VIDEO** on the TV to select "VIDEO 1" in the input source selecting mode.
- 3** Operate your VCR normally.

Notes:

- If you connect a monaural VCR, connect the audio output of the VCR to the L/MONO jack of the VIDEO 1 INPUT jacks on the TV.
- Do not connect video equipment to both the "S-VIDEO" jack and the "VIDEO" jack of the VIDEO 1 INPUT jacks at the same time.
- The S-VIDEO INPUT jack accepts SEPARATED Luminance/Chrominance (Y/C) signals conforming to the NTSC standard.

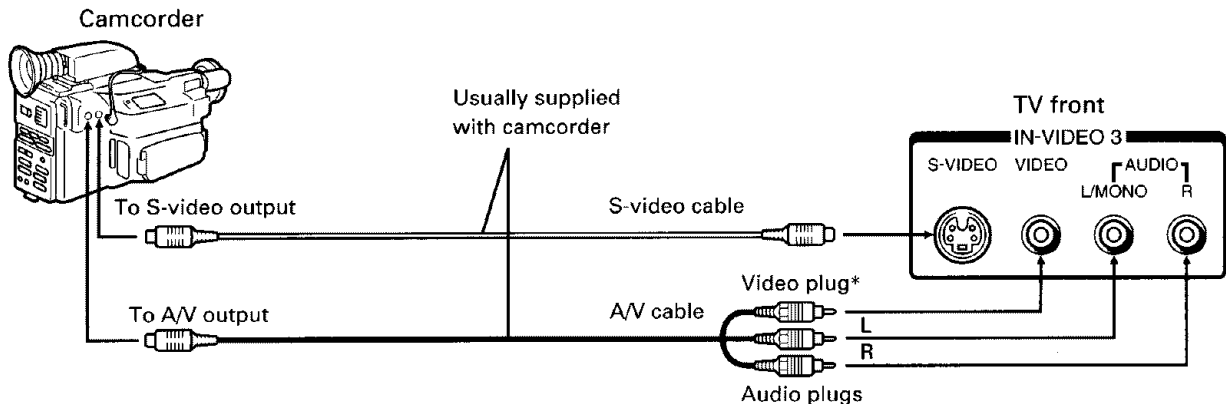
External Equipment Connections (continued)

To connect a camcorder

This connection allows you to play back tapes in the camcorder and watch them on the TV.

—If you have a camcorder with an S-video jack, connect the S-video cable to the S-VIDEO INPUT jack of the “VIDEO 3 INPUT” jacks.

—If you have a standard camcorder, connect the video cable to the video jack of the “VIDEO 3 INPUT” jacks. With either video connection, connect the audio cables.



To select video input source

To operate your TV normally, see instructions supplied with the connected camcorder.

- 1 Turn on the TV and the camcorder.
- 2 Press **TV/VIDEO** on the Remote Control or **ANT/VIDEO** on the TV to select “VIDEO 3” in the input source selecting mode.
- 3 Operate your camcorder normally.

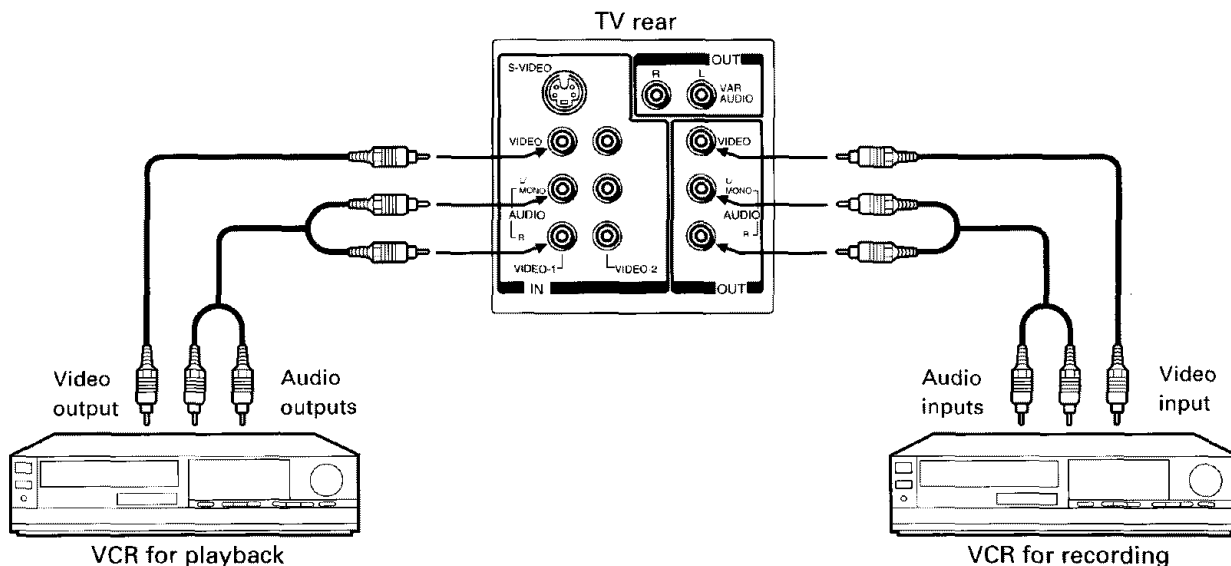
Notes:

- * When the S-video cable is connected to the S-video INPUT jack, the video plug does not have to be connected.
- If you connect a monaural camcorder, connect the audio output of the VCR to the L/MONO jack of the VIDEO 3 INPUT jacks on the TV.

To dub/edit video tapes using two VCR's

To connect equipment for dubbing/editing

- 1 Connect the output jacks on a VCR for playback to the input jacks (VIDEO 1 INPUT, VIDEO 2 INPUT or VIDEO 3 INPUT) on the TV.
- 2 Connect the output jacks on the TV to the input jacks of the VCR for recording.



Note: Do not connect one VCR to the output and input jacks on the TV at the same time.

To monitor dubbing/editing

- 1 Turn on the TV and both VCR's.
- 2 Press **TV/VIDEO** on the Remote Control or **ANT/VIDEO** on the TV to select "VIDEO 1".
- 3 Set the VCR for recording to record mode and the VCR for playback to play.
- 4 You can view the video tape from the VCR for playback on the TV screen while dubbing it with the VCR for recording.

CAUTION:

The unauthorized recording of television programs, video tapes and other materials may infringe upon the provisions of the copyright laws.

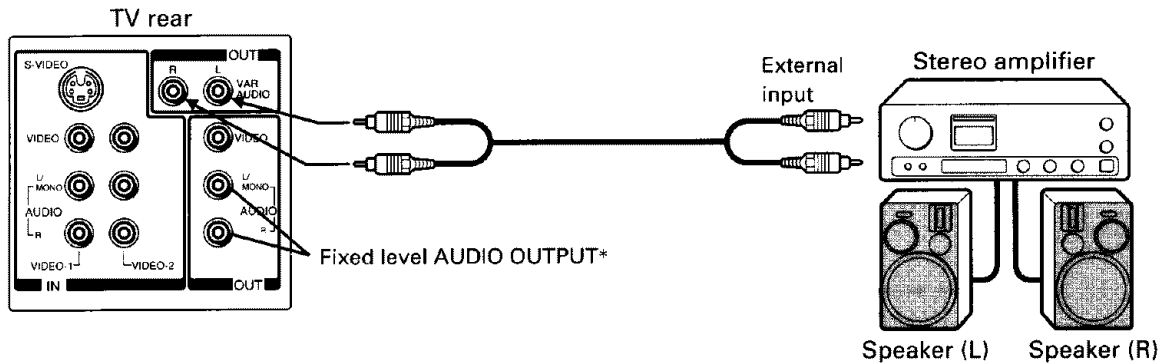
Notes:

- The input switch of a VCR is normally in the TV position. Change the switch of the recording VCR to the LINE or CAMERA position when using the video/audio inputs of the VCR as above. Some VCR's automatically switch when the cables are plugged into the video/audio inputs.
- The PIP picture cannot be output from the VIDEO OUTPUT.

External Equipment Connections (continued)

To connect an audio amplifier

Connect the VARIABLE AUDIO OUTPUT jacks to the external input jacks on the stereo amplifier. You can control the audio equipment using the Remote Control for this TV.



* The "Fixed level" audio output from the VIDEO/AUDIO OUTPUT jacks is also available for connecting an audio cassette recorder (or amplifier) to record audio from the TV. This constant audio signal is not affected by pressing the VOLUME controls on the TV or the Remote Control.

To disconnect the built-in speakers

1 Press **AUD** on the Remote Control to display the AUDIO menu on the screen.

```
AUDIO
MTS
BASS
TREBLE
BALANCE
SPEAKERS

TO SELECT MENU
PUSH AUD
TO CONTROL PUSH - +
```

2 Press **AUD** until "SPEAKERS" is displayed in magenta.

```
AUDIO
MTS
BASS
TREBLE
BALANCE
SPEAKERS

TO SELECT MENU
PUSH AUD
TO CONTROL PUSH - +
```

3 Press **-/+** to select the SPEAKERS ON/OFF mode on-screen display at the right.

```
SPEAKERS ON
SPEAKERS OFF

TO SELECT PUSH - +
```

4 Press **-/+** until "SPEAKERS OFF" is displayed in magenta. The built-in speakers will be disconnected.

```
SPEAKERS ON
SPEAKERS OFF

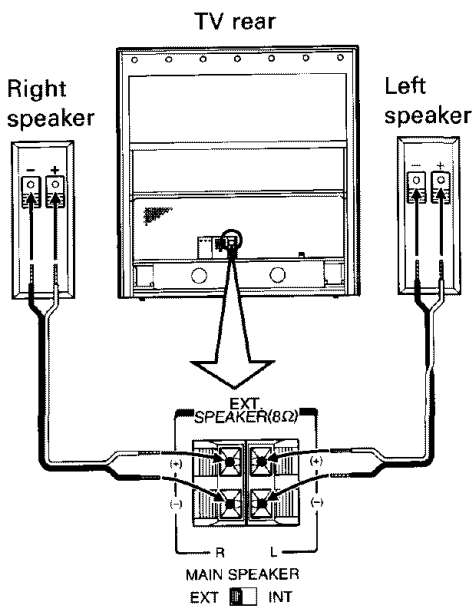
TO SELECT PUSH - +
```

To use the built-in speakers again
Select "SPEAKERS ON" in step 4 above.

Note:
Make sure the volume control of your stereo amplifier is set to a moderate listening level.

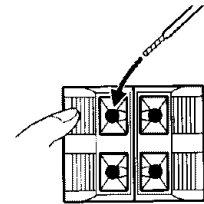
To connect external speakers

Before connecting the speakers, turn the TV off.



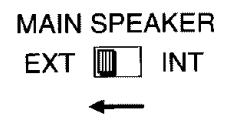
1 Connect one end of the speaker cable to the external speaker.

2 Connect the other end of the speaker cable to the TV. While depressing the button, insert the wire. Then, release the button. Match the right and left channels and +/- polarities of the TV speaker terminals and external speakers.



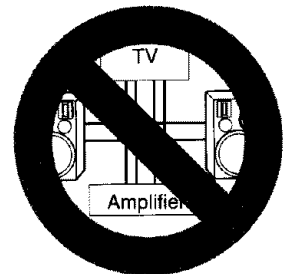
3 Connect another external speaker following steps 1 and 2 above.

4 Set the MAIN SPEAKER switch to "EXT". The built-in TV speakers are disconnected.



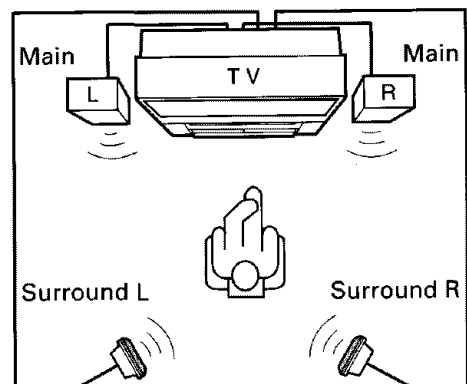
CAUTIONS:

- Do not connect external speakers to more than one audio source at a time. You will damage your equipment if you connect the same speaker system to both the TV and the amplifier.
- Use only external speakers with an impedance rating of 8 ohms and input power of 14 W or greater.



Speaker positioning

To enjoy the sound of the DSP Surround or Dolby Pro Logic Surround, locate the external (main) speakers and supplied Surround Speakers as shown at the right. See page 41 for details.



Before Calling Service Personnel

- Before calling service personnel, please check the following chart for the possible cause of the problem you are experiencing.

Symptom	Check	Adjustments
No picture, no sound	<ul style="list-style-type: none"> • Be sure power cord is plugged in. • May be station trouble. • Check antenna connections. • Check antenna for broken wires. 	<ul style="list-style-type: none"> • Press POWER button. • Try another channel. • Re-orient antenna.
No sound, picture OK	<ul style="list-style-type: none"> • May be station trouble. • Check if SPEAKER ON/OFF function (see page 66) or MAIN SPEAKER switch (see page 67) is properly set. 	<ul style="list-style-type: none"> • Try another channel. • Adjust VOLUME.
Poor sound, picture OK	<ul style="list-style-type: none"> • May be station trouble. • May be local interference from appliance. • Check antenna connections. 	<ul style="list-style-type: none"> • Try another channel. • Adjust VOLUME. • Adjust BASS, TREBLE, or BALANCE control. • Re-orient antenna.
Poor picture, sound OK <ul style="list-style-type: none"> • Snowy picture • Lines in picture • Distorted picture • Weak picture 	<ul style="list-style-type: none"> • May be station trouble. • May be local interference from appliance. • Check antenna connections. • Check antenna for broken wires. 	<ul style="list-style-type: none"> • Try another channel. • Adjust BRIGHTNESS. • Adjust CONTRAST. • Adjust SHARPNESS. • Re-orient antenna.
Poor reception of broadcast channels	<ul style="list-style-type: none"> • If VCR is connected, check TV/VCR switch. • Check antenna connections. • Check antenna for broken wires. 	<ul style="list-style-type: none"> • Try another channel. • Re-orient antenna.
Unable to select a certain channel	<ul style="list-style-type: none"> • That channel may be locked out with the CH LOCK function (see page 56). • Check if TV•CABLE function is properly set. (See page 24.) 	<ul style="list-style-type: none"> • Try another channel.
Multiple images (ghosts)	<ul style="list-style-type: none"> • May be station trouble. • Check antenna connections. 	<ul style="list-style-type: none"> • Try another channel. • Re-orient antenna.
Poor color or no color	<ul style="list-style-type: none"> • May be station trouble. • May be local interference from appliance. • Check if station is broadcasting in color. • Check antenna connections. • Check antenna for broken wires. 	<ul style="list-style-type: none"> • Try another channel. • Adjust TINT. • Adjust COLOR. • Re-orient antenna.
Weak and noisy stereo program	<ul style="list-style-type: none"> • Check antenna connections. • Check antenna for broken wires. 	<ul style="list-style-type: none"> • Select the MONAURAL mode. (See page 38.) • Re-orient antenna.
No stereo or SAP sound from a known MTS broadcast	<ul style="list-style-type: none"> • Check if MTS function is properly set. 	<ul style="list-style-type: none"> • Select STEREO or SAP mode. (See page 38.)
Remote Control does not work	<ul style="list-style-type: none"> • Check if TV/CABLE/VCR/AUX switch is properly set. • Be sure power cord is plugged in. • Check battery in Remote Control. 	<ul style="list-style-type: none"> • Change batteries.

Specifications

TELEVISION SYSTEM	NTSC standard
CHANNEL COVERAGE	VHF: 2 through 13 UHF: 14 through 69 Cable TV: mid band (A-8 through A-1, A through I) super band (J through W) hyper band (AA through ZZ, AAA, BBB) ultra band (65 through 94, 100 through 125)
POWER SOURCE	120 V AC, 60 Hz
POWER CONSUMPTION	220 W (average)
AUDIO POWER	Front: 14 W + 14 W Center: 10 W + 10 W Rear: 10 W + 10 W
SPEAKER TYPE	Main: Two 6-1/4 inches round Surround: Two 4 inches round
VIDEO/AUDIO TERMINALS	S-VIDEO INPUT (VIDEO 1/VIDEO 3) Y-INPUT: 1 V (p-p), 75 ohm, negative sync. C-INPUT: 0.286 V (p-p) (burst signal), 75 ohm VIDEO 1/VIDEO 2/VIDEO 3 INPUT VIDEO: 1 V (p-p), 75 ohm, negative sync. AUDIO: 150 mV (rms) (30% modulation, 47 kohm) VIDEO/AUDIO OUTPUT VIDEO: 1 V (p-p), 75 ohm, negative sync. AUDIO: 150 mV (rms) (30% modulation, 4.7 kohm) VARIABLE AUDIO OUTPUT 0–350 mV (rms) (30% modulation, 4.7 kohm) EXTERNAL SPEAKER TERMINALS Accept speakers of impedance 8 ohm, input power 14 W or greater REAR SPEAKER TERMINALS Accept the supplied Surround Speakers only
DIMENSIONS	Width: 55 inches (1395 mm) Height: 59 inches (1497 mm) Depth: 25 1/4 inches (641 mm)
MASS	357 lbs (162 kg)

Design and specifications are subject to change without notice.

LIMITED UNITED STATES WARRANTY

Toshiba America Consumer Products, Inc. ("TACP") and Toshiba Hawaii Inc. ("THI") make the following limited warranties. These limited warranties extend to the original consumer purchaser or any person receiving this set as a gift from the original consumer purchaser and to no other purchaser or transferee.

Limited One (1) Year Warranty

TACP and THI warrant this product and its parts against defects in materials or workmanship for a period of one (1) year after the date of original retail purchase. During this period, TACP and THI will repair a defective product or part, without charge to you. Authorized TACP/THI Service Station Personnel will come to your home when warranty service is required. Depending on the type of repair required, the service will either be performed in your home or the set will be taken to the authorized TACP/THI service station for repair and returned to your home at no cost to you.

Limited Two (2) Year Warranty of Picture Tube

TACP and THI further warrant the picture tube in this product against defects in materials or workmanship for a period of two (2) years after the date of original retail purchase. During this period, TACP and THI will replace a defective picture tube without charge to you, except that if a defective picture tube is replaced after one (1) year from the date of the original retail purchase, you pay labor charges involved in the replacement.

Owner's Manual and Registration Card

You should read this owner's manual thoroughly before operating this product. You should also insure that your name and address are on file as owner of a TACP/THI product by completing and mailing the enclosed registration card within ten days after you, or the person who has given you this product as a gift, purchased this product. This is one way to

enable TACP/THI to provide you with better customer service and improved products. Failure to return the card will not affect your rights under this warranty so long as you retain other proof of purchase such as a bill of sale.

Your Responsibility

The above warranties are subject to the following conditions:

- (1) You must retain your bill of sale or provide other proof of purchase.
- (2) All warranty servicing of this product must be made by an Authorized TACP/THI Service Station.
- (3) **These warranties are effective only if the product is purchased and operated in the U.S.A.**
- (4) Labor service charges for set installation, set up, adjustment of customer controls and installation or repair of antenna systems are not covered by this warranty. Reception problems caused by inadequate antenna systems are your responsibility.
- (5) Warranties extend only to defects in materials or workmanship as limited above and do not extend to any product or parts which have been lost or discarded by you or to damage to products or parts caused by misuse, accident, improper installation, improper maintenance or use in violation of instructions furnished by us; or to units which have been altered or modified without authorization of TACP/THI or to damage to products or parts thereof which have had the serial number removed, altered, defaced or rendered illegible.

Step By-Step Procedures – How to Obtain Warranty Service

If, after following all of the operating instructions in this manual and checking the section "BEFORE CALLING SERVICE PERSONNEL", you find that service is needed:

- (1) Contact one of the TACP/THI Service Centers listed below for warranty service or call the TACP toll free number **800-631-3811** within thirty (30) days after you find a defective product or part to find the nearest TOSHIBA Authorized Service Station or authorized TOSHIBA Dealer.
- (2) Please present your bill of sale or other proof to the Authorized Service Station. Authorized TACP/THI Service Station Personnel will come to your home when warranty service is required. Depending on the type of repair required, the service will either be performed in your home or the set will be taken to the authorized TACP/THI service station for repair and returned to your home at no cost to you.
- (3) If you have any question about service, please contact one of the following TACP/THI service Centers:

IN THE CONTINENTAL UNITED STATES
Should your unit require service, Call



NORTHEAST	MIDWEST	WEST	SOUTHEAST	SOUTHWEST	HAWAII
82 Totowa Road, Wayne, New Jersey 07470	1010 Johnson Drive, Buffalo Grove, Illinois 60089-6900	5490 E. Francis St., Ontario, California 91761	6115 Jimmy Carter Blvd., Suite C2, Norcross, Georgia 30071-4607	1421 Champion Drive Suite 304, Carrollton, Texas 75006	327 Kamakee Street, Honolulu, Hawaii, HI 96814

ALL WARRANTIES IMPLIED BY STATE LAW, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE EXPRESSLY LIMITED TO THE DURATION OF THE LIMITED WARRANTIES SET FORTH ABOVE. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. **WITH THE EXCEPTION OF ANY WARRANTIES IMPLIED BY STATE LAW AS HEREBY LIMITED, THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, GUARANTEES, AGREEMENTS AND SIMILAR OBLIGATIONS OF MANUFACTURER OR SELLER WITH RESPECT TO THE REPAIR OR REPLACEMENT OF ANY PRODUCT OR PARTS. IN NO EVENT SHALL TACP OR THI BE LIABLE FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES.** Some states do not allow the exclusion or limitation of incidental or consequential damages so the above limitation may not apply to you.

No person, agent, distributor, dealer, service station or company is authorized to change, modify or extend the terms of these warranties in any manner whatsoever. The time within which an action must be commenced to enforce any obligation of TACP and THI arising under this warranty or under any statute, or law of the United States or any state thereof, is hereby limited to one year from the date you discover or should have discovered, the defect. This limitation does not apply to implied warranties arising under state law. Some states do not permit limitation of the time within which you may bring an action beyond the limits provided by state law so the above provision may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

ADDITIONAL REFERENCE

ATTENTION CANADIAN CONSUMERS:

Canadian consumers are requested to complete the special Canadian "Warranty Registration Form" enclosed, and forward this completed form with a copy of bill of sale to TOSHIBA OF CANADA to "Register and Validate" their warranty.

TOSHIBA AMERICA CONSUMER PRODUCTS, INC.

HEAD OFFICE/82 TOTOWA ROAD, WAYNE, NEW JERSEY 07470 TEL: (201) 628-8000

FACTORY SERVICE CENTERS/NORTHEAST: 82 TOTOWA ROAD, WAYNE, NEW JERSEY 07470 TEL: (201) 628-8000

MIDWEST: 1010 JOHNSON DRIVE, BUFFALO GROVE, ILLINOIS 60089-6900 TEL: (708) 541-9400

WEST: 5490 E. FRANCIS ST., ONTARIO, CA 91761 TEL: (909) 988-5303

SOUTHWEST: 1421 CHAMPION DRIVE, SUITE 304 CARROLLTON, TEXAS 75006 TEL: (214) 243-1367

SOUTHEAST: 6115 JIMMY CARTER BLVD., SUITE C2, NORCROSS, GA 30071-4607 TEL: (404)242-7500

TOSHIBA OF CANADA LTD.

CONSUMER ELECTRONICS SECTOR

HEAD OFFICE / 191 MCNABB STREET, MARKHAM, ONTARIO L3R 8H2, CANADA TEL: (905) 470-5400

SERVICE CENTRES/TORONTO: 191 MCNABB STREET, MARKHAM, ONTARIO L3R 8H2, PHONE: (905) 470-5400

MONTREAL: 1643, NORTH SERVICE RD., TRANS-CANADA HIGHWAY, DORVAL QUEBEC, H9P 1J1, CANADA

TEL: (514) 332-6860

VANCOUVER: 3870 JACOMBS ROAD, RICHMOND, B.C., V6V 1Y6, CANADA TEL: (604) 270-8481

TOSHIBA HAWAII, INC.

HEAD OFFICE/327 KAMAKEE STREET, HONOLULU, HAWAII 96814, U.S.A. TEL: (808)521-5377

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