TOSHIBA

Projection Television
OWNER'S MANUAL

16:9 WIDE · **DOLBY SURROUND PRO·LOGIC**

TW56D90
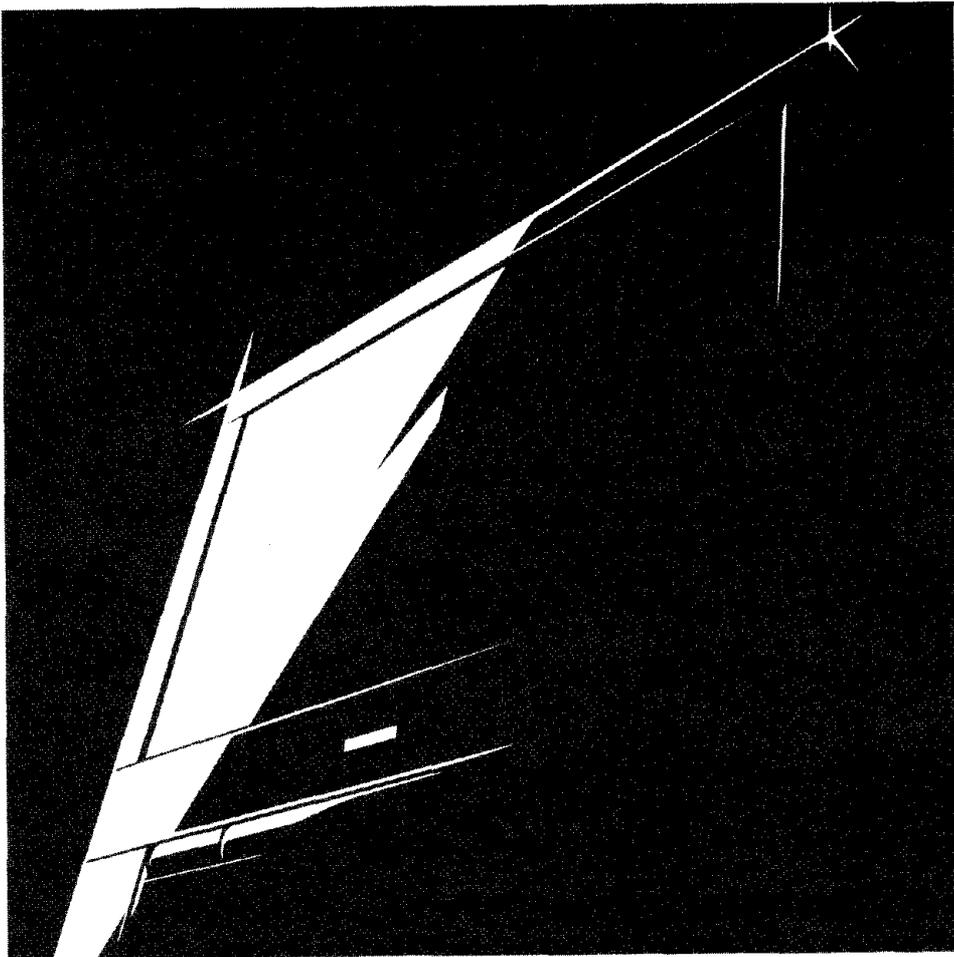
Dear Customer

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.
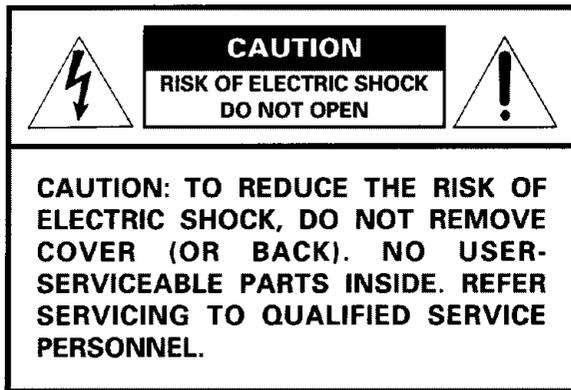
Model Number _____   Serial Number _____

Safety Precautions

WARNING:

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

⚡ **CAUTION**
RISK OF ELECTRIC SHOCK
DO NOT OPEN ⚠

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

⚡ 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.
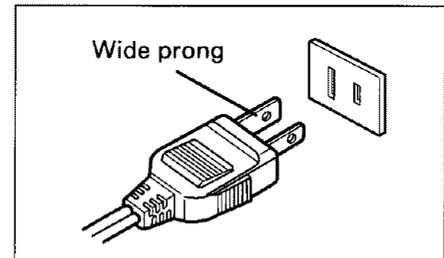
CAUTION:

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.

Wide prong

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.

Table of Contents

Installation

To install the TV

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

Use curtains or blinds to shut out direct sunlight.
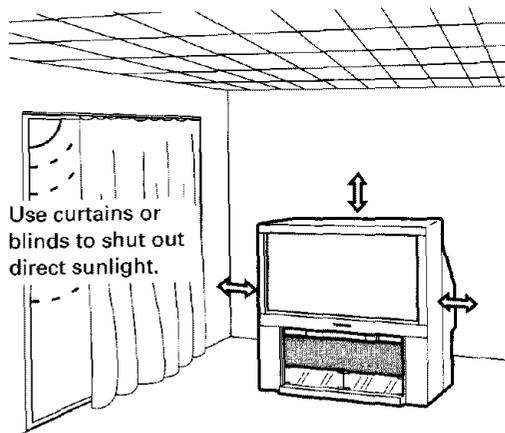
If you install the TV close to a wall, keep a enough space (⇔: 10 inches or more) around the TV.

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]

10 feet — 4 feet
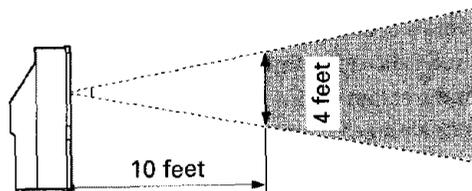
Viewing Range

HORIZONTAL VIEWING ANGLE [TOP VIEW]

24 feet — 10 feet
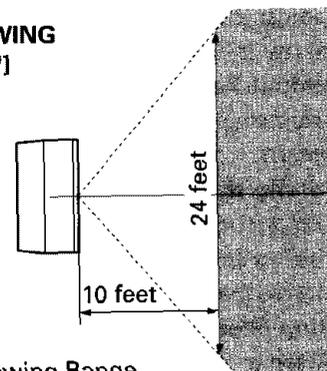
Viewing Range

Supplied accessories

• When you unpack the package, be sure that it contains all the accessories (shown below).
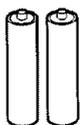
Two "AA" size alkaline batteries
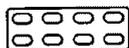
Template
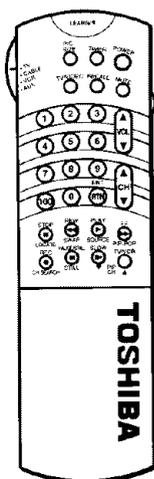
Remote Control

Two "AAA" size batteries
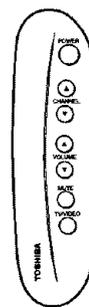
EZ Remote Control*

* The instructions for the EZ Remote Control are on the separate sheet enclosed in this accessory package.
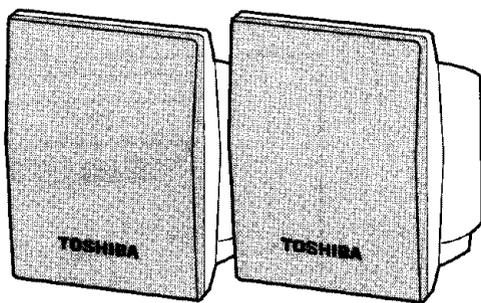
Surround Speakers with cables
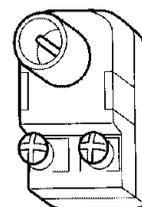
Antenna Adapter

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

TV rear

1   2   3
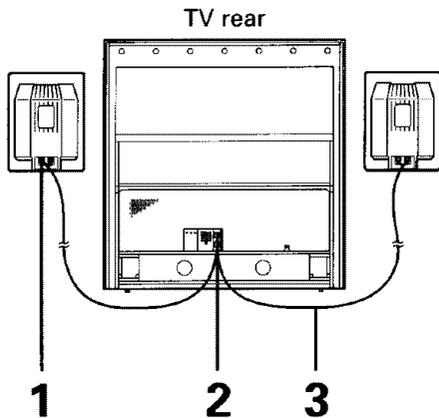
Connection

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

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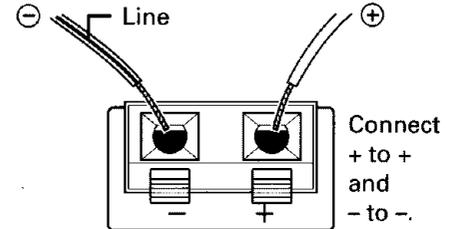
2 Connect the other end of the speaker cable to the "REAR SPEAKER" terminals* on the TV rear panel. While depressing the button, insert the cable. Then, release the button.

Note:
The REAR SPEAKER terminals can be used only for the supplied speakers.
Do not connect any other speakers to these terminals.
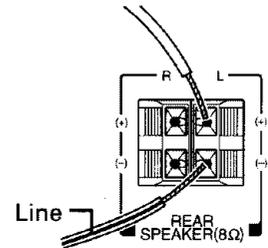
3 Connect another speaker following steps 1 and 2 above.

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.

L speaker   R speaker
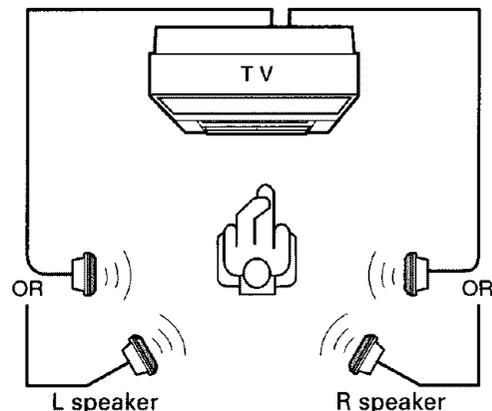
Care and Maintenance

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.
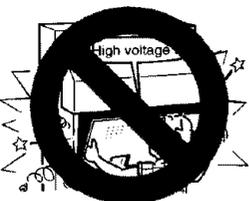
Do not remove the back cover.

- Let qualified technicians check and adjust your TV.
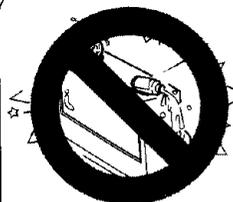
Do not place containers with liquids such as cosmetics on the TV.

If any foreign material or water has gotten into the TV, unplug the AC cord and contact your dealer.
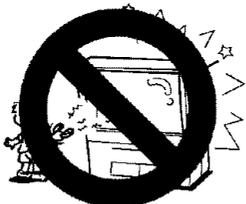
Keep magnets, toys with magnets, electric clocks, speakers, etc. away from the TV.

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.

Neutral detergent dissolved in water
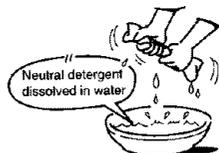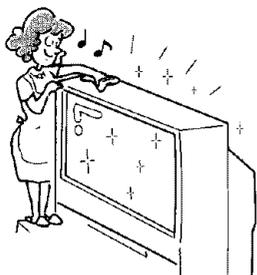
When the cabinet becomes dirty, clean it with a soft and dry cloth.
When the cabinet is very dirty,
① Wring a wet cloth and wipe the cabinet clean.
② Finish with a dry cloth.

Wipe gently !
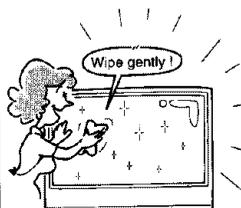
When taking care of the screen:
① Turn off the TV.
② Clean the screen with a soft, dry cloth.

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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.
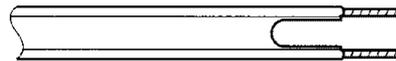
Antenna connection panel

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

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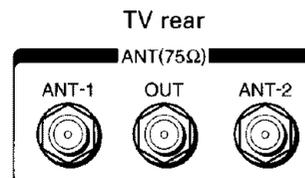
The ANT-1 and ANT-2 terminals are for connecting a VHF/UHF antenna or a cable TV system. The signal, which is input on the ANT-1, also is output from the OUT terminal whenever the RF switcher in the TV is in the ANT-2 position. You can switch between the ANT-1 and ANT-2 positions by pressing the ANT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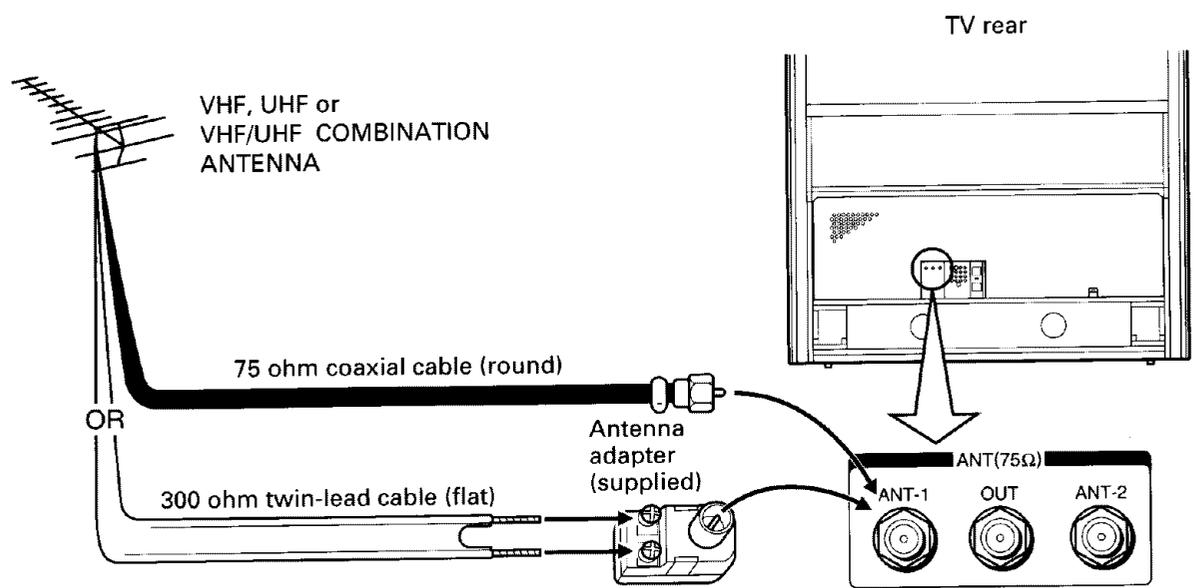
TV rear

VHF, UHF or
VHF/UHF COMBINATION
ANTENNA

75 ohm coaxial cable (round)

OR

Antenna
adapter
(supplied)

300 ohm twin-lead cable (flat)

ANT(75Ω)

ANT-1   OUT   ANT-2

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
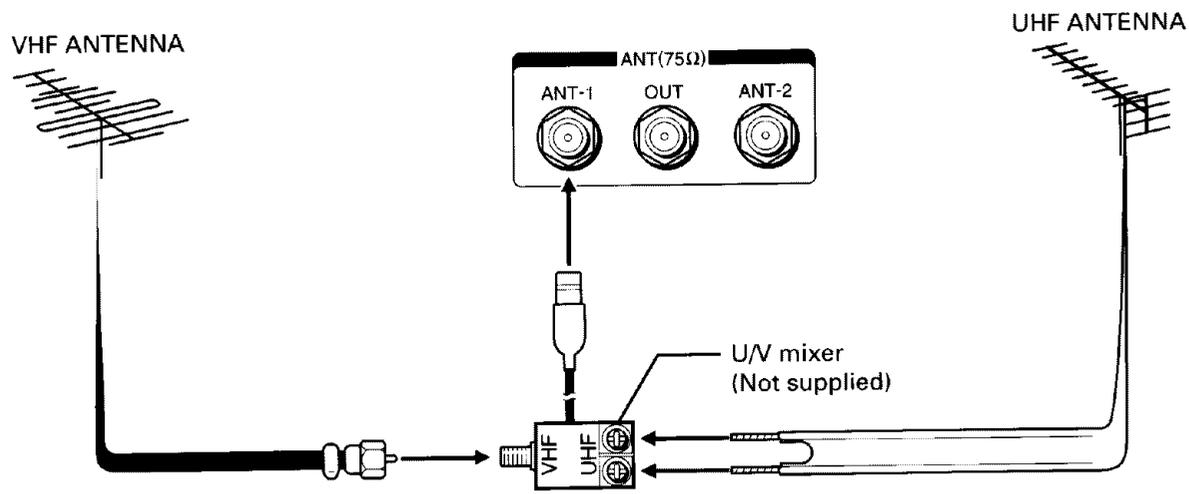
UHF ANTENNA

VHF ANTENNA

ANT(75Ω)

ANT-1   OUT   ANT-2

U/V mixer
(Not supplied)

VHF   UHF

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.

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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)

Cable lead-in

ANT(75Ω)
ANT-1   OUT   ANT-2

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.

Cable lead-in

ANT(75Ω)
ANT-1   OUT   ANT-2

IN   OUT

Cable TV converter/decoder
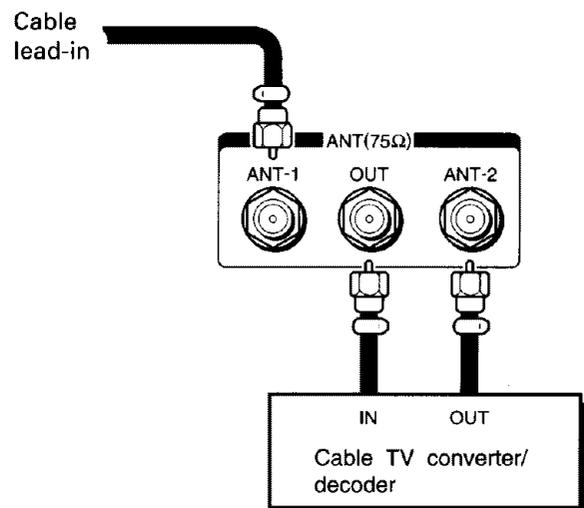
Antenna/Cable TV and VCR connections

Antenna/Cable TV connection via VCR (Simplified method)
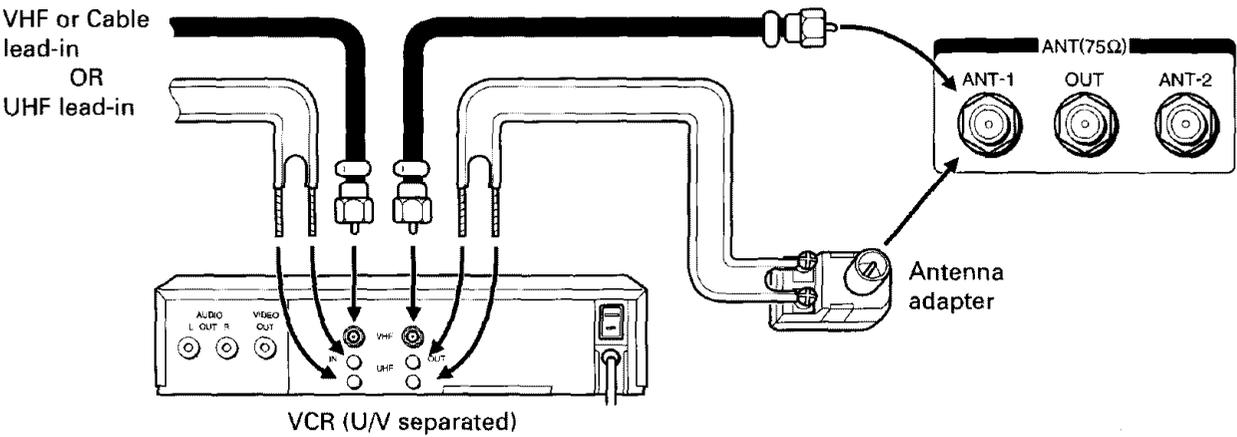
Notes:
- Playback of tapes may often cause the TV/VCR switching of the VCR to disconnect the antenna from the TV. If you cannot select a certain channel, try pressing the TV/VCR button on the Remote Control.
- If you connect both VHF and UHF lead-in cables, use a U/V mixer (not supplied). (See page 9.)
- 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.
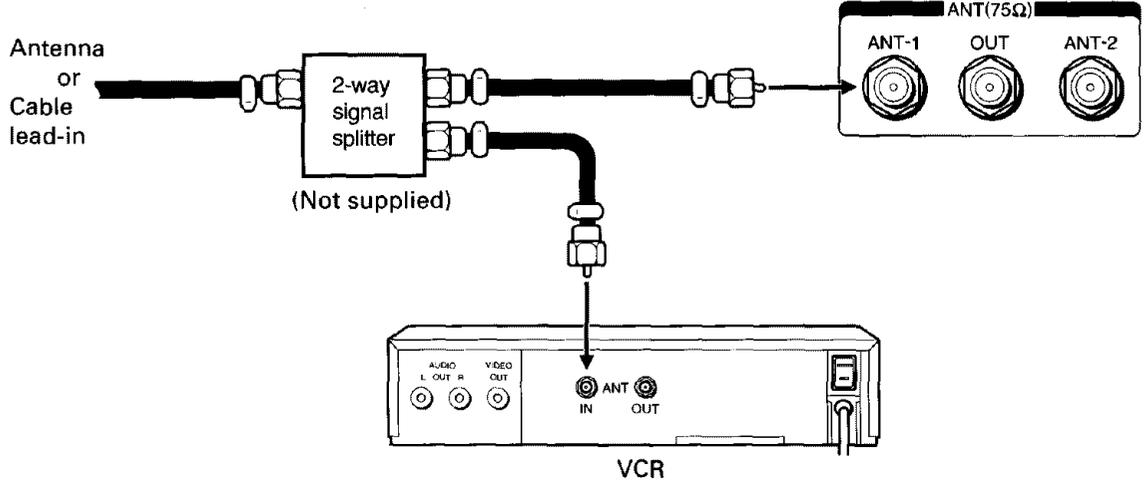
Note: VIDEO/AUDIO connections from the VCR to the TV are required for playback. (See page 62.)

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

POWER button [21]

Remote sensor

Press to open the door.

POWER indicator

VCR compartments

Behind the door

Color convergence controls [28]

TEST button [28]

S-VIDEO connector [61]

VIDEO/AUDIO jacks [61]

INPUT BALANCE control [42]

EXIT button* [20]
RESET button [36]

MENU button [19]

ANT/VIDEO button* [22]
ADV button [19]

VOLUME ▼/▲ buttons* [29]
–/+ buttons [19]

CHANNEL ▼/▲ buttons [29]
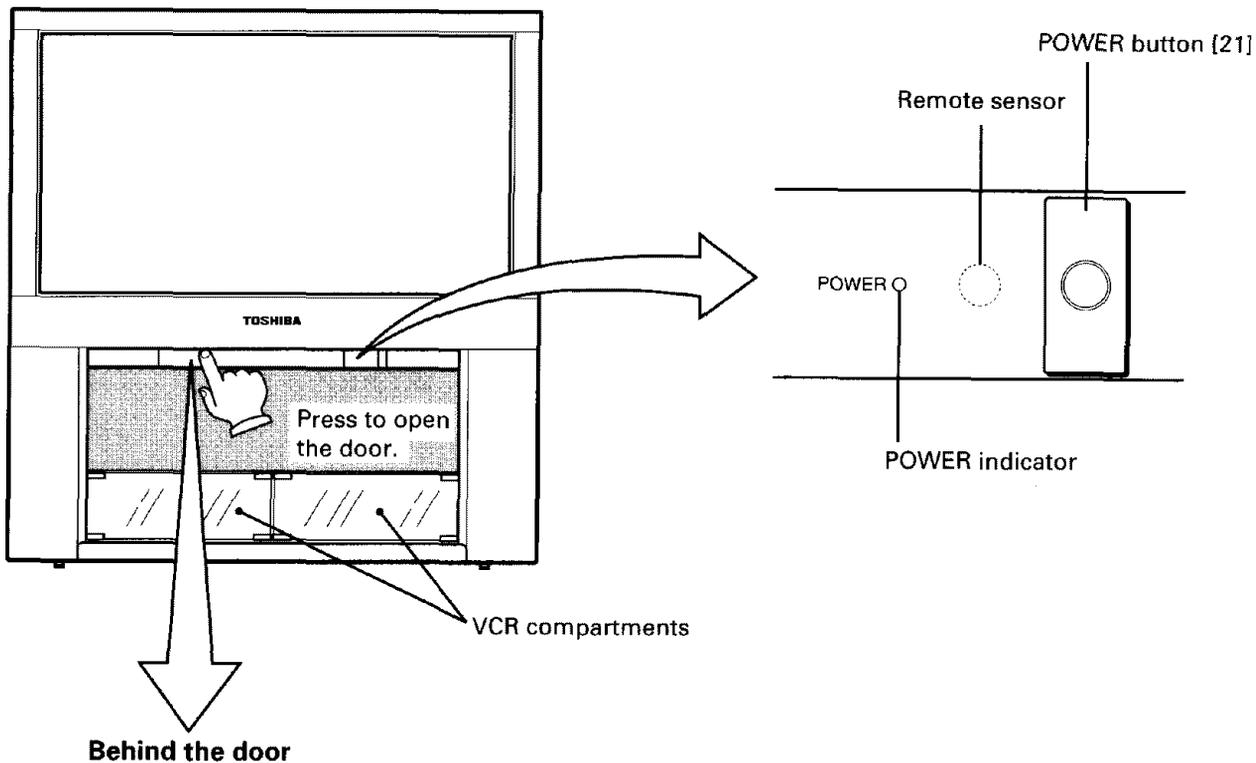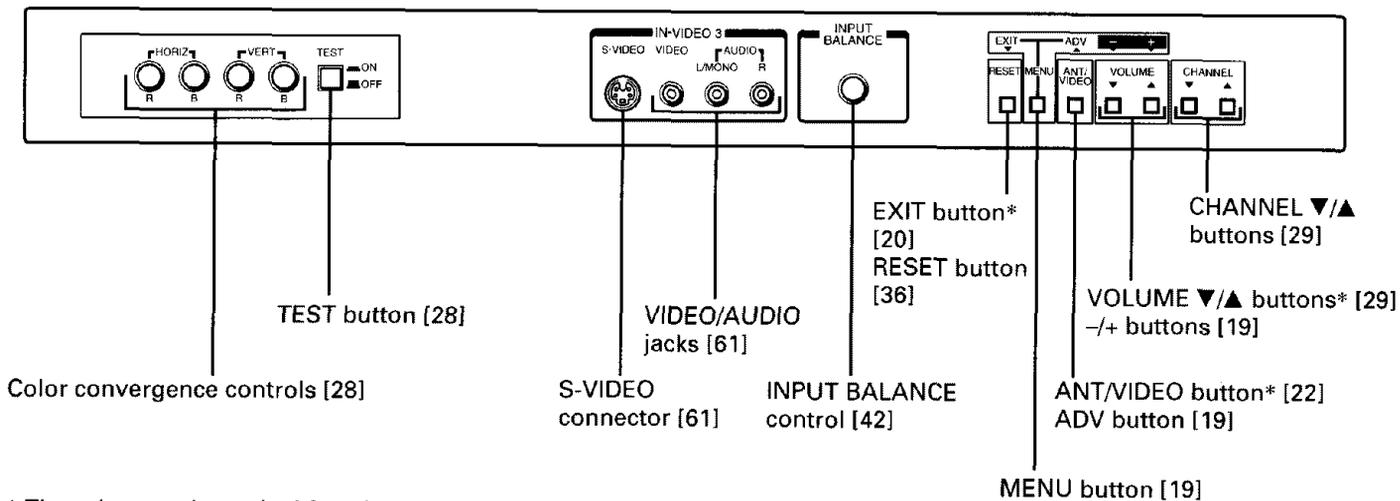
* These buttons have dual functions.

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.)

LEARN indicator [18] ——————
(Transmit indicator) PIC. SIZE [30] ——————

Mode selection switch [14] ——————
(TV-CABLE-VCR-AUX switch)

TV/VIDEO [62] ——————

Channel Number [29] ——————

PIP/POP function [45] ——————

AUDio [20] ——————
PICture [20] ——————
RESET [36] ——————
ANT1/2 [22] ——————
WIDE/SCRL [31] ——————
CYC/SBS [44] ——————

Learning buttons [18] ——————
You can use these eight buttons only as
Learning function buttons. They are not
affected by Mode selection (TV-CABLE-VCR-
AUX).

To operate buttons inside the
cover, slide the cover down
and toward you.

TIMER (Sleep) [49]

POWER [21]

RECALL [33]

MUTE [33]

Light switch
When you press this
VOLUME button, the 22 ●
▲/▼ [29] buttons light up for
RTN/ENT [33] five seconds.

CHANNEL ▲/▼ [29]

VCR function
● STOP
   To stop.
◄◄ REW
   To rewind the
SET UP [20] tape.
OPTION [20]
EXIT [20] ► PLAY
–/+ [19] To play.
DSP [39] ►► FF
SPEAKER [39] To fast forward.
   ● REC
   To record.
   (ii) PAUSE/STILL
LEARN-USE To pause.
switch [18] ► SLOW
   To view a slow
   motion picture.
   ○ TV/VCR

TOSHIBA

* The 31 buttons marked with *
  can be used as Learning buttons.

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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.

Press and slide to remove.
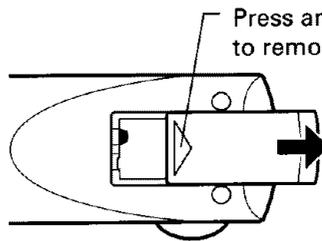
2 Insert two "AA" size alkaline batteries, matching the + and – signs on each battery with the + and – signs of the battery compartment.
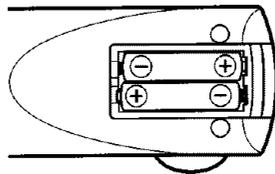
3 Slide the battery cover shut until the lock snaps.

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	• POWER button • CHANNEL ▲/▼ buttons • Channel Number buttons • RTN/ENT button
VCR	VCR	• 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; • 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
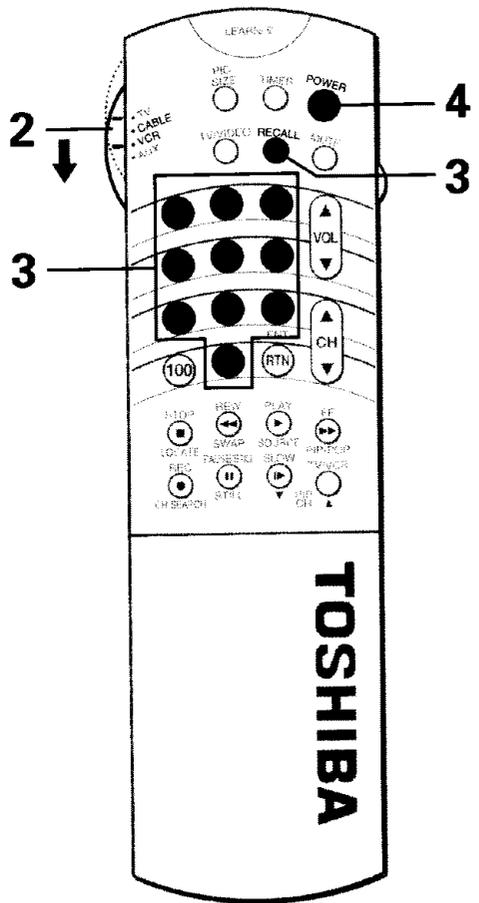
- This Remote Control is preprogrammed to operate Toshiba VCR's.
- To use VCR's other than Toshiba models (or Cable converters), perform the following procedures before operating.
- When you connect several pieces of video/audio equipment to the TV, follow the instructions on page 18.

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

Cable TV converter code table

BRAND NAME	CODE NUMBER
Sony	051, 052, 053, 054
STS	061
Sunstar	019
Sylvania	054, 062, 100, 129
Symphonic	019
Tashiko	019
Tatung	019, 060, 100
Teac	019, 060
Technics	054
Teknika	019, 054, 056, 071
Telefunken	060, 206
Tenosal	091
Tensai	019
Thomson	060
Thorn	060
Toshiba	060, 062, 064, 085, 229, 231, 385
Totevision	056, 259
Triumph	227
Unitech	259
Universum	019, 056, 068, 100, 125
Vector Rsearch	057, 059
Victor	027, 060, 086
Video Concepts	059, 080
Videosonic	259
Wards	019, 054, 061, 066, 067, 081, 091, 168, 231, 259
Yamaha	057, 060
Yoko	259
Zenith	052, 053, 058

BRAND NAME	CODE NUMBER
ABC	026, 030, 032, 036
Archer	058, 172
Century	172
Citizen	172
Colour Voice	044, 050
Comtronics	059, 079
Eastern	021
Garrard	172
Gemini	034, 089
General Instrument	030
Hamlin	028, 039, 278, 292
Hitachi	030
Jasco	172
Jerrold	022, 030, 031, 033, 034, 043, 045
Macom	052
Magnavox	046
Memorex	019
Movie Time	175
NSC	089, 175
Oak	026, 038
Panasonic	040
Paragon	019
Philips	044, 046, 047, 048, 049, 050, 079
Pioneer	163
Pulsar	019
PVP Stereo 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

| BRAND NAME	CODE NUMBER
Unika	172
United Artists	026
United Cable	022
Universal	058, 096, 172, 210
Viewstar	046, 079
Zenith	019

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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.
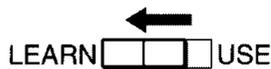- The 31 buttons can be used as Learning buttons. (See page 13.)

To program the Remote Control (continued)
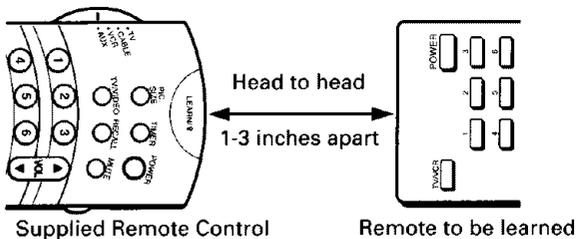
To learn operating code of another remote control

1 Set the Mode selection switch to AUX.
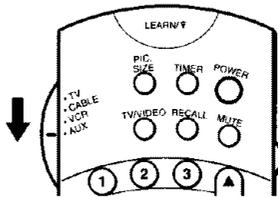
2 Set the LEARN-USE switch to LEARN.

LEARN [_____] USE

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.

Head to head

1-3 inches apart

Supplied Remote Control   Remote to be learned

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.

7 Set the LEARN-USE switch to USE.

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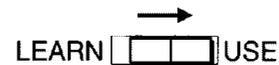
8 To check your programming, operate the appropriate equipment with the supplied Remote Control. If the equipment does not operate as expected, repeat steps 1 to 7.
If needed, try changing the distance between the two remote controls.

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.
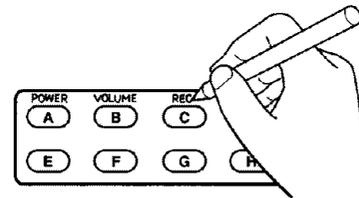
To cancel the learned operating codes

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.

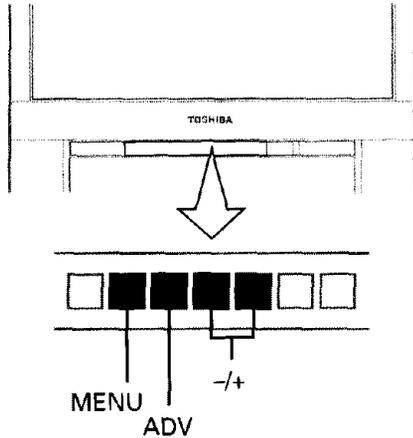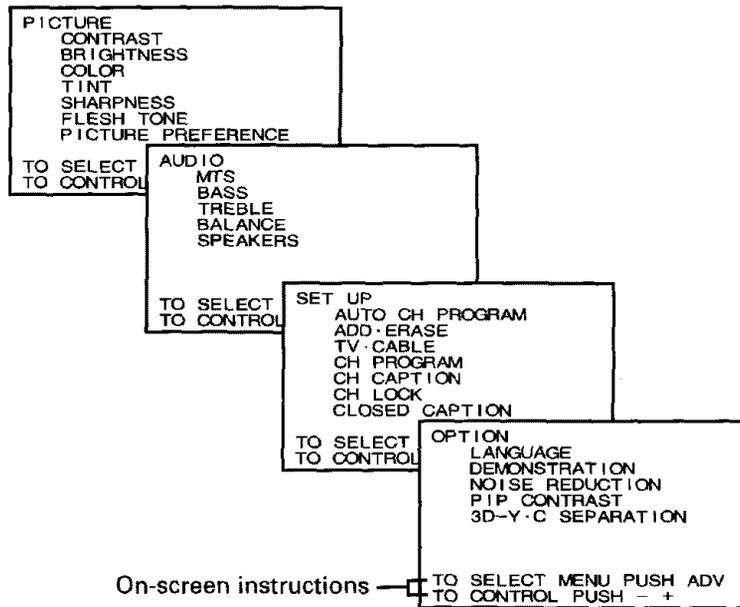# Quick Reference Menu Guide

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

To use the menu function buttons on the TV

TOSHIBA

MENU
ADV
-/+

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.

MENU button

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

```
PICTURE
   CONTRAST
   BRIGHTNESS
   COLOR
   TINT
   SHARPNESS
   FLESH TONE
   PICTURE PREFERENCE
TO SELECT    AUDIO
TO CONTROL      MTS
                BASS
                TREBLE
                BALANCE
                SPEAKERS
       TO SELECT    SET UP
       TO CONTROL      AUTO CH PROGRAM
                       ADD·ERASE
                       TV·CABLE
                       CH PROGRAM
                       CH CAPTION
                       CH LOCK
                       CLOSED CAPTION
          TO SELECT    OPTION
          TO CONTROL      LANGUAGE
                          DEMONSTRATION
                          NOISE REDUCTION
                          PIP CONTRAST
                          3D-Y·C SEPARATION
```

On-screen instructions ——
```
TO SELECT MENU PUSH ADV
TO CONTROL PUSH - +
```

ADV button

Use the **ADV** button after you have pressed **MENU** to select the function you want to adjust.
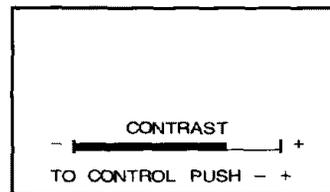Each time you press **ADV**, the function to be adjusted will be selected in numerical order.
The selected function will be displayed in magenta.

-/+ 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

```
         CONTRAST
  - |████████████____| +
  TO CONTROL PUSH - +
```

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

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Quick Reference Menu Guide

(continued)

To use the menu function buttons on the Remote Control

EXIT

AUD
PIC
EXIT

SET UP
OPTION
–/+

TOSHIBA
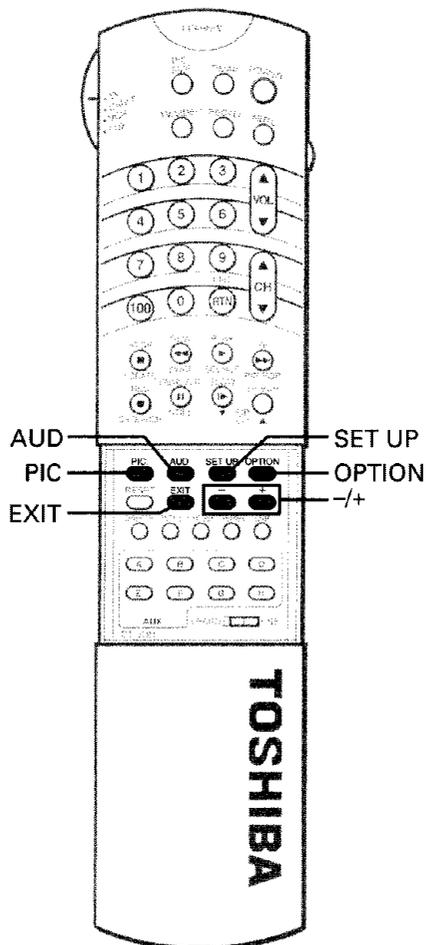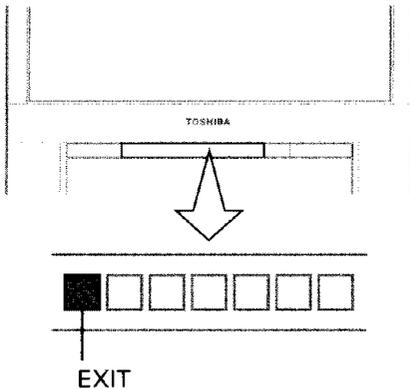
PIC(TURE) button

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 - +
```
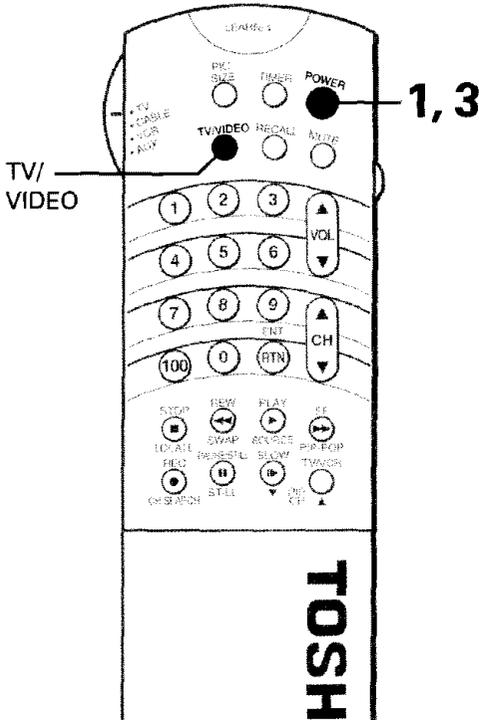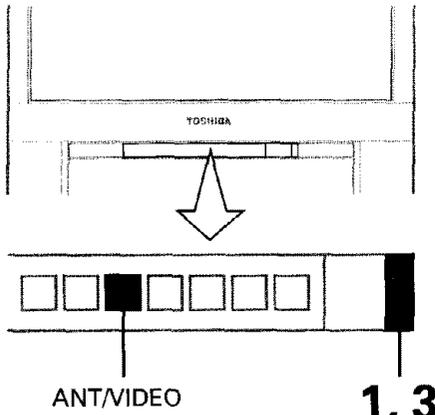
EXIT button (on the TV and on the Remote Control)

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**.


ANT/VIDEO **1, 3**

TV/
VIDEO

1, 3

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.

STEREO
SAP

ANT 1
ABCD
TV 4
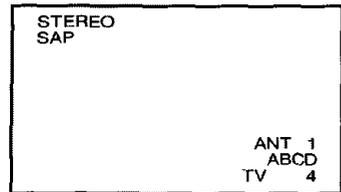
3 To turn the TV off, press **POWER**
again.

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
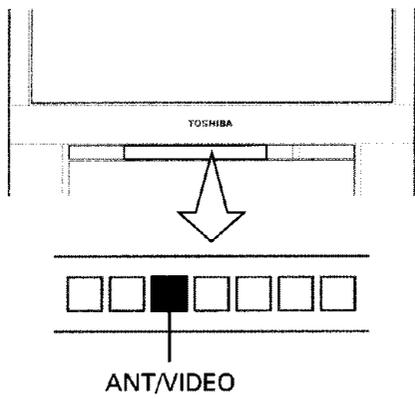 prevent the TV from turning on in your absence.

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.

To select the antenna input

ANT/VIDEO

ANT1/2

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
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.
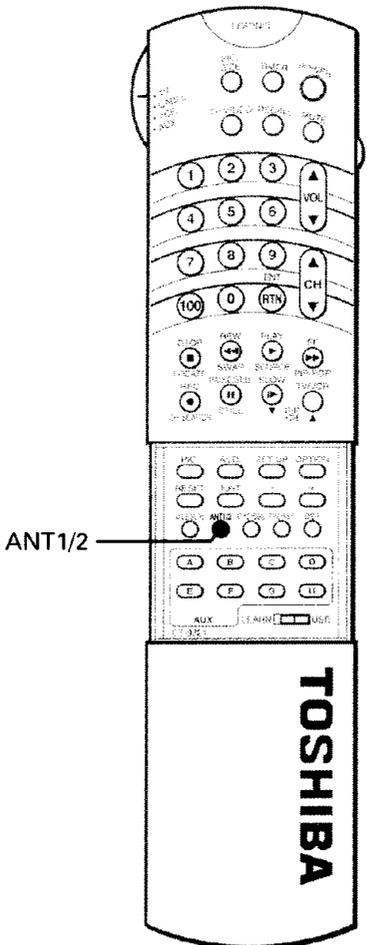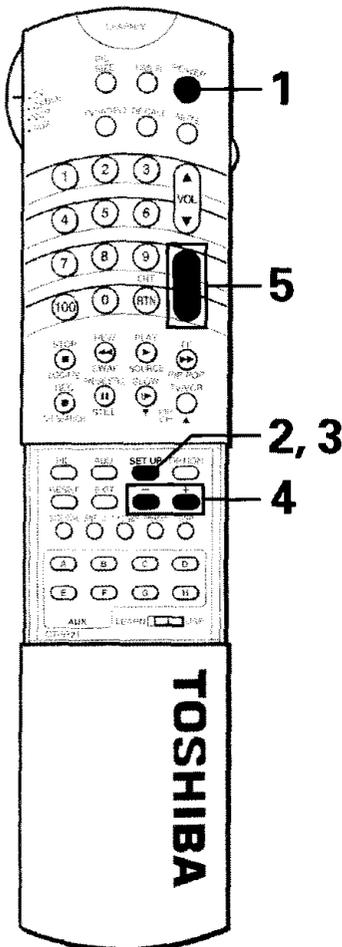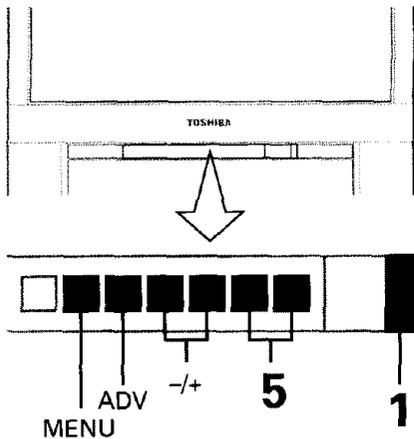
Programming Channels

- **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.
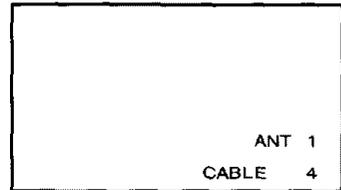
AUTO CHANNEL PROGRAM function

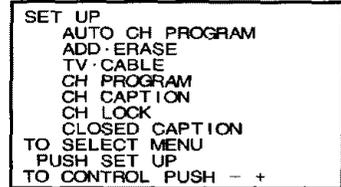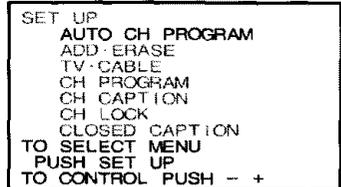### To program all available channels automatically (AUTO CH PROGRAM)

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

```
                                    ANT   1
                                    CABLE   4
```

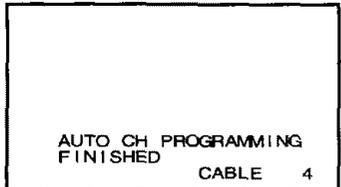**2** Press **SET UP** on the Remote Control (or **MENU** on the TV) to display the SET UP menu on the screen.

```
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 "AUTO 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 - +
```

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.

```
             AUTO CH PROGRAM
                      CABLE   33
```
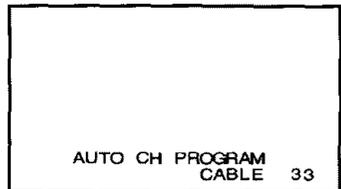
5 When autoprogramming is complete, you will see the message at the right.
You can check to see which channels are in memory by pressing **CHANNEL ▲ or ▼**.

```
             AUTO CH PROGRAMMING
             FINISHED
                      CABLE   4
```
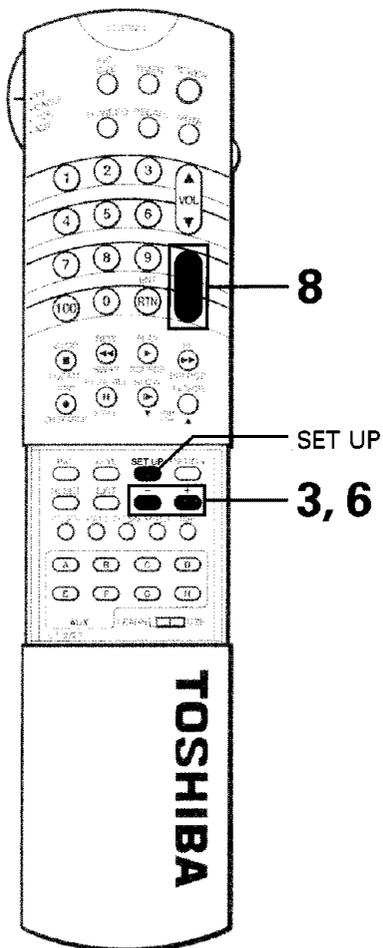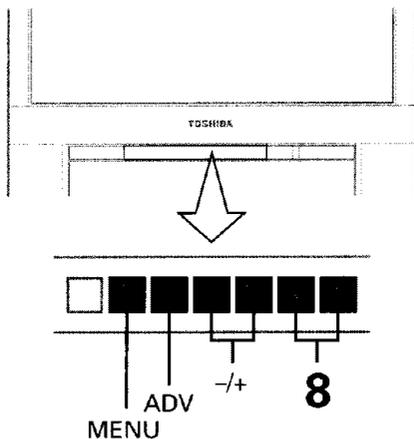
23

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.)

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.

```
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  -  +
```

2 Press **SET UP** repeatedly on the Remote Control (or **ADV** on the TV) until "TV•CABLE" 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  -  +
```

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.

```
        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.

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Programming Channels (continued)

ADD/ERASE function

MENU   ADV –/+   CHANNEL ▲/▼

CHANNEL ▲/▼

SET UP

–/+
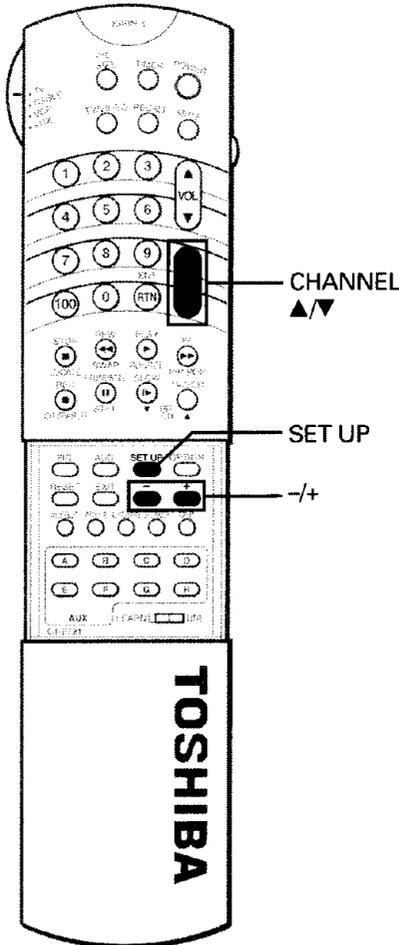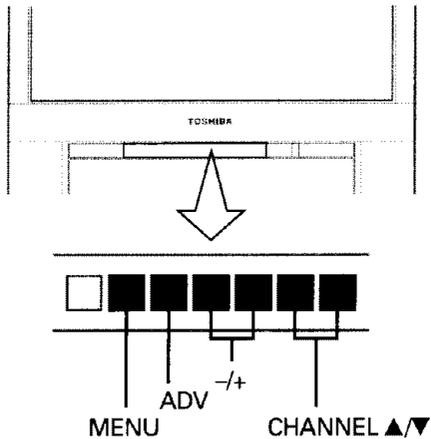
To erase unnecessary channels

1 Select the channel to be erased with **CHANNEL ▲** or **▼**.

```
                                    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 ERASE" is displayed in magenta indicating that the channel has been erased from the memory.

```
          CH ADD
          CH ERASE
                   CABLE    4

    TO SELECT PUSH - +
```

5 Repeat steps 1 through 4 for other channels.
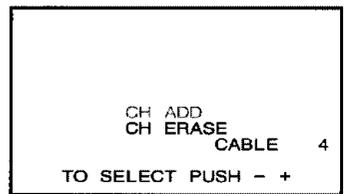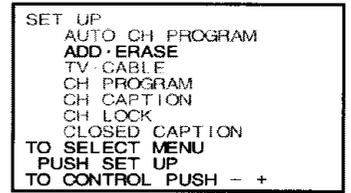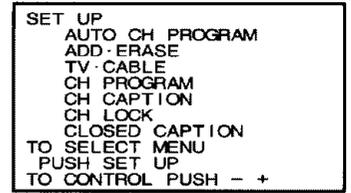
ADD/ERASE function (continued)

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.

27

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.

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.
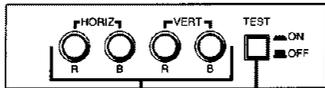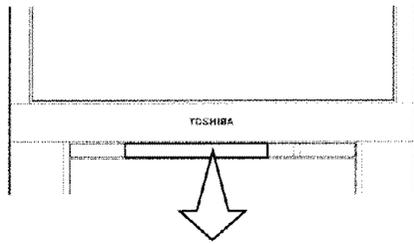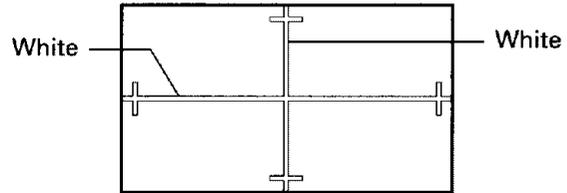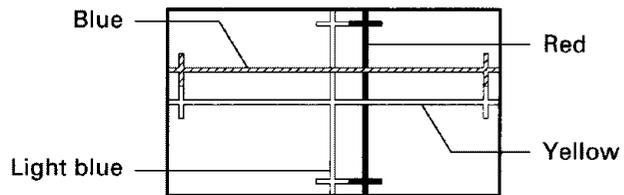
TEST button

Color convergence controls

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

To check and align the colors

1 Select an active channel and wait a moment for the picture to stabilize.

2 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.

White — White

3 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.
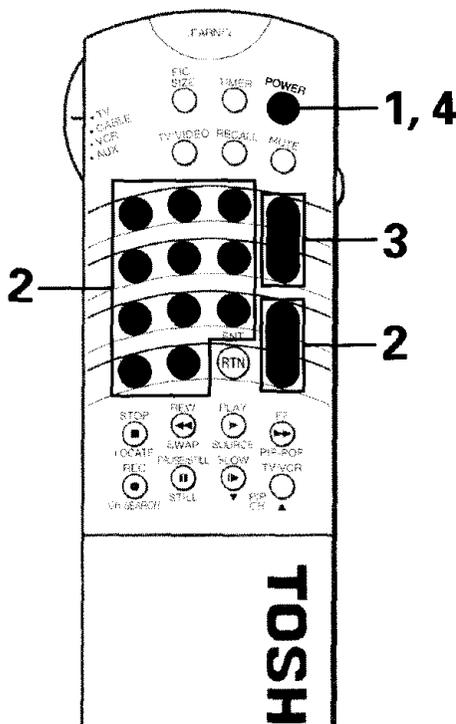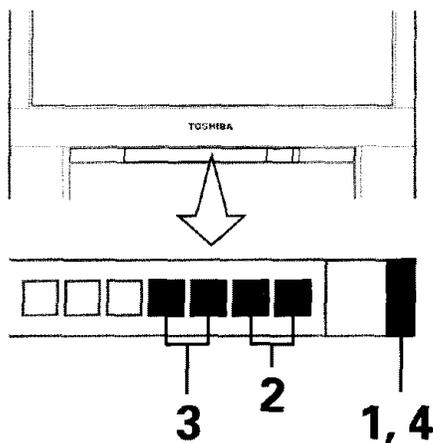
Blue — Red

Light blue — Yellow

4 When color convergence is correctly adjusted, you will see single white lines.
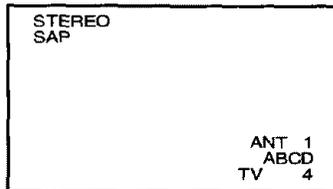
White — White
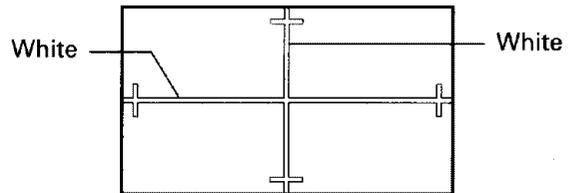
5 Push the TEST button again to set to the "TEST OFF" position.

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.

STEREO
SAP

ANT 1
ABCD
TV 4

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.

10

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.

VOLUME
– ▮▬▬▬▬▬▬ +
TO CONTROL PUSH VOL
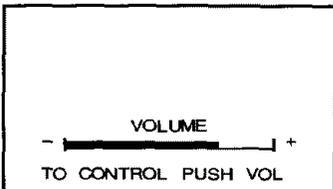
4 To turn off the TV, press **POWER** again.

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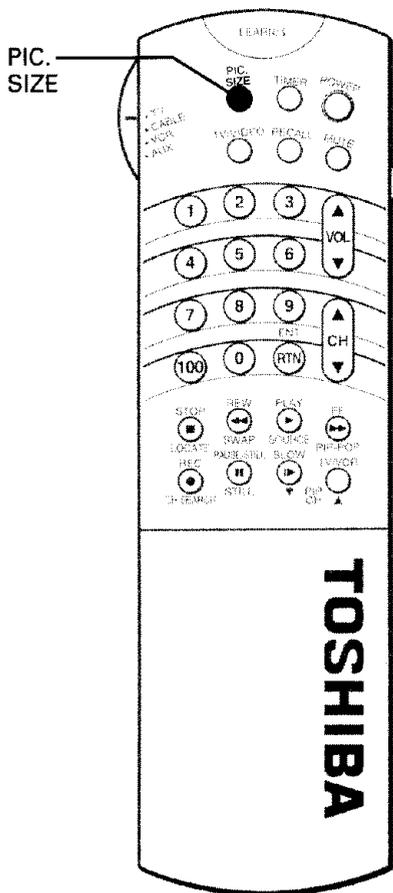Check if the TV•CABLE function is properly set.

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.
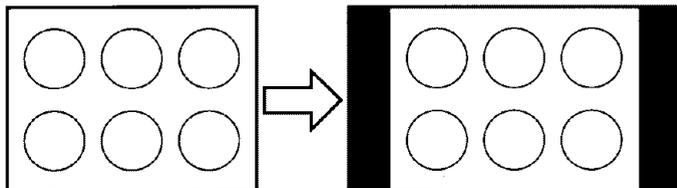
To select the picture size

PIC.
SIZE

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

```
STANDARD
THEATER WIDE
FULL

TO SELECT PUSH PIC-SIZE
```
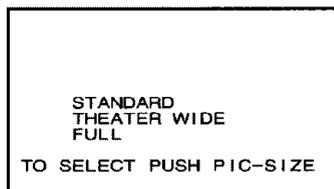
STANDARD

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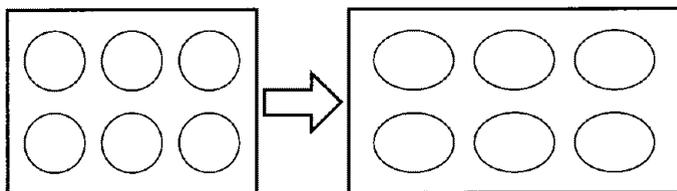normal
program or
letter box
program
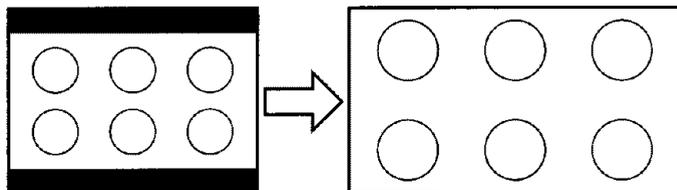
Note:
If you select this mode in normal programs, the picture at the top and bottom of the screen will be hidden. If subtitles are difficult to read, scroll the picture. (See page 32.)

FULL

This mode shows the pictures stretched horizontally by 1.33 times.

Viewing
a normal
program

30

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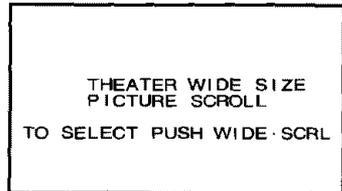
3 Press – or +.
The menu display will appear as shown at the right. Then repeatedly press – or + to select the appropriate picture height from the following three modes.

```
THEATER WIDE 1
THEATER WIDE 2
THEATER WIDE 3

TO SELECT PUSH – +
```

THEATER WIDE 1
(Normal size)

133%

STANDARD mode

100%

THEATER WIDE 2
(Vertically stretched picture)

142%

THEATER WIDE 3
(Vertically contracted picture)

124%
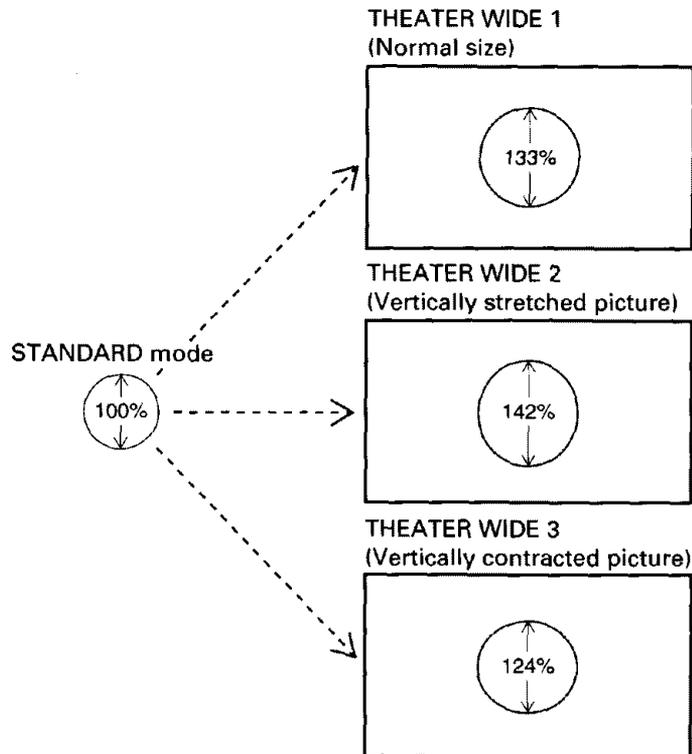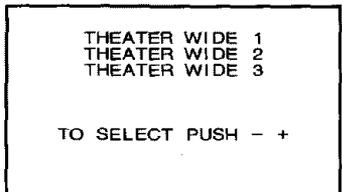
Note: This setting is reset to "THEATER WIDE 1" mode automatically when you change to another channel or press the RESET button.

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

31

Enjoying Wide Pictures (continued)

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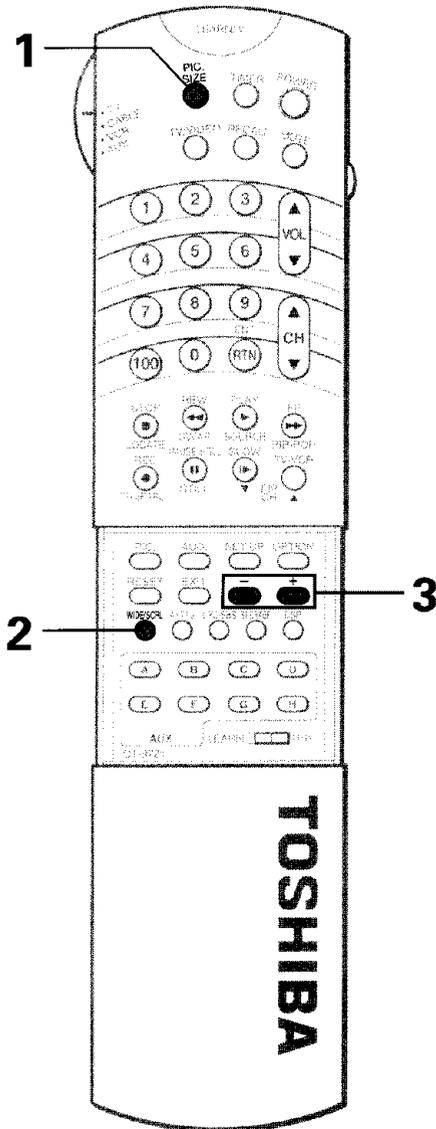
To adjust the vertical position of the picture

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

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

```
THEATER WIDE SIZE
PICTURE SCROLL

TO SELECT PUSH WIDE·SCRL
```
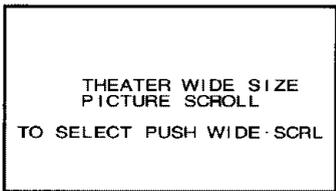
3 Press – or + to adjust the vertical position of the picture.

Normal position
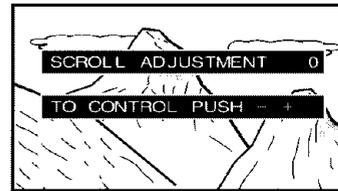
(Center)

To scroll the picture, press +.
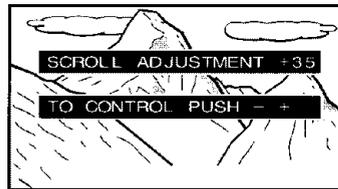
(Upper end)

To lower the picture, press –.
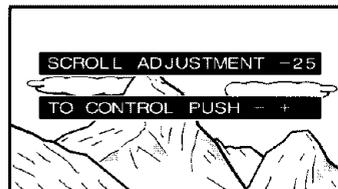
(Lower end)

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.

```
STEREO
SAP
CAPTION
TEXT


                                    ANT  1
                                       ABCD
                        10:25    TV     4
```

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.)

```



                              MUTE

```

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.

```
(Viewing  channel)
                        2
```

↑ ↓

```
(Previous  channel)
                        6
```

— MUTE
— RECALL

— RTN
(Channel return)

TOSHIBA

BASIC OPERATION

33

Controlling the Picture

To adjust the picture performance
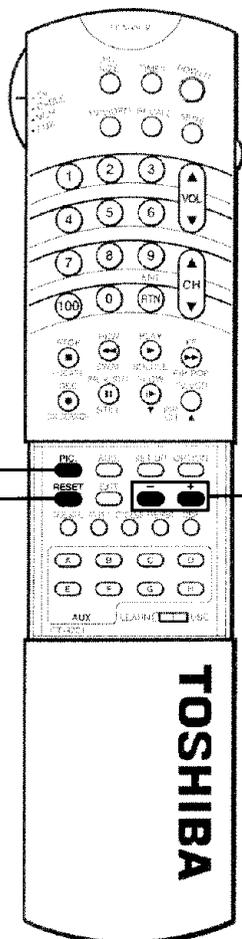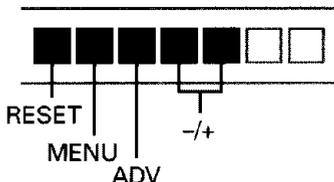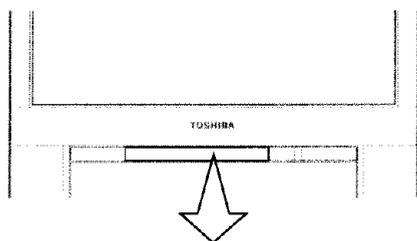
To adjust the picture quality

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.
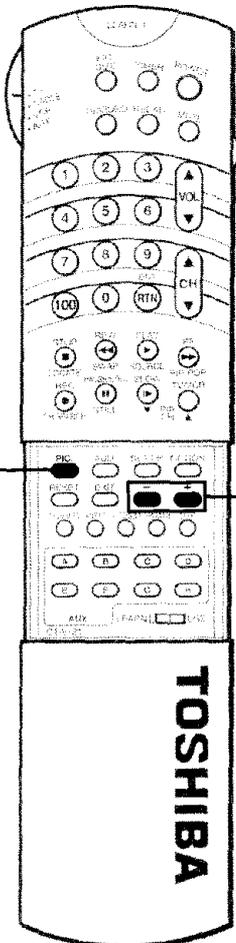
Example: CONTRAST adjustment mode display

```
            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.)

RESET
MENU
ADV
−/+

1, 2
RESET

3

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 - +
```
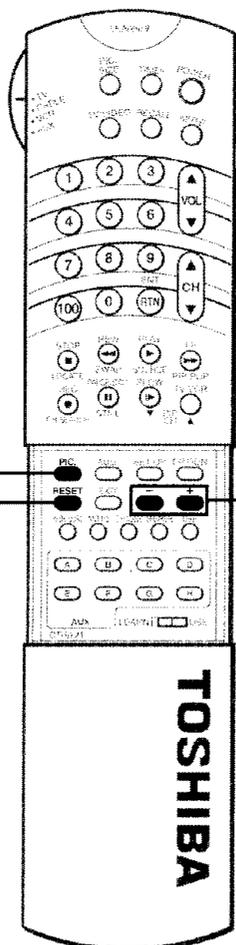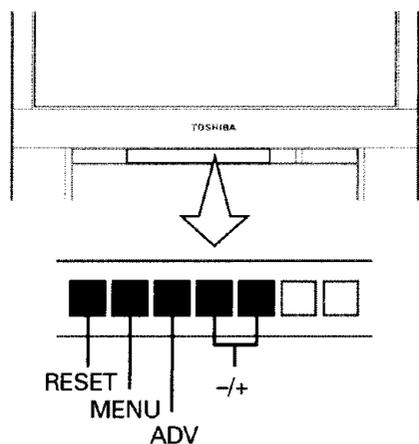
To deactivate this function
Select "FLESH TONE OFF".

ADV
-/+
MENU

1,2

3

BASIC OPERATION

TOSHIBA

35

Controlling the Picture (continued)

To adjust the picture performance (continued)

RESET
MENU
ADV
−/+

1, 2
RESET
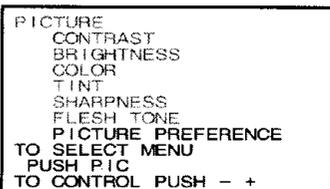
3

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.

```
PICTURE
    CONTRAST
    BRIGHTNESS
    COLOR
    TINT
    SHARPNESS
    FLESH TONE
    PICTURE PREFERENCE
TO SELECT MENU
    PUSH PIC
TO CONTROL PUSH − +
```
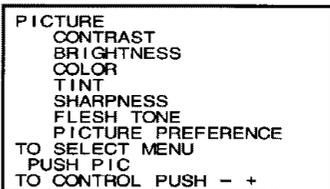
2 Press **PIC** on the Remote Control (or **ADV** on the TV) until "PICTURE PREFERENCE" is displayed in magenta.

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

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

```
    PICTURE PREFERENCE

        NORMAL
        THEATER
        MEMORY

    TO SELECT PUSH − +
```
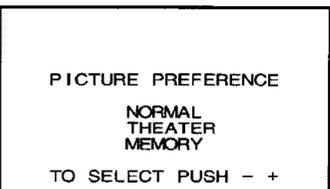
Mode	Picture quality
NORMAL	the picture quality preset at the factory
THEATER	soft and moody picture
MEMORY	the picture quality you set (First follow page 34.)

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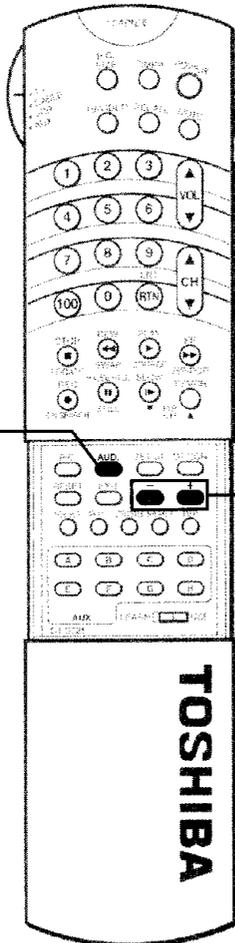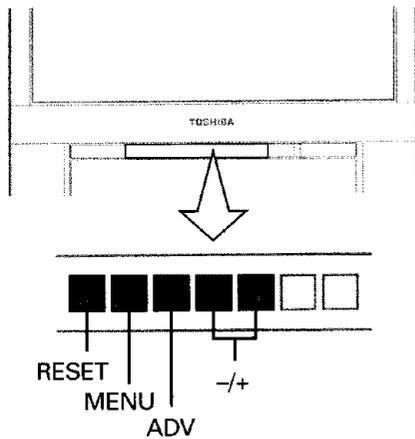- PICTURE PREFERENCE .... NORMAL
- PIP CONTRAST .... Maximum setting
- PICTURE SIZE .... STANDARD
- PICTURE SCROLL .... Normal position
- THEATER WIDE .... THEATER WIDE 1

RESET
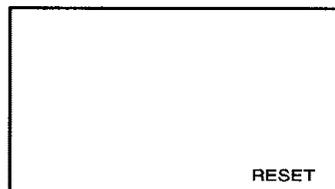
Controlling the Sound

- 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.

RESET
MENU
ADV
–/+

1, 2

3

TOSHIBA

BASIC OPERATION

37

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.

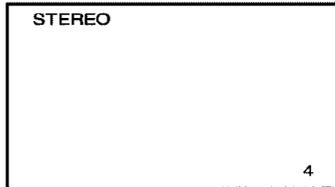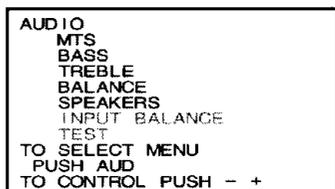## To listen to Stereo/SAP broadcasts

MENU
ADV
-/+
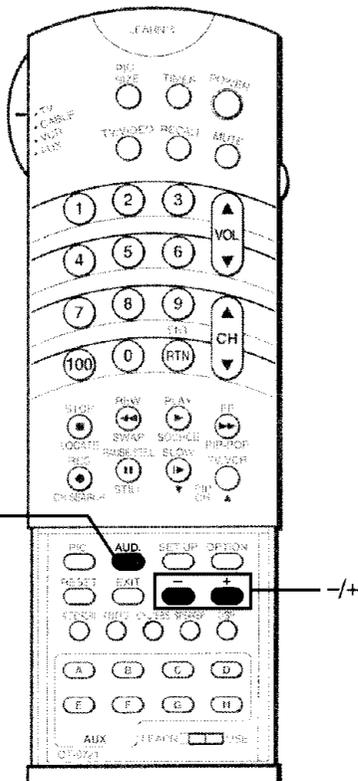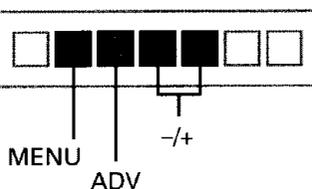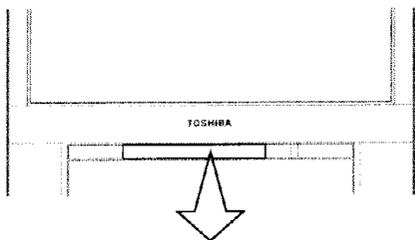
AUD
-/+

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.
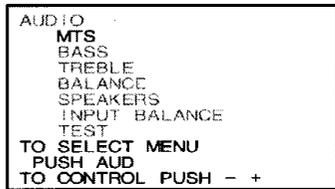
Listening to stereo sound

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.
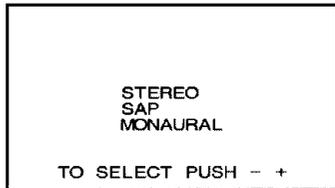
STEREO
4

2 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 - +

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

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

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

STEREO SAP MONAURAL
TO SELECT PUSH - +

Listening to the second language

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

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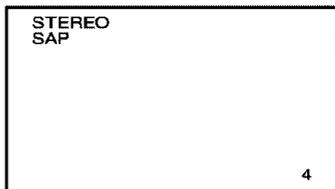
2 Select "SAP" following steps 2 to 4 above.

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.
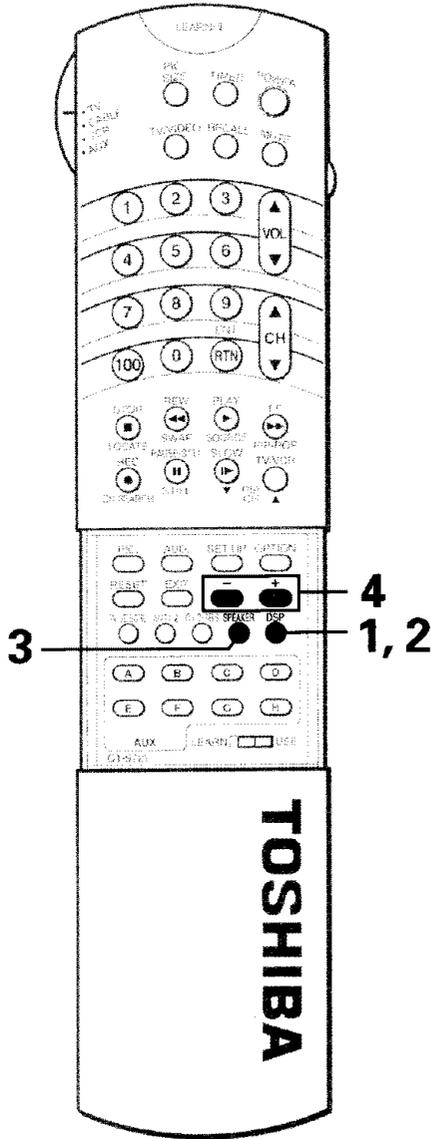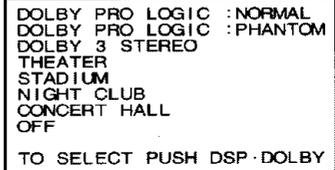
To select the DSP mode

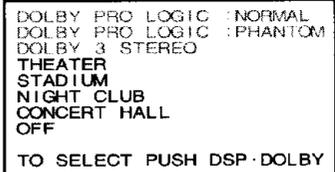### Effects of each DSP mode

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.
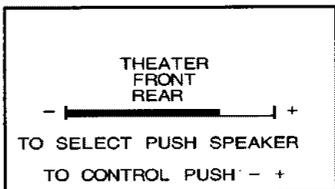
The FRONT and REAR speakers can be adjusted separately.
FRONT mode—To adjust the built-in speakers or connected external speakers.
REAR mode—To adjust the Surround Speakers connected to the REAR SPEAKER terminals.

```
         THEATER
         FRONT
         REAR
– |■■■■■■■■■|  | +
TO SELECT PUSH SPEAKER
 TO CONTROL PUSH  – +
```

4 Press – or + to adjust the DSP level.

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

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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.

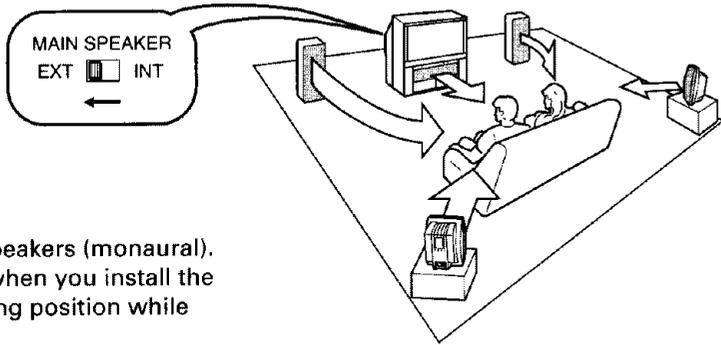### To select Dolby Pro Logic Surround

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.

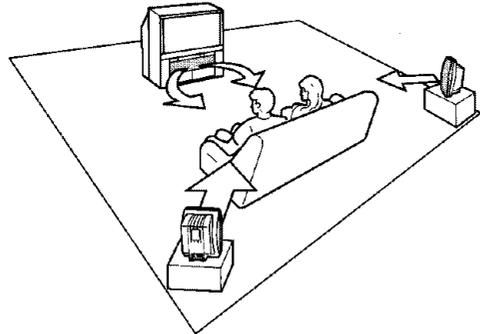|	
Main Left (external)	1
Center (built-in)	2
Main Right (external)	1
Rear Left (Surround)	1
Rear Right (Surround)	1

MAIN SPEAKER
EXT ◼ INT

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

MAIN SPEAKER
EXT ◼ INT
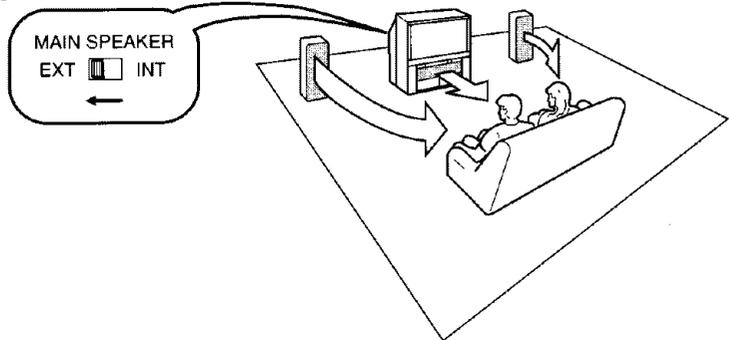
Note: The built-in speakers operate as the Center speakers (monaural).

ADVANCED OPERATION

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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).
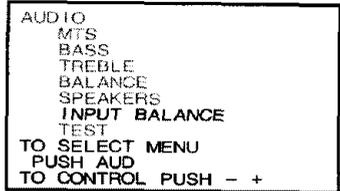
Dolby Surround level settings
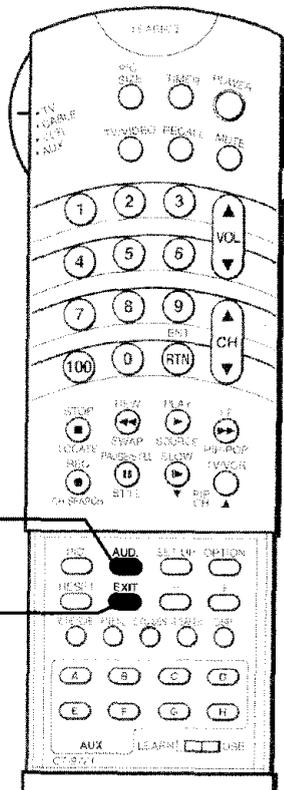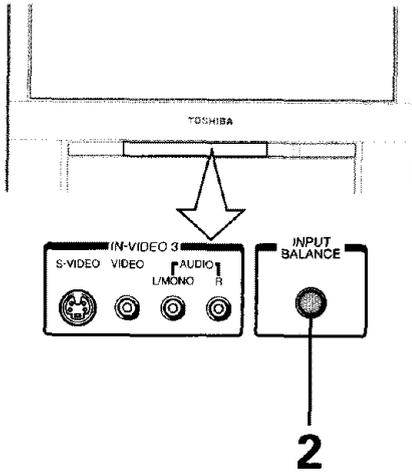
To adjust the INPUT BALANCE control

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.

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

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

```
        INPUT BALANCE

TO ADJUST TURN
   INPUT BALANCE KNOB
   ON THE SET
TO END PUSH EXIT
```
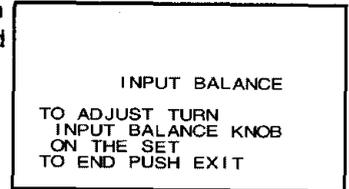
3 Press **EXIT** to end the INPUT BALANCE adjustment.

*Dolby Surround
Manufactured under license from Dolby Laboratories Licensing Corporation. Additionally licensed under one or more of the following patents: U.S. number 3,959,590: Canadian numbers 1,004,603 and 1,037,877. "Dolby", "Pro Logic", and the double-D symbol ⊡ are trademarks of the Dolby Laboratories Licensing Corporation.
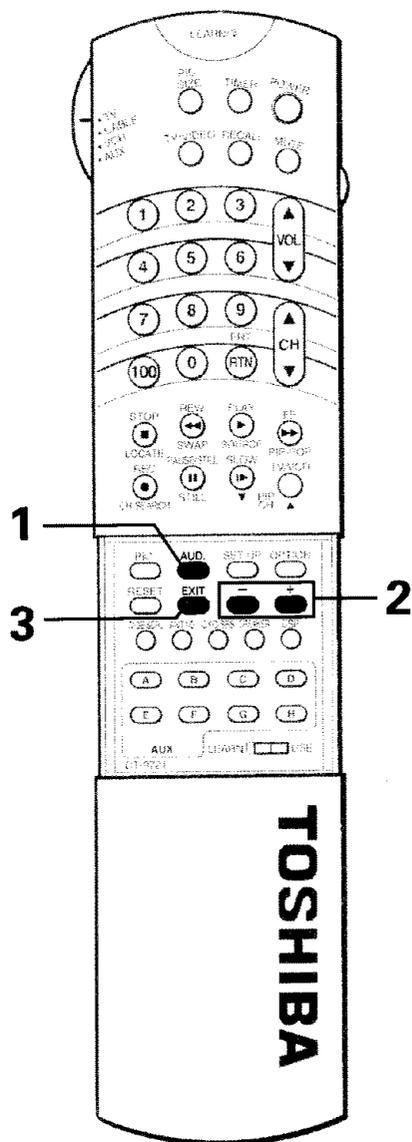
To select the Dolby Pro Logic TEST mode

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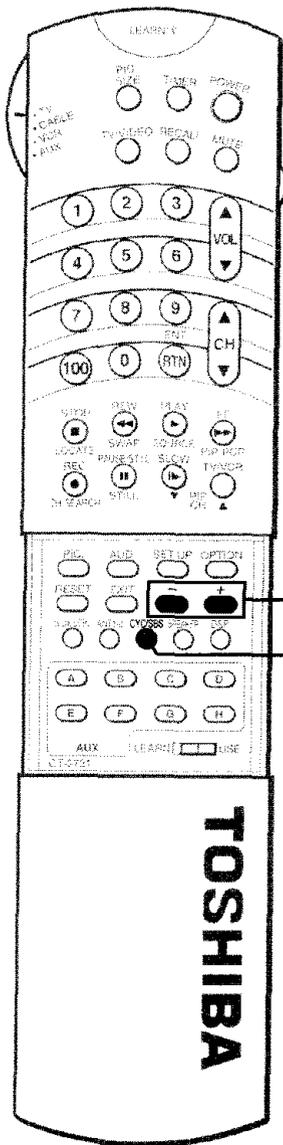
3 Press **EXIT** to end the TEST.

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

TOSHIBA

ADVANCED OPERATION

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.

3, 4

1, 2

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.

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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

Small picture

POWER

SOURCE
PIP-POP
PIP CH
▲/▼

TOSHIBA
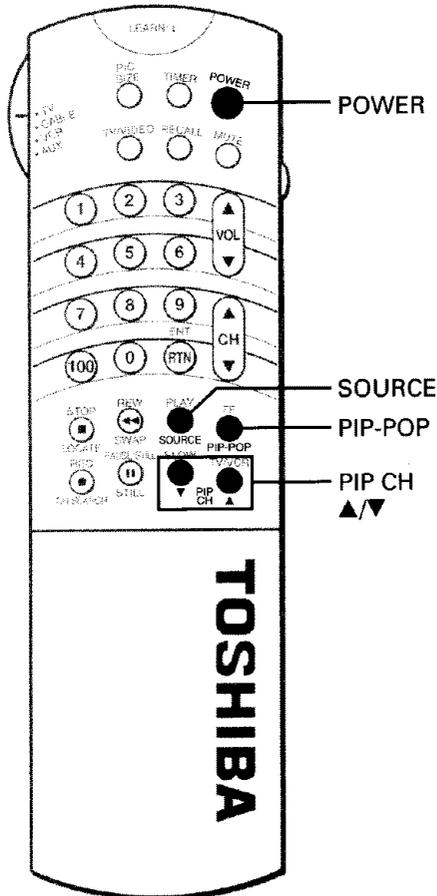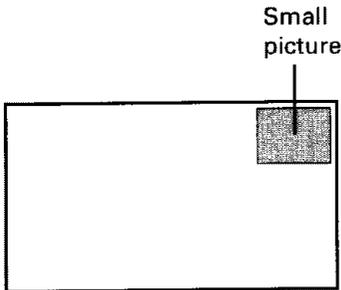
To display a TV broadcast picture as a small picture

1 Turn on the TV and select the desired program.

2 Press **PIP-POP once** to display a small picture.

PIP
4

3 Press **PIP CH ▲/▼** to select the desired program for the small picture.
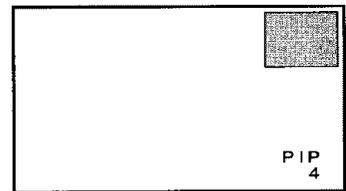
4 To make the small picture disappear, press **PIP-POP** again.

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

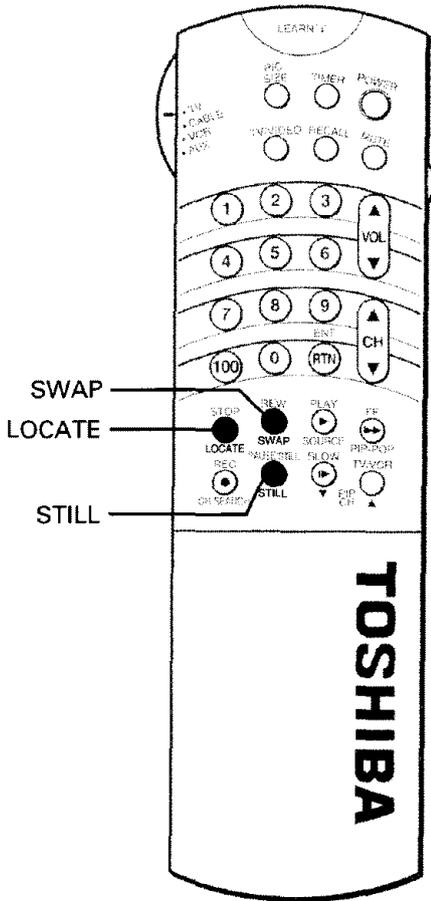Connect external source equipment for the small picture. (For connection, see page 62.)

1 Turn on the TV and select the desired program.

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

3 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.
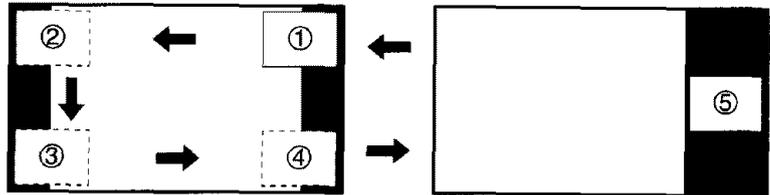
PIP

TV
VIDEO 1
VIDEO 2
VIDEO 3
TO SELECT PUSH SOURCE

ADVANCED OPERATION

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Two-Picture Screen (continued)

To use advanced functions

SWAP ——————

LOCATE ——————

STILL ——————

TOSHIBA

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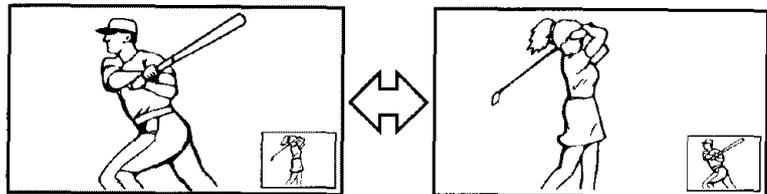
Note:
The position of the small picture in the wide screen mode ("THEATER WIDE" or "FULL") will change in order from ① to ④.
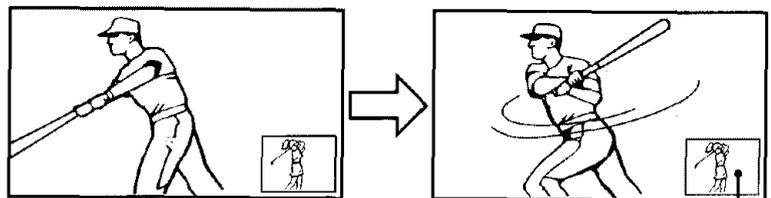
To switch the main and small picture

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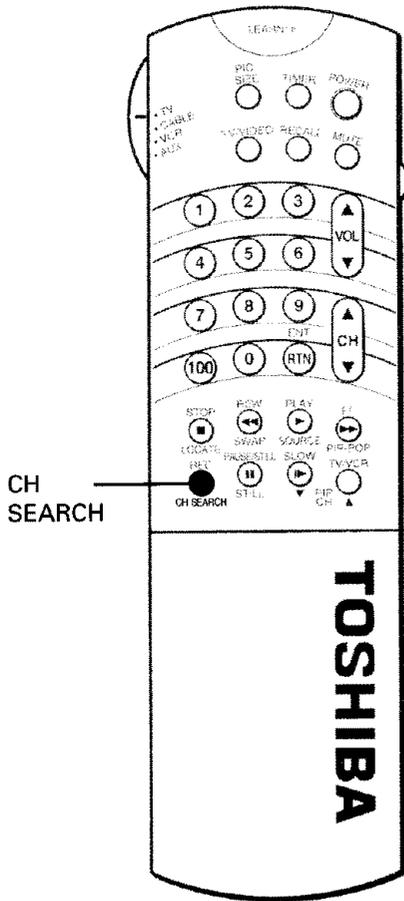To switch them again, press **SWAP** again.

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.
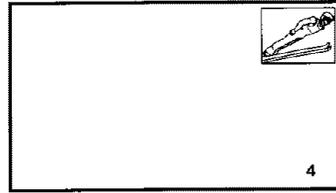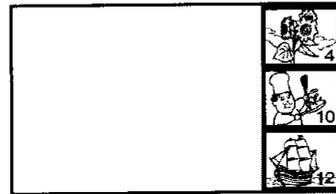
Still picture

CH SEARCH function

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

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

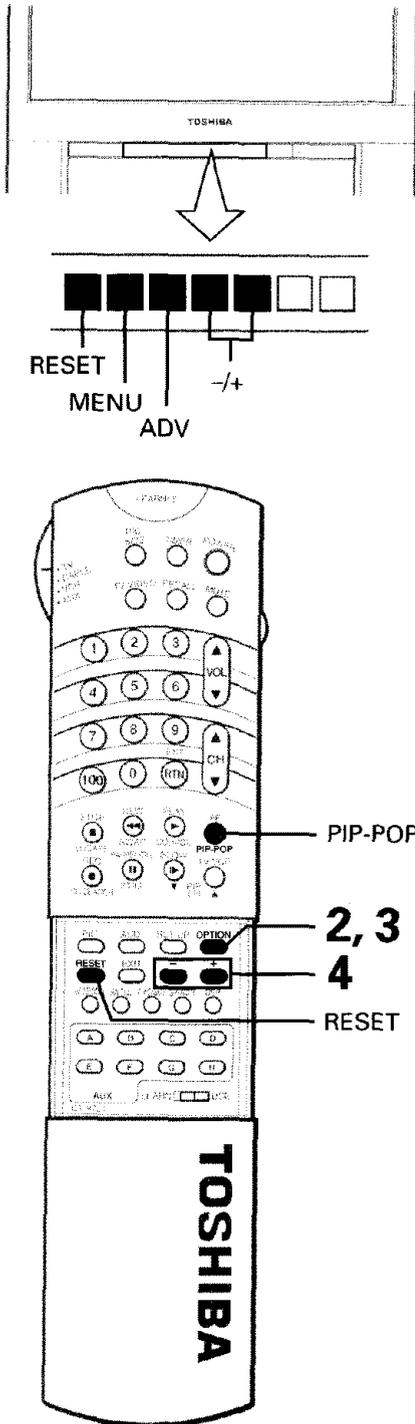Three-picture search in the P-O-P mode

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

CH
SEARCH

TOSHIBA

ADVANCED OPERATION

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.

```
                                    PIP
                                     4
```

2 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 - +
```

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

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

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

4 Press **-/+** on the Remote Control or the TV to adjust the contrast level of the small picture.
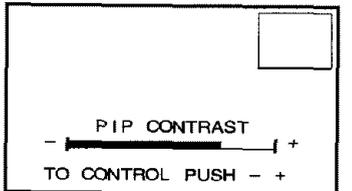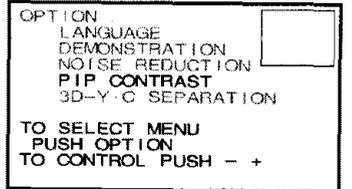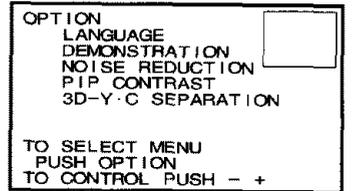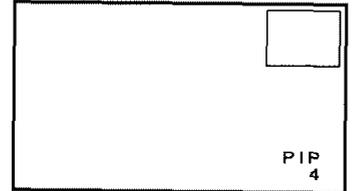
Note:
When you press the RESET button, your adjustment will automatically be set to the factory-preset level.

```
              PIP CONTRAST
   - ▬▬▬▬▬▬▬▬▬▬  + 
   TO CONTROL PUSH - +
```

RESET
MENU
ADV
-/+

PIP-POP
2, 3
4
RESET

TOSHIBA

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.
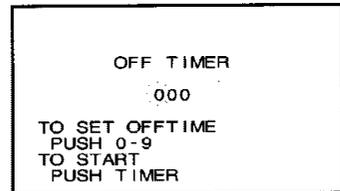
Setting the OFF Timer and the Clock

## To set the OFF timer/clock
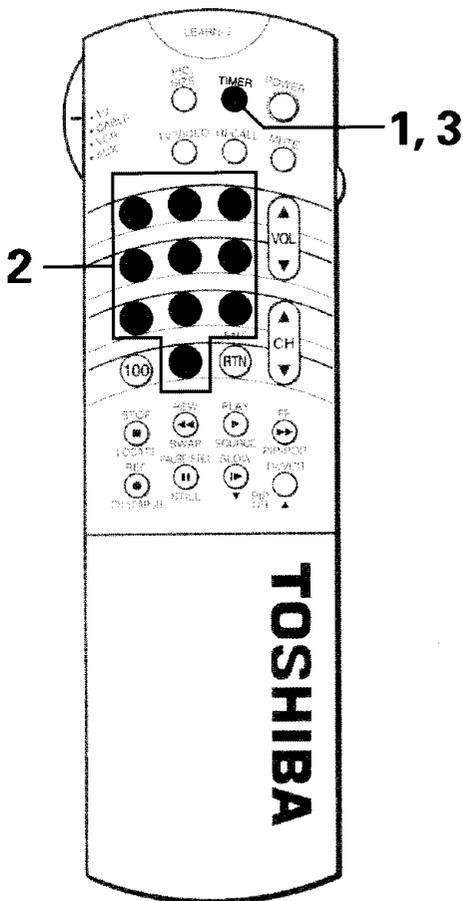
To set the OFF timer

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.

```
OFF  TIMER
        000
TO  SET  OFFTIME
   PUSH  0 - 9
TO  START
   PUSH  TIMER
```

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.

```
OFF  TIMER
        100
TO  SET  OFFTIME
   PUSH  0 - 9
TO  START
   PUSH  TIMER
```
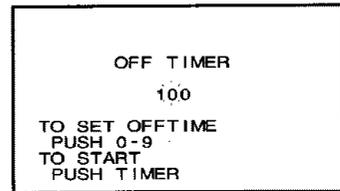
3 Press **TIMER** to start the timer.
The display color will change from magenta to cyan, and then the display will go off.

```
OFF  TIMER
        120
TO  SET  OFFTIME
   PUSH  0 - 9
TO  START
   PUSH  TIMER
```
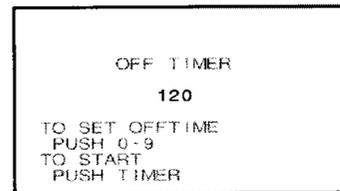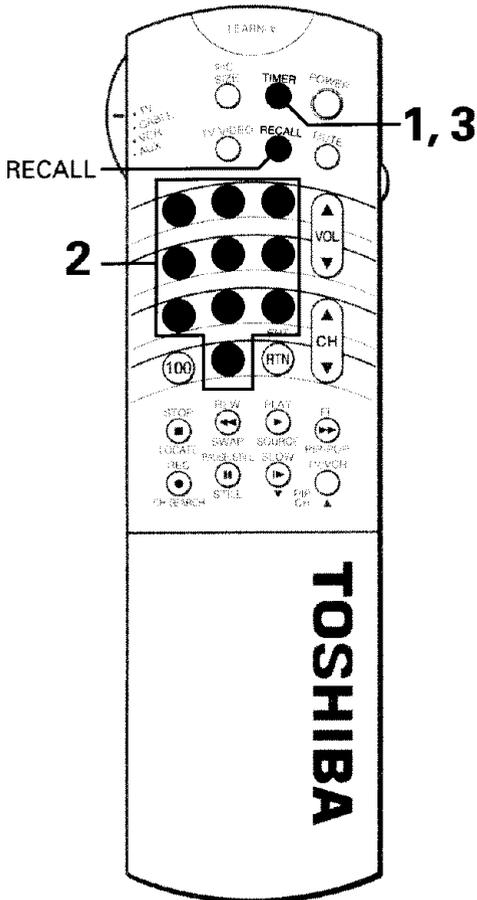
To cancel the OFF timer
Press **POWER** twice, once to turn the TV off and once to turn it on again.

• To display the time remaining, press **TIMER once**. The remaining time will be displayed on the screen.
To erase the display, press **TIMER twice.**
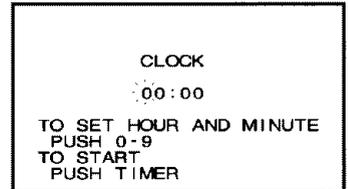
1, 3

2

TOSHIBA

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.

```
        CLOCK
        00:00
TO SET HOUR AND MINUTE
   PUSH 0-9
TO START
   PUSH TIMER
```

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.

```
        CLOCK
        09:00
TO SET HOUR AND MINUTE
   PUSH 0-9
TO START
   PUSH TIMER
```
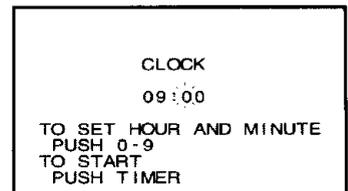
3 Press **TIMER** to start the clock. The display color will change from magenta to cyan, and then the display will go off.

```
        CLOCK
        09:25
TO SET HOUR AND MINUTE
   PUSH 0-9
TO START
   PUSH TIMER
```
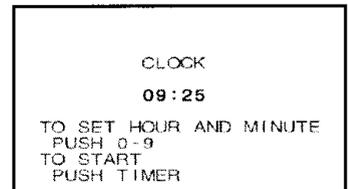
To monitor the time
Press **RECALL**.

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".)

RECALL

1, 3

2

TOSHIBA

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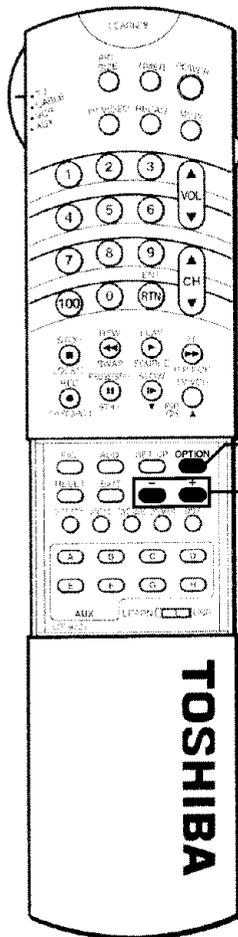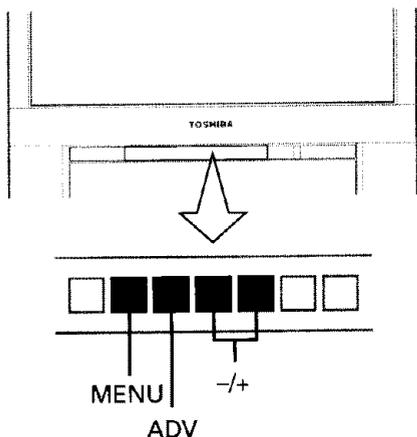
1 Press **OPTION** on the Remote Control (or **MENU** on the TV) to display the OPTION menu on the screen.

```
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
    PREFERANCE D IMAGE
APPUYEZ PIP
 POUR SELECT MENU
APPUYEZ - + POUR REGLAGE
```
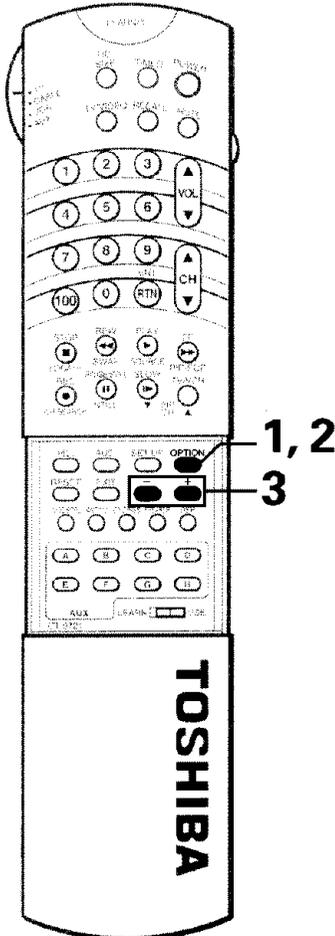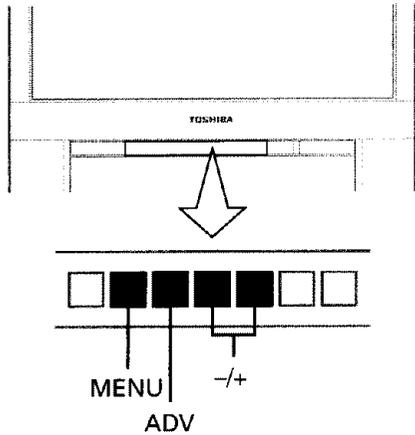
"SPANISH"
```
IMAGEN
    CONTRASTE
    BRILLO
    COLOR
    TINTE
    NITIDEZ
    TONO POR PIEL
    PREFERENCIA DE IMAGEN
APRETAR PIC
 PARA ESCOJER MENU
APRETAR - + POR CONTROL
```

MENU   –/+
ADV

1, 2

3

TOSHIBA

ADVANCED OPERATION

51

Activating Auto Demonstration

To review on-screen menus and special features

MENU | —/+
ADV

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.

```
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 "DEMONSTRATION" 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 "DEMO START" is displayed on the screen in magenta. The on-screen demonstration will start after about 6 seconds.

```
DEMO START
DEMO STOP

TO SELECT PUSH - +
```
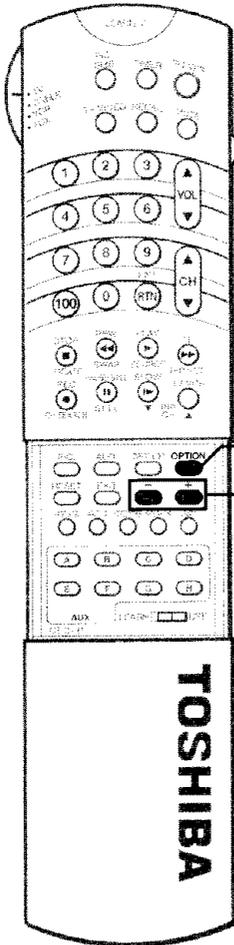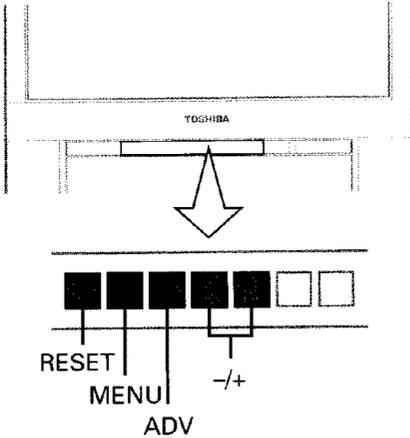
Note:
The on-screen demonstration will continue, even if the TV is turned off and on, or any other buttons are pressed.

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 SEPARTION ON
3D-Y·C SEPARTION OFF

TO SELECT PUSH - +
```
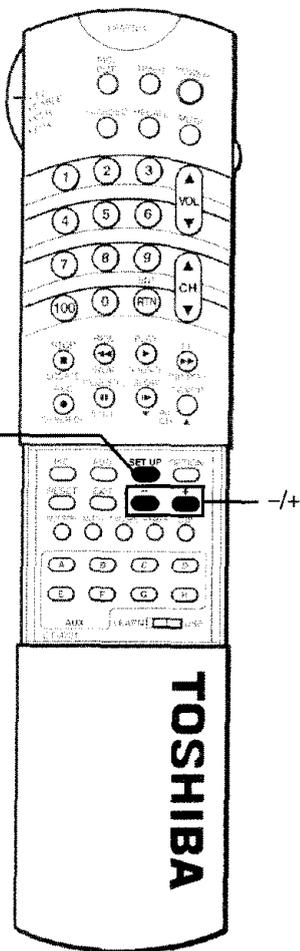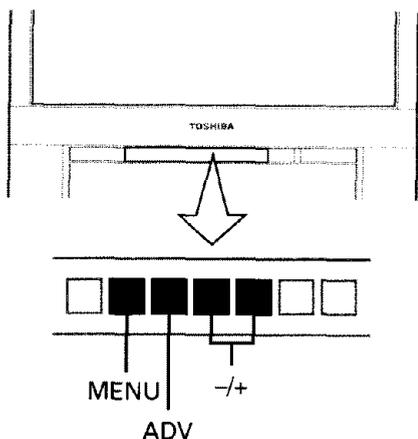
Note:
This feature will automatically be set to "ON" when you turn the TV on.

RESET
MENU
ADV
-/+
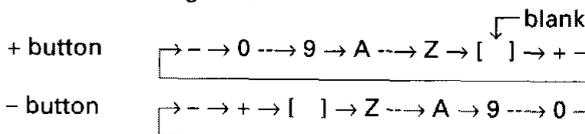
1, 2
3

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).
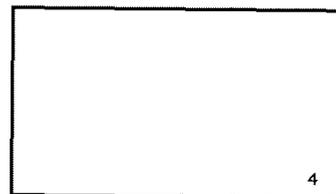
To caption channels

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

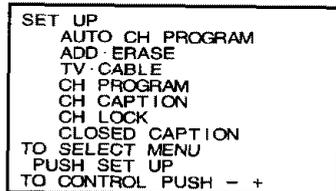Each time you press the – or + button, the character to be displayed will change in the following order.

```
                                         ┌─ blank
+ button    ┌→ – → 0 ⋯→ 9 → A ⋯→ Z → [  ] → + ┐
            └──────────────────────────────────┘

– button    ┌→ – → + → [  ] → Z ⋯→ A → 9 ⋯→ 0 ┐
            └──────────────────────────────────┘
```

MENU   –/+
ADV

SET UP

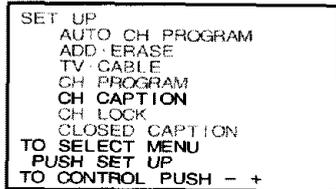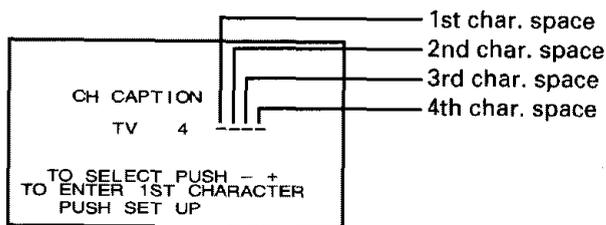**1** Select the channel you want to caption.

Example: To assign "ABCD" to channel 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 "CH CAPTION" 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 + to call up the caption setting mode display shown below on the screen.

1st char. space
2nd char. space
3rd char. space
4th char. space

```
CH CAPTION

   TV    4    ____

 TO SELECT PUSH – +
TO ENTER 1ST CHARACTER
   PUSH SET UP
```

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.

```
CH  CAPTION

   TV   4      ABCD


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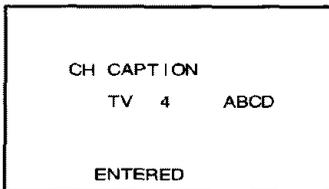
8 Repeat steps 1 through 7 for other channels.
You can caption up to 32 channels. The caption will appear when you turn the TV on, select a channel, or press the RECALL button.

ABCD ── Channel caption
4
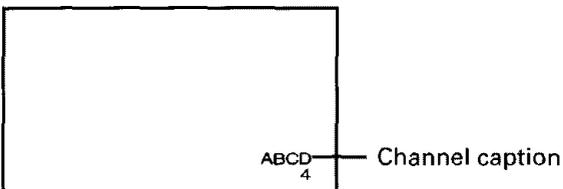
To clear the captioning

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.
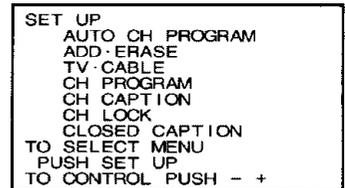
To lock out channels

MENU
ADV

Number buttons

SET UP

−/+
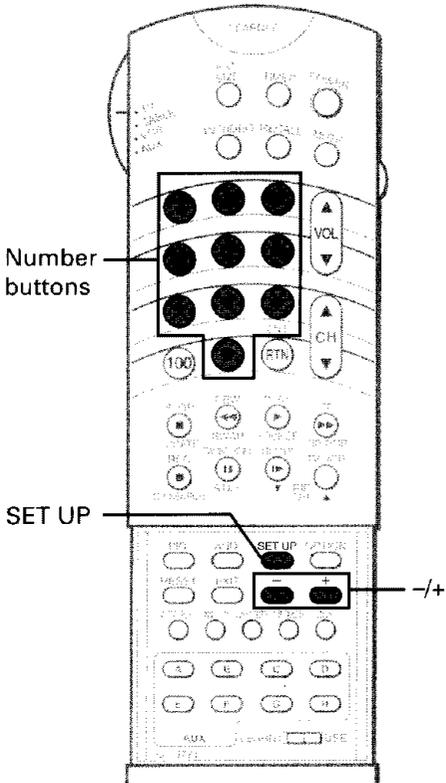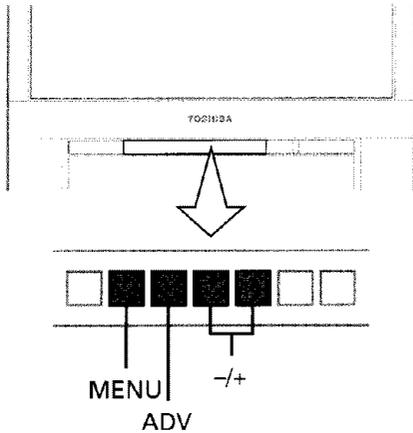
Note:
If different code numbers are used when you lock out a channel, the last one has priority over the preceding ones.
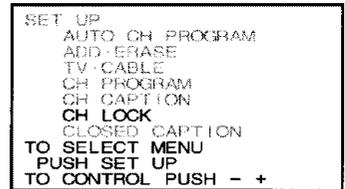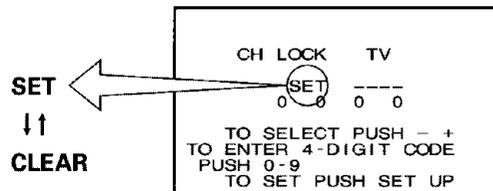
1 Select a channel you want to lock out.

```
                    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 "CH LOCK" 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 + to call up the channel lock adjustment mode display shown below.
Each time you press the button, "SET" and "CLEAR" alternate.
Select "SET".

```
        CH LOCK    TV
SET       SET      ----
 ↓↑     0   0    0   0
CLEAR    TO SELECT PUSH − +
         TO ENTER 4-DIGIT CODE
         PUSH 0 - 9
         TO SET PUSH SET UP
```

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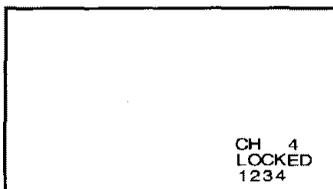**Pick a number that is easy to remember.**

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

1 ---→ **12** --→ **123** -→**1234**

56

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

```
                    CH   4
                    LOCKED
                    1234
```
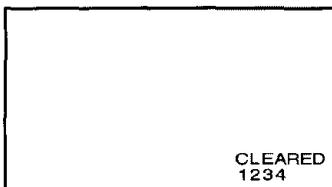
7 Repeat steps 1 to 6 for other channels.

To restore channels

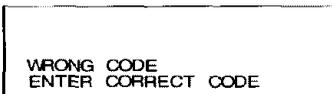**1** Select "CLEAR" following steps 2 to 4 on the previous page.

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.

```
                    CLEARED
                    1234
```

If a wrong code has been entered
These messages appear. Try to enter the correct code again.
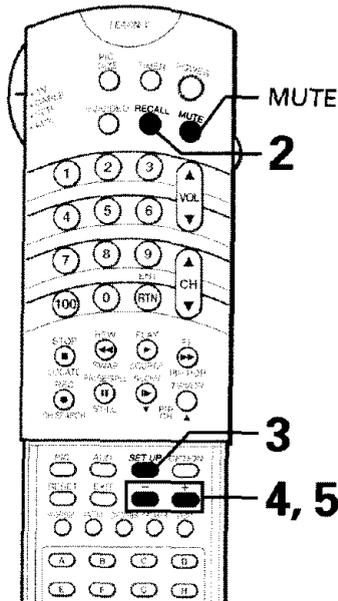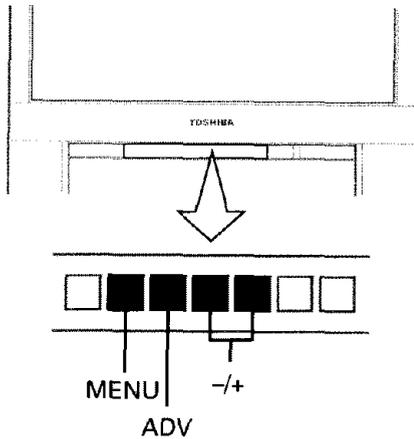
```
WRONG CODE
ENTER CORRECT CODE
```

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.
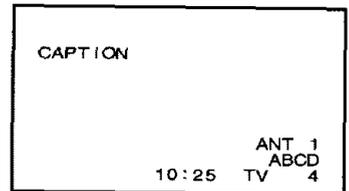
To use Closed Captioning
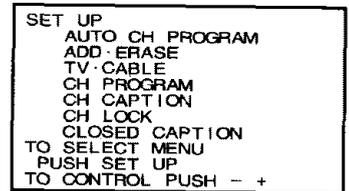
To view captions

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.

```
CAPTION


                        ANT  1
                          ABCD
              10:25   TV   4
```

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

```
    CLOSED  CAPTION

CAPTION  1     TEXT  1
CAPTION  2     TEXT  2
OFF            OFF

TO  SELECT  PUSH  -  +
```
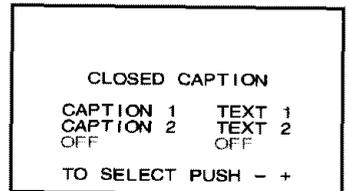
5 Press – or + until "CAPTION 1" or "CAPTION 2" is displayed in magenta.
The CAPTION 2 mode may be utilized for alternate languages if they are being transmitted.

MENU   –/+
ADV

MUTE

2

3

4, 5

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

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.
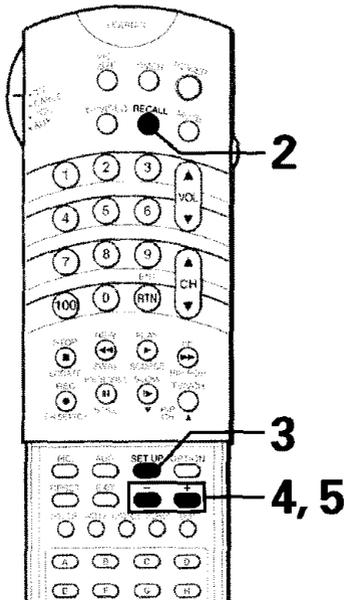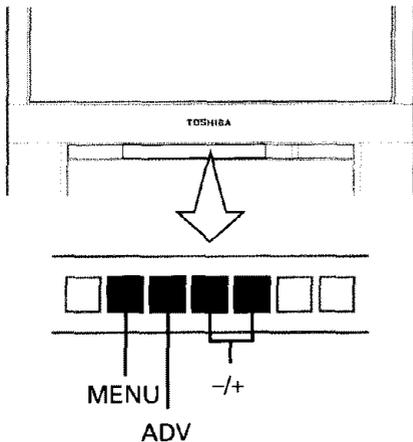
To view text

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.
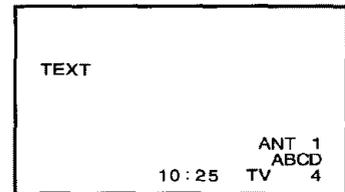
```
TEXT



                   ANT 1
                    ABCD
          10:25  TV   4
```

3 Press **SET UP** repeatedly on the Remote Control (or **ADV** on the TV) until "CLOSED CAPTION" 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 + 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.
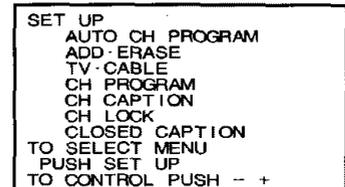
```
    CLOSED CAPTION

CAPTION 1    TEXT 1
CAPTION 2    TEXT 2
OFF          OFF

TO SELECT PUSH - +
```
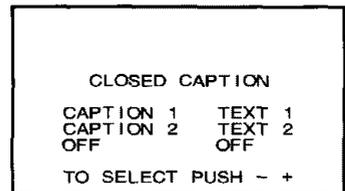
5 Press – or + until "TEXT 1" or "TEXT 2" is displayed in magenta.

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.

MENU   –/+

ADV

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

ADVANCED OPERATION

External Equipment Connections
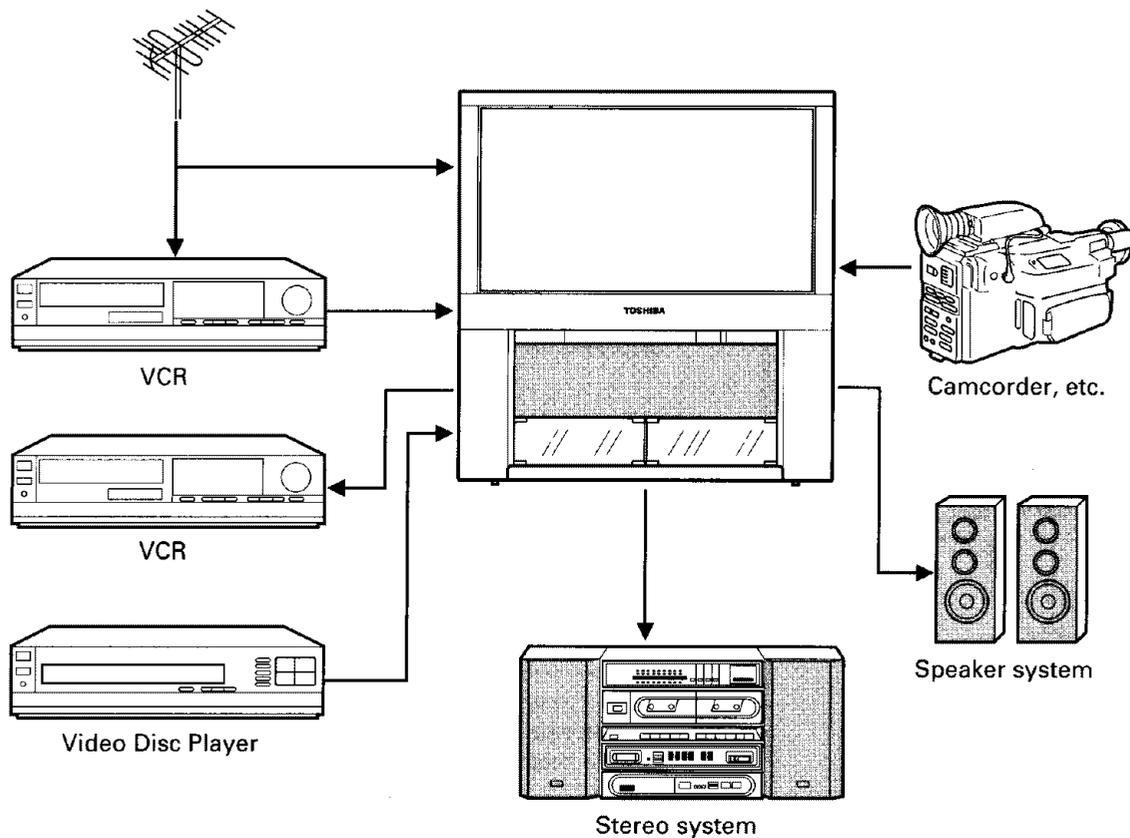
To connect video/audio equipment

VCR

VCR

Video Disc Player

Camcorder, etc.

Speaker system

Stereo system

- 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.

TV front

Behind the door

IN-VIDEO 3

S-VIDEO VIDEO ┌AUDIO┐
                L/MONO   R

VIDEO 3 INPUT jacks

TOSHIBA

TV rear

VARIABLE AUDIO
OUTPUT jacks

EXTERNAL
SPEAKER
terminals

EXT.
SPEAKER(8Ω)

ANT(75Ω)

ANT-1 OUT ANT-2

S-VIDEO

OUT

R L

VAR
AUDIO

VIDEO

MONO

AUDIO
R

VIDEO

MONO

AUDIO
R

VIDEO

VIDEO-1

VIDEO-2

IN

OUT

R L

MAIN SPEAKER
EXT INT

R L
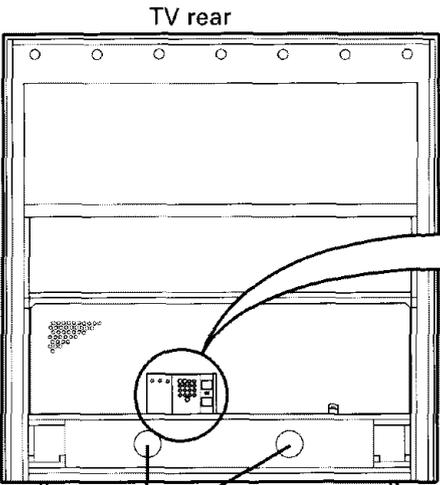
REAR
SPEAKER(8Ω)

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

VIDEO 1 INPUT
jacks

VIDEO 2 INPUT jacks

MAIN
SPEAKER
switch

REAR SPEAKER
terminals

VIDEO/AUDIO
OUTPUT jacks

CONNECTING OTHER
EQUIPMENT

61
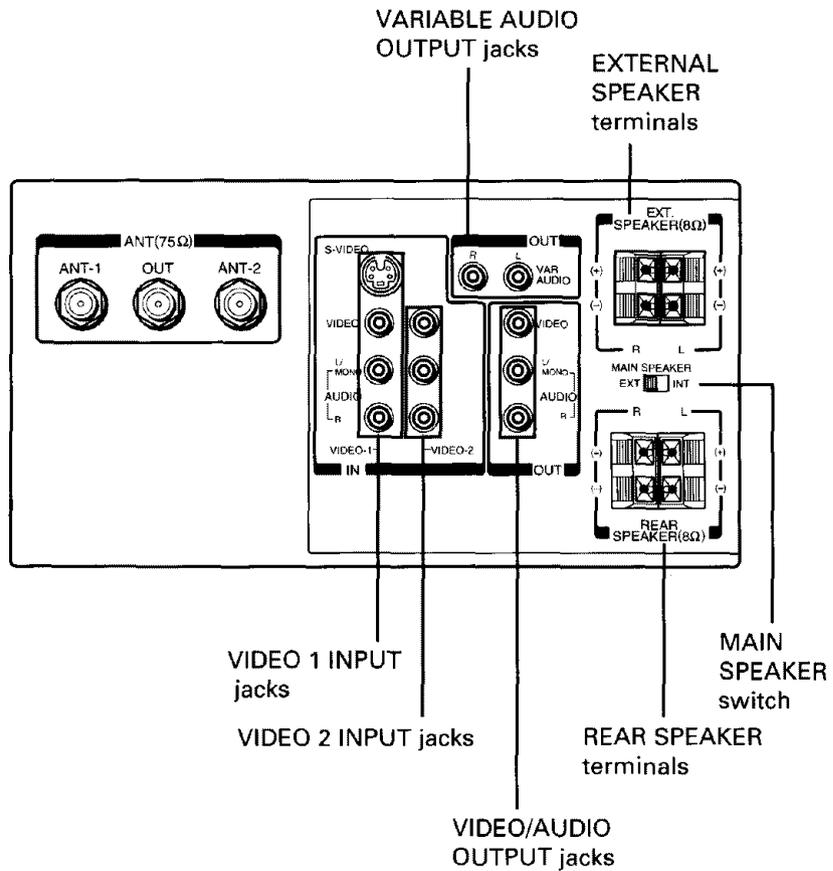
External Equipment Connections (continued)

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

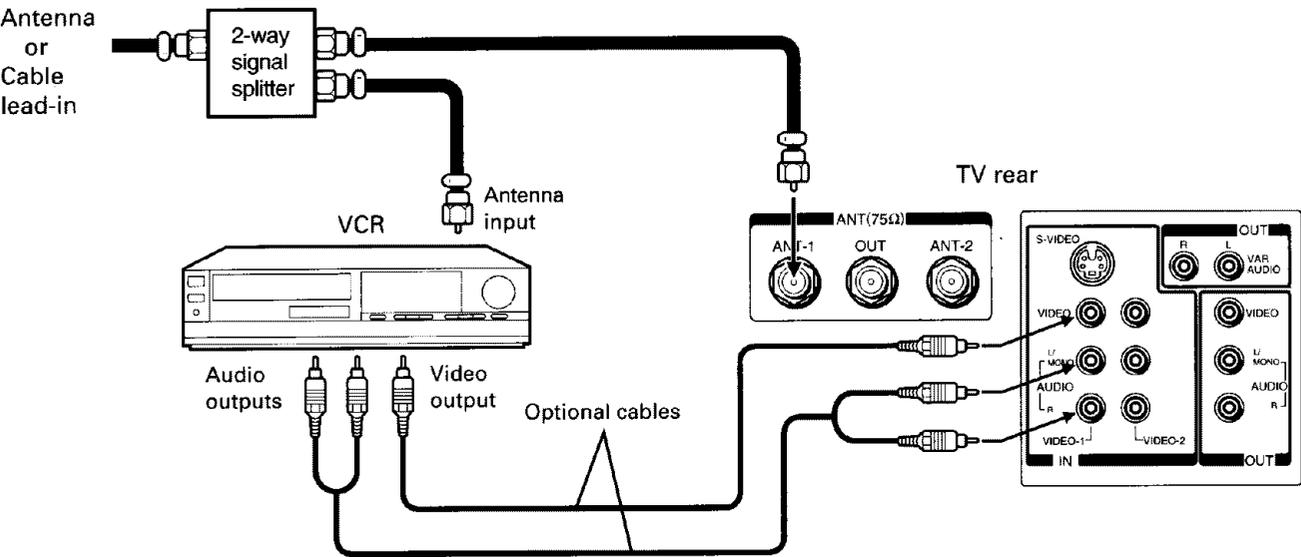Press **TV/VIDEO** on the Remote Control (or **ANT/VIDEO** on the TV) repeatedly to select the appropriate source. Each time you press the button, the TV, VIDEO 1, VIDEO 2 or VIDEO 3 source will be selected in order. The selected source will be displayed in magenta.

```
       TV
       VIDEO 1
       VIDEO 2
       VIDEO 3
TO SELECT PUSH TV·VIDEO
```

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".
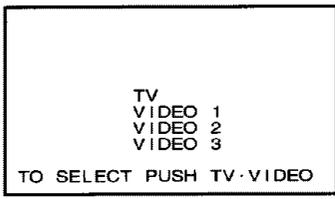
To connect a VCR with an S-VIDEO jack

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.
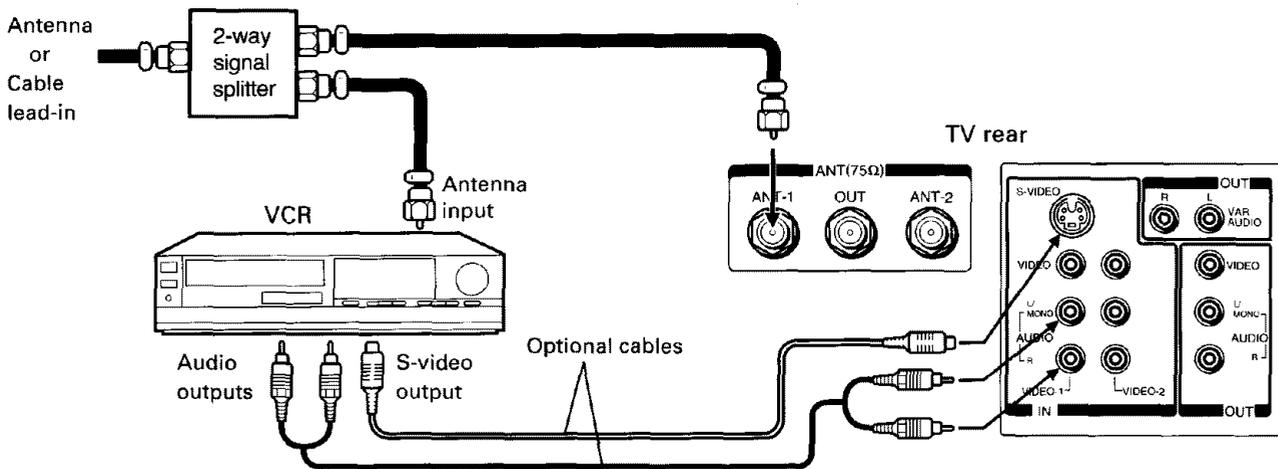
To select video input source

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.
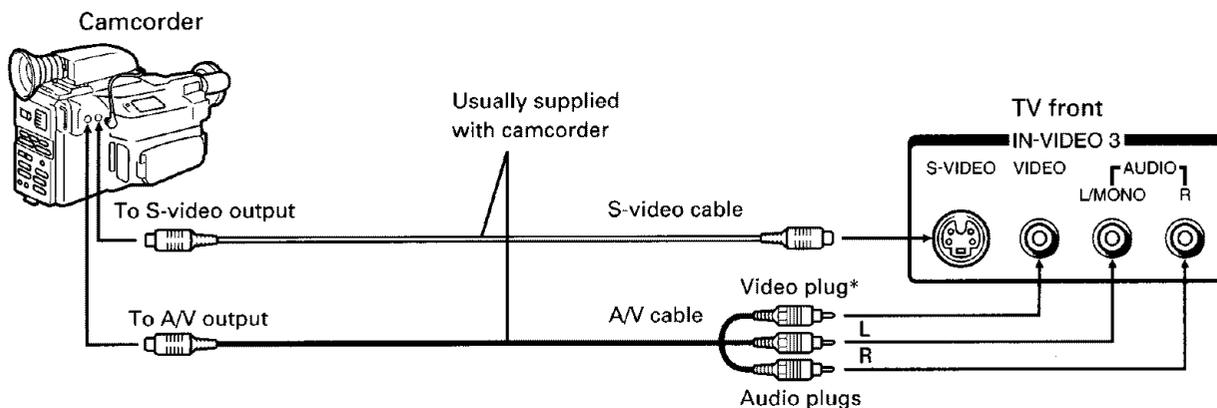
CONNECTING OTHER EQUIPMENT

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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.

Camcorder

Usually supplied
with camcorder

TV front

IN-VIDEO 3

S-VIDEO   VIDEO   ┌AUDIO┐
                          L/MONO   R

To S-video output   S-video cable

Video plug*

To A/V output   A/V cable

Audio plugs

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.

TV rear

Video output — Audio outputs

VCR for playback

Audio inputs — Video input
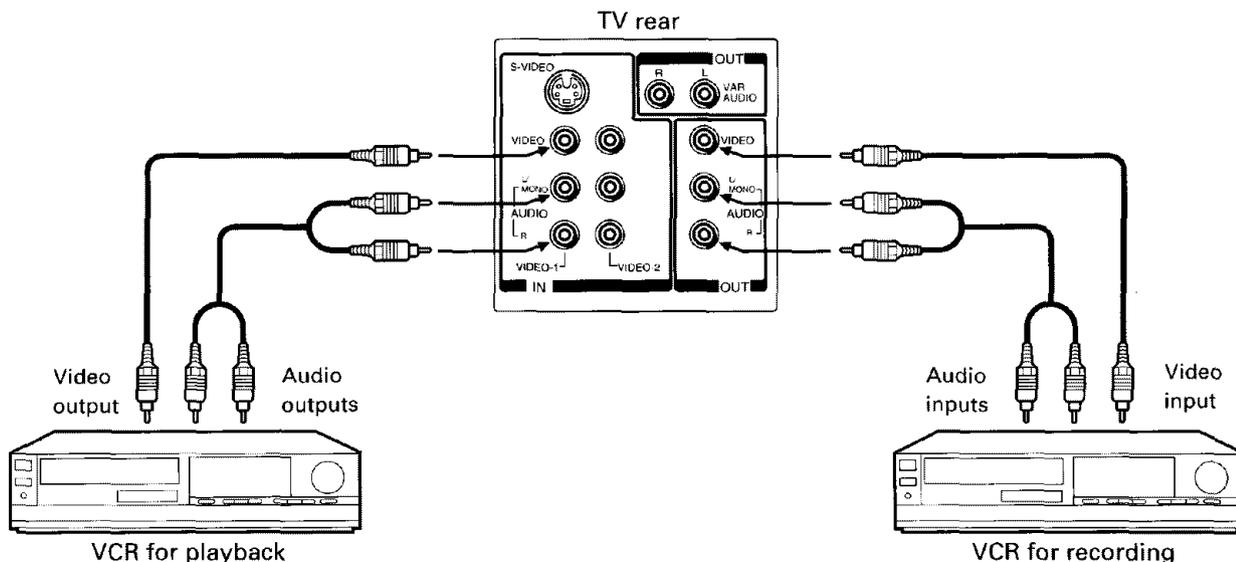
VCR for recording

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.

CONNECTING OTHER EQUIPMENT

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.

TV rear

External input

Stereo amplifier

Fixed level AUDIO OUTPUT*

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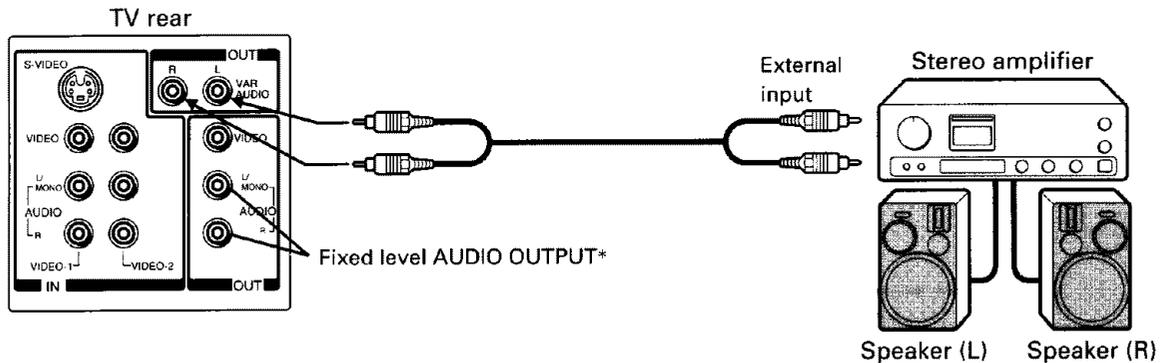
* The "Fixed level" audio output from the VIDEO/AUDIO OUTPUT jacks is also available for connecting an audio cassette recorder (or amplifier) to record audio from the TV. This constant audio signal is not affected by pressing the VOLUME controls on the TV or the Remote Control.

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.
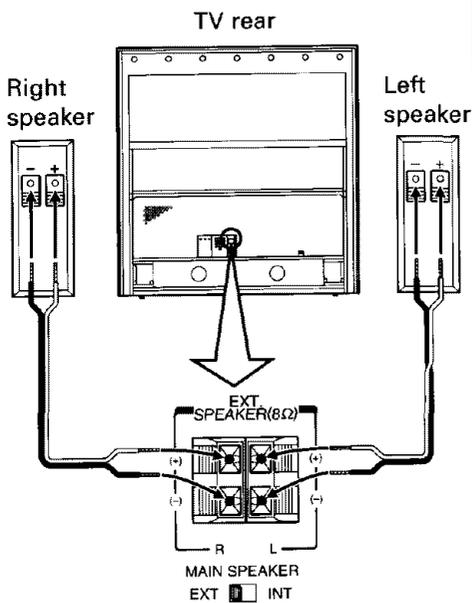
```
SPEAKERS ON
SPEAKERS OFF

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.
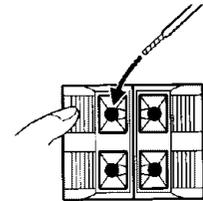
To connect external speakers

Before connecting the speakers, turn the TV off.

TV rear

Right speaker

Left speaker

EXT
SPEAKER(8Ω)

R   L
MAIN SPEAKER
EXT ▮ INT

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.*

MAIN SPEAKER
EXT ▦ INT
←

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.
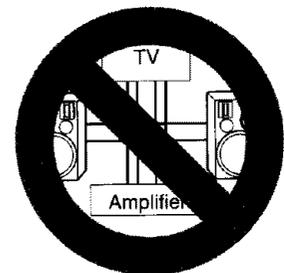
Speaker positioning

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.

Main   T V   Main
L   R

Surround L   Surround R

CONNECTING OTHER EQUIPMENT

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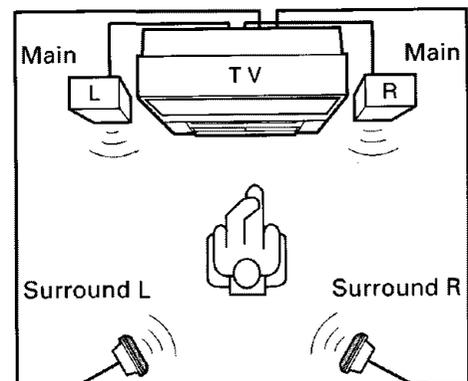
Before Calling Service Personnel

- 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	• Be sure power cord is plugged in. • May be station trouble. • Check antenna connections. • Check antenna for broken wires.	• Press POWER button. • Try another channel. • Re-orient antenna.
No sound, picture OK	• May be station trouble. • Check if SPEAKER ON/OFF function (see page 66) or MAIN SPEAKER switch (see page 67) is properly set.	• Try another channel. • Adjust VOLUME.
Poor sound, picture OK	• May be station trouble. • May be local interference from appliance. • Check antenna connections.	• Try another channel. • Adjust VOLUME. • Adjust BASS, TREBLE, or BALANCE control. • Re-orient antenna.
Poor picture, sound OK • Snowy picture • Lines in picture • Distorted picture • Weak picture	• May be station trouble. • May be local interference from appliance. • Check antenna connections. • Check antenna for broken wires.	• Try another channel. • Adjust BRIGHTNESS. • Adjust CONTRAST. • Adjust SHARPNESS. • Re-orient antenna.
Poor reception of broadcast channels	• If VCR is connected, check TV/VCR switch. • Check antenna connections. • Check antenna for broken wires.	• Try another channel. • Re-orient antenna.
Unable to select a certain channel	• 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.)	• Try another channel.
Multiple images (ghosts)	• May be station trouble. • Check antenna connections.	• Try another channel. • Re-orient antenna.
Poor color or no color	• 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.	• Try another channel. • Adjust TINT. • Adjust COLOR. • Re-orient antenna.
Weak and noisy stereo program	• Check antenna connections. • Check antenna for broken wires.	• Select the MONAURAL mode. (See page 38.) • Re-orient antenna.
No stereo or SAP sound from a known MTS broadcast	• Check if MTS function is properly set.	• Select STEREO or SAP mode. (See page 38.)
Remote Control does not work	• Check if TV/CABLE/VCR/AUX switch is properly set. • Be sure power cord is plugged in. • Check battery in Remote Control.	• Change batteries.

ADDITIONAL REFERENCE

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: 25¼ 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 nunber **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, pleace contact one of the following TACP/THI service Centers:

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

Toll Free
800-631-3811

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

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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. Ⓐ

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