

TOSHIBA

OWNER'S MANUAL

Video Cassette Recorder

Hi-Fi **VHS**

M-685

VCR Plus+
w/ Cable Channel
Changer

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BY634031

Safety Precautions



Your VCR operates on 120 volts, 60Hz (normal household current) and has a polarized plug. Because one blade of the plug is wider than the other, the plug fits into the wall socket only one way. Do not defeat the safety feature of this plug. If you need an extension, use a polarized cord.

CAUTION: To prevent electric shock, match wide blade of plug to wide slot, fully insert.

Mise en garde: Pour prévenir les chocs électriques, ne pas utiliser la fiche polarisée de cet appareil avec une rallonge, une prise de courant ou une autre sortie, à moins que les lames ne puissent être insérées à fond sans qu'aucune partie soit laissée à découvert.

WARNING: To prevent fire or shock hazard, do not expose this VCR to rain or moisture.

Illustrated below is the label on the back of your Video Cassette Recorder



CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN



The symbol of a lightning flash within a triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electrical shock.



AVIS

RISQUE DE CHOC ÉLECTRIQUE
NE PAS OUVRIR



An exclamation point within a triangle is intended to alert the user to the presence of important operating and maintenance(service) instructions in the literature accompanying the product.

Caution: To reduce the risk of electric shock, do not remove the cover or back. No user-serviceable parts are inside. If you spill liquid on the VCR, disconnect the power cord to prevent possible fire or shock hazard and consult authorized service personnel. Moisture can damage internal parts. Refer all service to Authorized TOSHIBA VCR Service center personnel only.

Caution: Maintain electrical safety. Powerline-operated equipment or accessories connected to this unit should bear the UL listing mark or CSA certification mark on the accessory itself and should not have been modified so as to defeat the safety feature. This will help avoid any potential hazard from electric shock or fire. If in doubt, contact qualified service personnel.

Note to Cable TV Installer :

This reminder is provided to call your attention to Article 820-40 of the National Electrical Code (Section 54 of Canadian Electrical Code, Part 1), 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.

User Installer Caution:

Your authority to operate this FCC certified equipment could be voided if you make changes or modifications not expressly approved by this party responsible for compliance to part 15 FCC rules.

Caution: The unauthorized recording of television programs and other materials may infringe the rights of others.

Accessories

Check to make sure that you have all of the following accessories before disposing of the packing materials.

① Antenna Cable



② Safety Instruction



③ Remote Control Unit (Wireless) with two AAA batteries



In the spaces provided below, record the Model and Serial No. located at the rear of your video cassette recorder.

Model No. M-685

Serial No. _____

Retain this information for future reference.

Using This Manual

Congratulations on your choice of a TOSHIBA M-685. You have selected a high-quality, precision-engineered instrument designed to give you years of video and audio enjoyment.

To get the best performance from your new VCR, it is important that you carefully read and follow the operating instructions in this manual in the sequence in which they are presented.

Should you experience a problem, please follow the "Trouble Checks" on page 54. The warranty describes what will be done for you should your new VCR need service during the warranty period. It also tells you how and from whom you should request service.

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IMPORTANT SAFEGUARDS

CAUTION: PLEASE READ AND OBSERVE ALL WARNINGS AND INSTRUCTIONS GIVEN IN THIS OWNER'S MANUAL AND THOSE MARKED ON THE UNIT. RETAIN THIS BOOKLET FOR FUTURE REFERENCE.

This set has been designed and manufactured to assure personal safety. However, improper use can result in electrical shock or fire hazard. The safeguards incorporated in this unit will protect you if you observe the following procedures for installation, use and service. This unit is fully transistorized and does not contain any parts that can be repaired by the user.

DO NOT REMOVE THE CABINET COVER OR YOU MAY BE EXPOSED TO DANGEROUS VOLTAGES. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



1. After unpacking this video product, read the owner's manual carefully and follow all the operating and other instruction.

2. This video product should be operated only from the type of power source indicated on the marking labels. If you are not sure of the type of power supply to your home, consult your sales person or your local power company. For video products intended to operate from battery power or other sources, refer to the operating instructions.

3. This video product is equipped with a polarized alternating current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.

4. Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the video product and to protect it from overheating. These openings must not be blocked or covered. The openings should never be blocked by placing the video product on a bed, sofa, rug or other similar surface. This video product should never be placed near or over a radiator or heat register. This video product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.

5. Do not expose this video product to rain or use near water. For example: near a bath tub, wash bowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool and the like.

6. Unplug the video product from wall outlet before cleaning. Use only a soft damp cloth and never use benzene, thinner or other solvents for cleaning.

IMPORTANT SAFEGUARDS (continued)



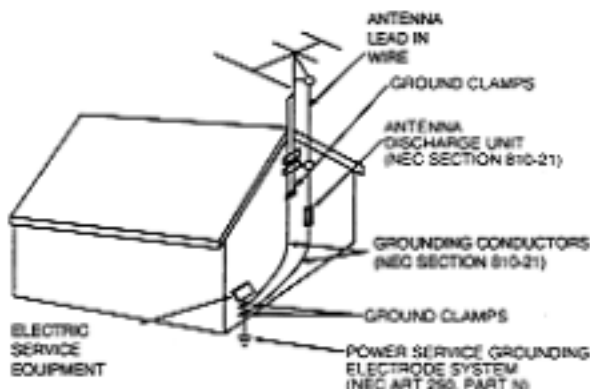
7. Do not allow anything to rest on the power cord. Do not locate this video product where the cord will be walked on.



8. Do not overload wall outlets and extension cords because this can result in fire or electrical shock.

9. If an outside antenna or cable system is connected to the video product, be sure the antenna or cable system is grounded to provide some protection against voltage surges and built-up static charges. Section 810 of the National Electrical Code, ANSI/NFPA 70, provides information with respect to proper grounding of the mast and supporting structure, ground of the lead-in wire to an antenna discharge unit, size of grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.
- a. Use No. 10 AWG (5.3 mm²) copper, No. 8 AWG (8.4 mm²) aluminum, No. 17 AWG (1.0 mm²) copper-clad steel or bronze wire, or larger, as a ground wire.
 - b. Secure antenna lead-in and ground wires to house with stand-off insulators spaced 4.6 feet (1.22-1.83 m) apart.
 - c. Mount antenna discharge unit as close as possible to where lead-in enters house.
 - d. Use jumper wire not smaller than No. 6 AWG (13.3 mm²) copper, or the equivalent, when a separate antenna-grounding electrode is used. See NEC section 810-21 (g).

EXAMPLE OF ANTENNA GROUNDING AS PER NATIONAL ELECTRICAL CODE



10. An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuit, or where it can fall on such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits since contact with them might be fatal.



11. For added protection for this video product receiver during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the video product due to lightning and power-line surges.

IMPORTANT SAFEGUARDS (continued)



12. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.



13. Never push objects of any kind into this video product through openings since they may touch dangerous voltage points or short-out parts that could result in a fire or electrical shock. Never spill liquid of any kind on the video product.
14. Do not use attachments not recommended by the video product manufacturer since they may cause hazards.



15. Do not place this video product on an unstable cart, stand, tripod, bracket, or table. The video product may fall, causing serious injury or damage to the appliance. Use only with a cart, stand, tripod, bracket or table recommended by the manufacturer or sold with the video product.



16. Unplug this video product from the wall outlet and refer servicing to qualified service personnel under the following conditions :

- A. When the power-supply cord or plug is damaged.
- B. If liquid has been spilled or objects have fallen into the video product.
- C. If the video product has been exposed to rain or water.
- D. If the video product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions because an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the video product to its normal operation.
- E. If the video product has been dropped or the cabinet has been damaged.
- F. When the video product exhibits a distinct change in performance.

Do not attempt to service this video product yourself because opening or removing cover may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.



17. Upon completion of any service or repairs, request the service technicians assurance that only Factory Authorized Replacement Parts that have the same characteristics as the original parts were used, and that routine safety checks have been performed to determine that the video product is in safe operating condition. Unauthorized parts may result in fire, electrical shock, or other hazards.

GENERAL INSTALLATION INFORMATION

Choosing a Location for your VCR

- Choose a location that is convenient, but away from sources of heat such as direct sunlight and heating units.
- If the VCR is to be installed in an equipment rack or cabinet with other components, be sure there is adequate ventilation at the back and around the sides of the components. The VCR should not be placed on or directly above a stereo amplifier because of the heat that rises from the amplifier.
- Choose a flat surface at least as large as the VCR so that it rests on its mounting feet. It is important that air can pass through the ventilation holes in the bottom of the unit to prevent it from overheating. Do not operate the VCR on a rug or carpet because the pile will obstruct these holes.

Some TV sets may cause interference in home VCRs. To avoid interference and get the best performance from your VCR, follow these guidelines:

- When placing the VCR under a TV, keep at least 18 inches between the bottom of the TV and the top of the VCR.
- If interference is present when the VCR is used on top of the TV or at the 18-inch distance below the TV set, move the VCR to a position beside the TV.
- If moving the VCR does not solve the interference problem, try plugging the VCR into a different wall socket.
- If interference continues after all of the above, call your dealer or service representative.

What Are VHF and UHF?

When television broadcasting began, twelve channels were called VHF (very high frequency) channels and numbered 2 through 13.

Later, as television broadcasting expanded channel 14 and higher we called UHF (ultra high frequency) channels.



Your home antenna is a "signal receiver" that picks up TV broadcasts out of the air. There are several different types of antennas:

- Some receive only VHF channels.
- Some receive only UHF channels.
- Some receive both VHF and UHF channels.

Depending on the type of antenna, signals from the antenna can be conducted through either flat "twin-lead" cable or round "coaxial" cable as shown below.

Types of Antenna Cables



Cable-TV (CATV) supplies television signals directly by round cable without the need for a home antenna.

Cable-TV can deliver both VHF and UHF channels and programs not available from a home antenna. You will usually get better picture quality (for recording TV programs) if you connect an outdoor antenna or cable-TV system to your VCR. If this is not possible (or if you are in an area with good signal reception), use a good quality indoor antenna.

INSTALLATION

TV Antenna and VCR Connections

To connect the VCR to an antenna (Fig. 1) or to a combination VHF/UHF antenna (Fig.2), take the following steps:

Remove the VHF and/or UHF cable from your TV terminals and reconnect them to the VCR terminal as shown in the diagrams below.

Note: For VHF and UHF connections, follow procedure ① if you have a 75 Ω (ohm) coaxial cable, and follow procedure ② if you have a 300 Ω (ohm) twin lead connector.

Figure 1. VHF or UHF Reception Areas

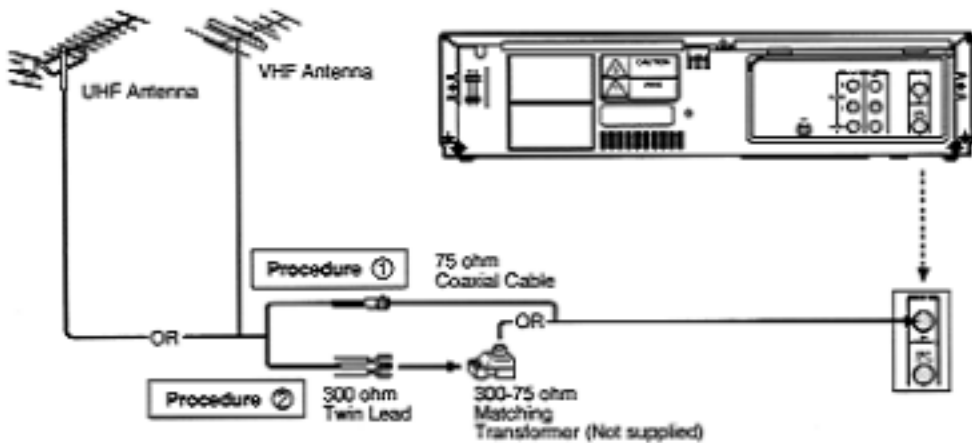
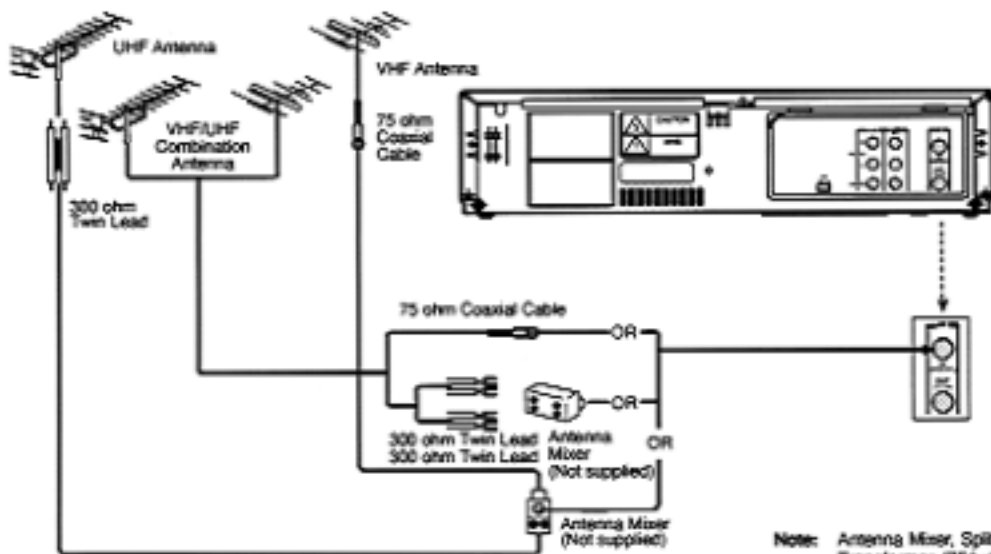


Figure 2. Combined VHF/UHF Reception Areas



Note: Antenna Mixer, Splitter and Matching Transformer (75 Ω $\leftrightarrow$ 300 Ω , 300 Ω $\leftrightarrow$ 75 Ω) are available from your local electronics store.

INSTALLATION(continued)

VCR and TV Connections

Connection to TV Antenna Terminals

Fig. 1 VHF (75 ohm/300 ohm) or VHF (75 ohm) terminal connection

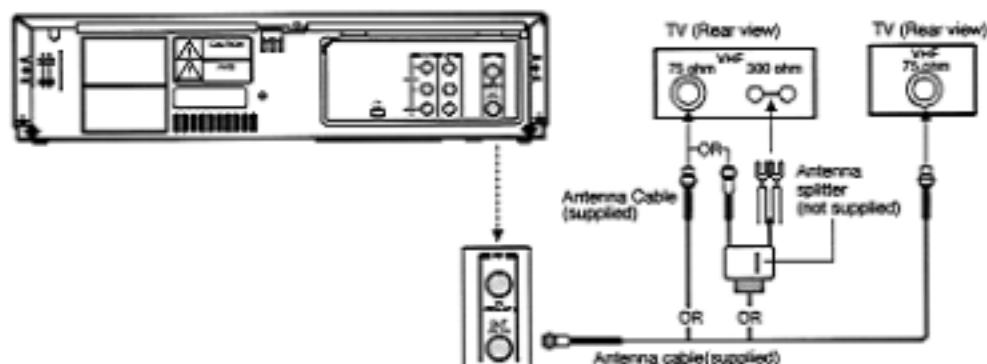
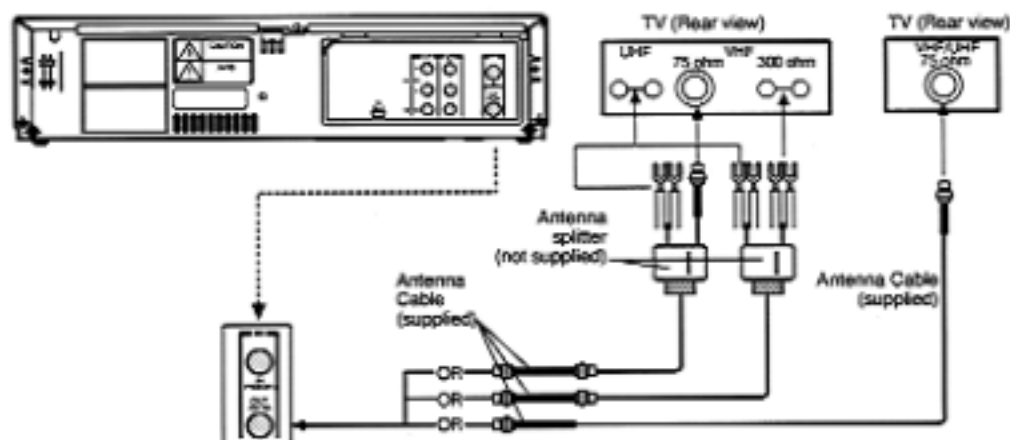
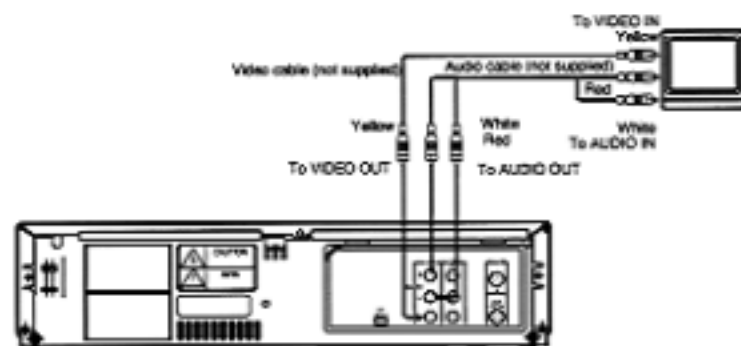


Fig. 2 VHF/UHF (75 ohm/300 ohm) or VHF/UHF (75 ohm) terminal connection



Connection to the TV with "VIDEO IN" and "AUDIO IN" connections



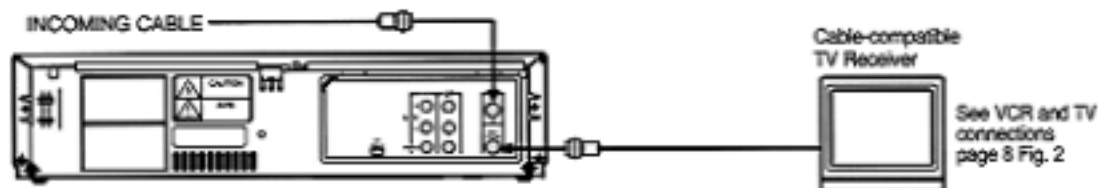
INSTALLATION (continued)

CATV Connections

There are several different cable television systems. There may be times when you use this VCR with one of these cable TV services.

We recommend that you consult your cable TV company to make sure that the cable is connected properly to match the cable TV system you want to watch.

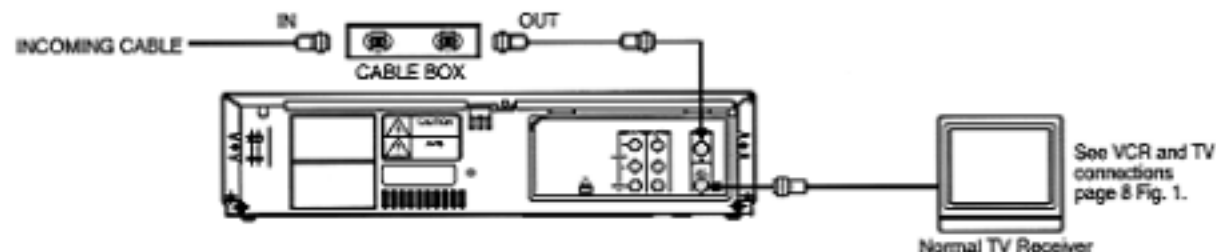
Fig. 1 To record and watch unscrambled channels



This set-up will enable you to do the following :

- Record unscrambled channels (limited by the capabilities of VCR tuner, for example 122 channel or 131 channel tuning).
- Record one channel and watch another.
- Use the programmable timer.

Fig. 2 To record and watch the same channel (unscrambled / scrambled)



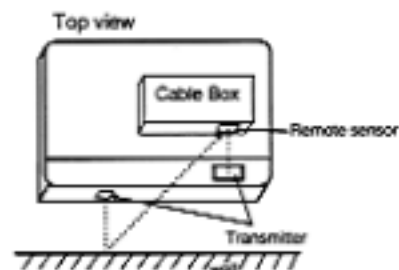
This set-up will enable you to do the following :

- Record all available cable channels through the cable box.
- When using the programmable timer recording, the cable box must be ON.

Note: ■ Set VCR to the output channel of the cable box.
■ This set-up will not allow you to record one channel and watch another.

✕ Position Cable Box

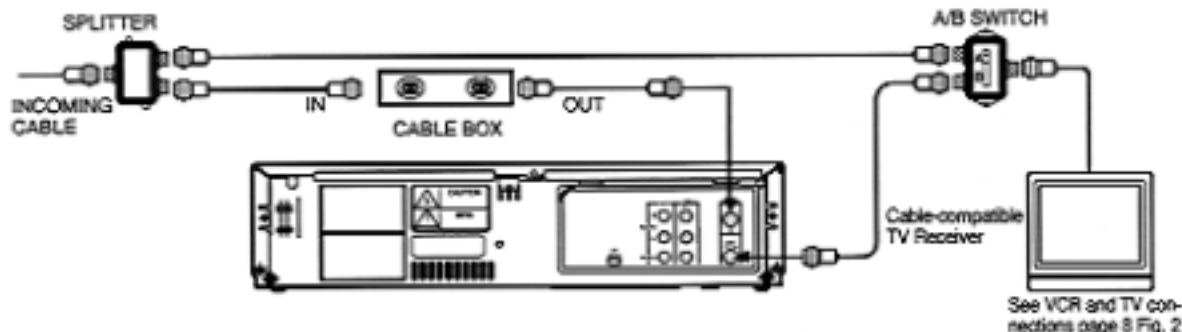
Position a remote-controllable cable box on top of the VCR as shown. Make sure that the front of the cable box (remote sensor) projects out in front of the VCR (transmitter).



INSTALLATION (continued)

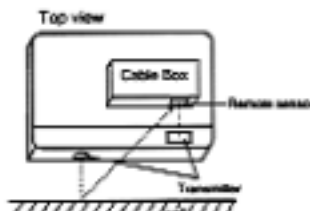
Fig. 3 To record and watch the same channel (unscrambled or scrambled) when the A/B switch is in the B position.

Fig. 4 To record one unscrambled or scrambled channel and watch another unscrambled channel when the A/B switch is in the A position.



Position Cable Box

Position a remote-controllable cable box on top of the VCR as shown. Make sure that the front of the cable box (remote sensor) projects out in front of the VCR (transmitter).



This set-up will enable you to do the following.

- Record all cable channels from the cable box.
- Record one scrambled channel and watch another unscrambled channel.
- Use the TV remote control when the A/B switch is in the "A" position.
- When using the programmable timer recording, the cable box must be ON.

Notes:

- Set the VCR channel selector to output channel of the cable box.
- Select the channel to be recorded on the cable box.
- Set the TV channel selector to output channel of VCR (3 or 4).

"Unscrambled" Cable Channels

Cable companies usually include "Unscrambled" channels in their basic subscription price. Depending on the tuning capability of your TV (how many cable channels your TV is capable of tuning to) you may not need a cable box (supplied by the cable company) to view "unscrambled" cable channels on your TV set.

"Scrambled" Channels

Extra (optional) pay cable channels, like HBO and Cinemax in some localities, are often "scrambled" by the cable company. To view these channels on your TV, you must use the cable (decoder) box supplied by the cable company.

Cable Box (supplied by Cable Company)

Until recently, all television and VCR receivers were equipped with 69 channel tuners capable of tuning the 12 standard VHF channels (2-13) and the 56 UHF channels (14-69). Since cable television systems do not use the UHF band, once they began expanding beyond 12 channel capacity (some cable companies transmit up to 100 channels)

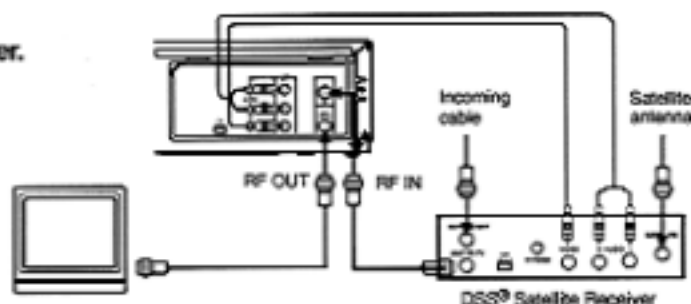
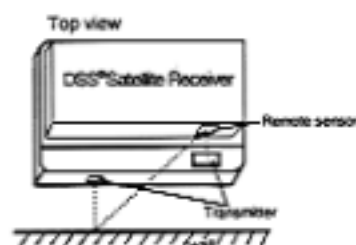
some form of cable box became necessary to enable their subscribers to tune in the additional channels. This "cable box" rebroadcasts the programs to your TV set or VCR on one designated channel, usually channel 2, 3, or 4. When you use a cable box, you will normally change channels using the channel selector on the box. Some cable boxes have built-in decoders that translate "scrambled" pay TV channels (i.e. HBO) so they can be used by your TV set.

Frequency Conversion—simply means the ability to change one frequency to another (i.e. when channel 7 is selected—the cable box takes the channel 7 information and outputs the channel 7 information on channel 3 frequency). The cable box and the VCR use this principle of frequency conversion.

INSTALLATION (continued)

DSS® Connections

Fig. 5 TV with RF jack and satellite receiver.



Position DSS® Satellite Receiver

Position a remote-controllable DSS® Satellite Receiver on top of the VCR as shown. Make sure that the front of the DSS® Satellite Receiver (remote sensor) projects out in front of the VCR (transmitter).

This connection assumes:

- You have a basic satellite system.

This connection provides:

- Recording from a satellite receiver.
- Recording one off-air or cable channel while watching another.

Using This Connection

1. Tune your TV to channel 3 or 4, whichever one you selected with the 3CH/4 switch on the back of the VCR.
2. To record and watch off-air or cable, tune your VCR to channel 3 or 4 whichever one you selected with the CH3/CH4 switch on the back of the receiver. Turn off receiver.
3. To watch and/or record from the satellite receiver, tune your VCR to its line input (LINE appears in display).

To Play a tape:

1. Insert a tape.
2. If necessary, press VCR and then PLAY.

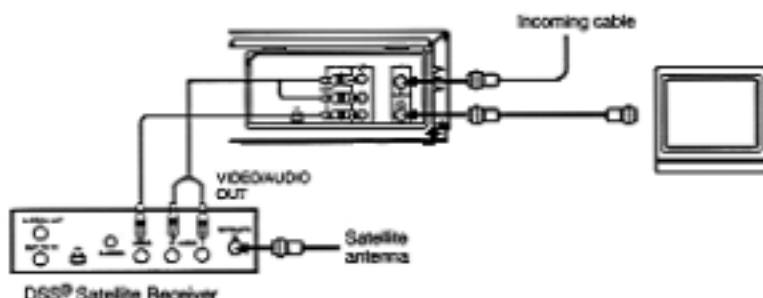
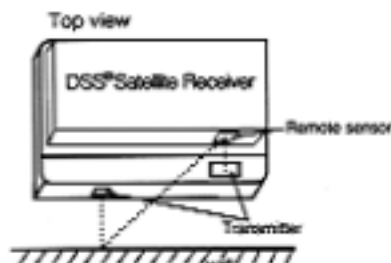
To record one off-air or cable program and watch another.

1. Turn off the satellite receiver and begin recording a program using a recording feature.
2. Press TV-VCR and select a different channel on the TV.

To record a satellite receiver program:

1. Turn on the satellite receiver, tune the VCR to its line input, and begin recording a program using a recording feature.

Fig. 6 TV with AUDIO/VIDEO jacks and satellite receiver.



This connection assumes:

- You have a basic satellite system.

This connection provides:

- Stereo sound playback from VCR.
- Recording from receiver while watching cable or off-air channel.
- Recording one cable or off-air channel while watching another.

Using This Connection

1. Tune your TV to its video input to record (or watch) the VCR or satellite receiver.
2. To record from the satellite receiver, tune your VCR to its line input (LINE appears in display).

To Play a tape:

1. Insert a tape.
2. If necessary, press VCR and then PLAY.

To record one off-air or cable program and watch another.

1. Begin recording a program using a recording feature.
2. Select a different channel on the TV.

To record a satellite receiver program and watch a cable or off-air channel.

1. Turn on satellite receiver, tune the VCR to its line input, and begin recording a program using a recording feature.
2. Select a different channel on the TV.

FIRST-TIME OPERATION

Even if you have never used a VCR before, you can get your VCR connected and working quickly by following the simplified steps below. The page numbers on which you can find detailed instructions for each of these steps are also listed for your convenience.

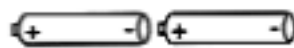
1. Unpack the VCR and Accessories

Make sure you remove all the accessories and information sheets that came packed with your VCR.

- Save the packing materials and box in case you ever need to ship or store your VCR.
- The items shown below came packed with your VCR. If any are missing or appear damaged, contact your TOSHIBA VCR dealer immediately.



Remote Control



Remote Control Batteries
(Size "AAA" 1.5 Volts)



VCR Coaxial RF Cable

Caution: Avoid operating your VCR right after you have moved it from a cold location directly to a warm location. Moisture may have condensed on the head drum inside the VCR that may cause the tape to stick and damage the head wheel or tape. Let the VCR warm up for about 1-1/2 to 2 hours before inserting a video cassette.

2. Install the Batteries in the Remote Control

Turn the remote control over, and remove the cover of the battery compartment. Insert the batteries in the battery compartment so that their positive (+) ends contact the positive terminals. Replace the cover.



Battery
Compartment
cover

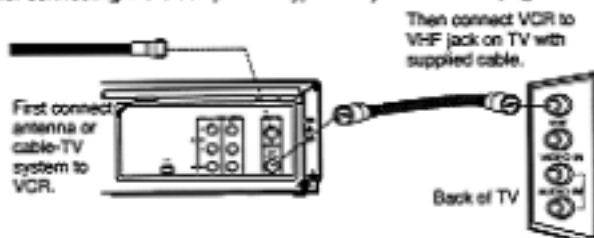
Note: Never place anything heavy on top of the remote control or lay it upside-down. This may accidentally depress the buttons for a long time and discharge the batteries.

Replace the batteries when the VCR fails to respond to the remote control.

Remove the batteries from the remote control if it will not be used for a month or more. This will help prevent possible damage from battery leakage.

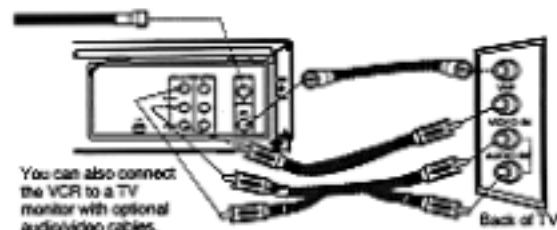
3. Connect an Antenna or Cable-TV System to the VCR

Your VCR is quite easy to install. To connect an antenna or cable-TV system, you will first be attaching the antenna to the VCR, and then connecting the VCR to the TV as shown below. Detailed instructions for connecting more complicated types of systems are on page 7-11.



Remember: When you connect the **OUT TO TV** jack on the VCR to the TV as shown above, you will be tuning your TV to channel 3 or 4 to see the signals from the VCR.

Optional for TV Monitors: If your TV is a monitor that has **AUDIO** and **VIDEO IN** jacks, you can use optional audio/video cables to connect your VCR to the TV as shown below. This connection may produce a slightly better picture during playback.



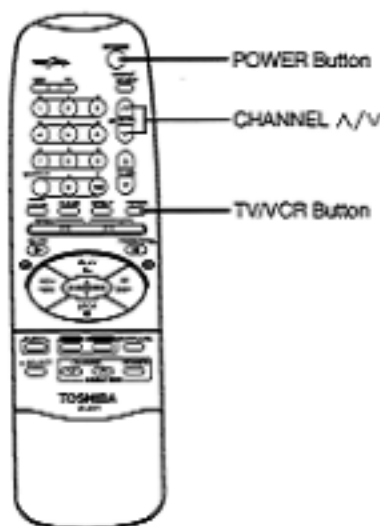
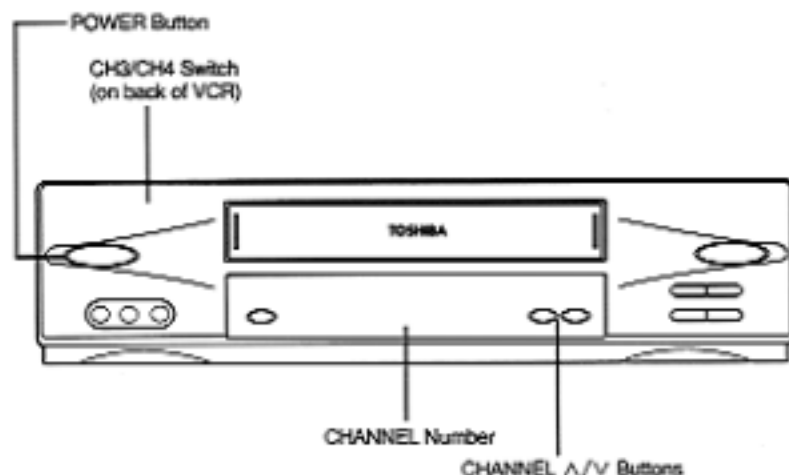
Remember: When you connect the **AUDIO** and **VIDEO OUT** jacks on the VCR to a TV monitor as shown above, you will be tuning your monitor to its video input channel (varies with TV models) to see the signal coming from the VCR. You will also be able to see the VCR's signal on channel 3 or 4.

4. Set the CH3/CH4 Switch on the Back of the VCR to Select the "VCR Channel"

First set the **CH3/CH4** switch on the back of the VCR to either channel 3 or 4, and then tune your TV to the same channel. This is called the "VCR Channel".

Remember that your TV must always be turned on and tuned to this channel (3 or 4) for you to see what the VCR is doing (unless you have a TV monitor). If you have connected your VCR to a TV monitor with audio/video cables as shown above, set your TV to its proper video input channel (such as L1, etc.) to see what the VCR is doing.

FIRST-TIME OPERATION (continued)



5. Turn on the VCR and Select an Active Channel

- Plug in the VCR's power cord and press the **POWER** button on the VCR (or the **POWER** button on the remote control) to turn it on.
- Press the **CHANNEL** button up or down to select an active channel in your area. The channel number will appear in the VCR's display panel.

6. Set the CATV

- See page 16 for "Automatic Channel Program".

7. Learn How to Use the TV/VCR Button

Pressing the **TV/VCR** button turns the VCR indicator in the display panel on or off. The VCR indicator turns on automatically each time you press the **PLAY** button or insert a cassette tape with the safety tab removed.

- When the VCR indicator is on, your TV must be tuned to the "VCR Channel" (3 or 4) so that you can see what the VCR is doing (unless you have a TV monitor as explained below). The TV then receives the picture from the VCR, and you can select channels with the **CHANNEL** buttons on the VCR (or its remote control).
- When the VCR is turned off (or the VCR indicator is off), your TV receives the picture from your home antenna or cable-TV system as it did before you connected the VCR. You can then use the **CHANNEL** buttons on your TV to select channels.
- The **TV/VCR** button lets you record one channel with the VCR while you watch another channel on the TV. Details are on page 32.

Note for TV Monitor: Whenever the VCR is turned on, you will be able to see what it is doing on the video input channel if you have connected a TV monitor using the **AUDIO** and **VIDEO** jacks. The signal from the VCR on the video input channel will not be affected by turning off the VCR indicator. However, be sure to turn off the VCR indicator when you are recording one channel on the VCR and want to watch a different channel on the TV.

8. Test the VCR Connections

1. Turn on the TV and tune it to the "VCR Channel" (3, 4, or video input).
2. Turn on the VCR and select an active channel using the **CHANNEL** buttons on the VCR (or VCR's remote control).
3. If your "VCR Channel" is 3 or 4, make sure the VCR indicator is on in the VCR's display panel. Press the **TV/VCR** button to turn it on.

Note: If you have connected your VCR to a TV monitor using the **AUDIO** and **VIDEO** jacks, tune your TV to the video input channel. The VCR indicator does not have to be on for this connection.

Test 1: Make sure the TV's picture and sound are from the channel you have selected on the VCR and of the same quality they were before you connected the VCR. Change channels on the VCR with the **CHANNEL** buttons on the VCR (or the VCR's remote control). If the picture on the TV does not change to the channel you select with the VCR, go back and carefully check the connections and previous steps.

Test 2: Turn off the VCR, and change channels on the TV with the TV's **CHANNEL** buttons. Make sure the picture and sound you see on the TV and from the channel you selected on the TV are of the same quality they were before you connected the VCR. If the TV does not operate as it did before you connected the VCR, go back and carefully check the connections.

FIRST-TIME OPERATION (continued)

9. Initial Settings Using On-Screen Display

The VCR needs to be made the language selection and clock setting when first plugged in or encountered a power failure.

Setting the Language

Preparation

- Turn on the TV, and select the video channel (3 or 4), or the video input mode if you made the Audio/Video connection (page 7-8).
- Set the TV/VCR selector to "VCR".

1. Press the POWER button to turn on the VCR.

●POWER



2. Press the PROG. button.

The following screen appears on the TV.

PROG.



3. Select the language using the PLAY or STOP button, and press the PROG. button.

The screen turns to the MENU screen.



PROG.



How to move around on the screen

The four buttons control a cursor (a value) on the screen in the respective directions.



PLAY, STOP:
To move up and down.



FF, REW:
To move right and left.

Press the PROG. button to return to the normal TV screen.

Setting the Clock

- The VCR will automatically set the clock, update to the exact current time every time when the VCR is turned off after midnight. You may also manually set the clock.

Example

To set the clock to 2:30 p.m. on August 25 (summer time) 1997.

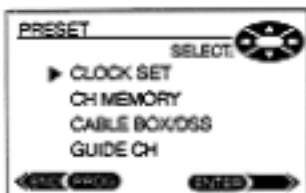
1. Press the PROG. button.

The MENU screen appears on the TV.

2. Move down to "PRESET" using the STOP button, and press the ENTER button.



ENTER



3. Press the ENTER button to select "CLOCK SET/ADJUST I".

ENTER



4. Select "AUTO" or "MANUAL" using the PLAY or STOP button. If the AUTO CLOCK SET feature is selected, the VCR automatically updates the clock using the Coordinated Universal Time information transmitted by some broadcast stations. The CLOCK DATA CH, TIME ZONE and DAYLIGHT SAVINGS TIME menu items must be set for your area. With this feature off, the clock will not be set or adjusted automatically.



5. Select the options using the PLAY or STOP button.

Set Clock Data CHL

If you don't know the clock data channel, select AUTO. The VCR will scan automatically to tune the channel carrying the clock data (usually PBS).

Set Time ZONE

If you select AUTO for your time zone, the VCR sets the clock using the first Coordinated Universal Time information it finds. If the time is not correct, select another time zone or use the MANUAL option.

Set Daylight Saving Time

If you select YES, DST IS OBSERVED:

In the spring, daylight-saving time begins on the first Sunday in April. Because the clock automatically changes from 2:00 AM to 3:00 AM (forward one hour), remember that any part of a scheduled Timer Recording that falls between these two times will not be recorded.

In the autumn, daylight-saving time ends on the last Sunday in October. The VCR clock automatically changes from 2:00 AM to 1:00 AM (back one hour). Therefore, it can affect your recording length if one is set for this time.

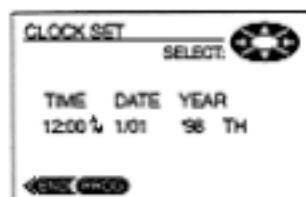
6. Press the PROG. button two times to exit.

With a cable box, the VCR will not reset the clock after a power outage unless the cable box is set to the channel carrying the broadcast signal.

If AUTO CLOCK SET is unsuccessful, try tuning the VCR to a channel carrying the Clock information (usually PBS), then turn the VCR off. If the time does not set within 10 minutes, set the time and date through the MANUAL CLOCK SET menu selection.

Check local cable system or TV stations for availability of channels with Extended Data Service. Signal may not be available in some areas.

7. If you select MANUAL mode, this display will appear.



8. Move to the next using the FF button.
(To move back, press the REW button.)

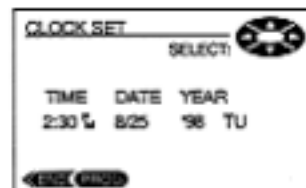
9. Vary the digits to set the hour.



PLAY: To increase.

STOP: To decrease.

10. Repeat steps 5 and 6 to set the minutes, month, day, and the year (by the last two digits).



11. Press the PROG. button.
Now the clock starts.

12. Press the PROG. button two times to exit.

FIRST-TIME OPERATION (continued)

10. Automatic Channel Program

Automatic TV/CATV Channel Memory

The VCR scans through all receivable TV and CATV channels and stores only the active ones in your area into the memory. Once the storing is finished, you can select a desired channel by using the CH/TRK buttons.

Preparation

- Turn on the TV, and select the video channel (3 or 4), or the video input mode if you made the Audio/Video connection (pages 8-9).
- Set the TV/VCR selector to "VCR".
- Turn on the VCR.

Automatic TV Channel Memory

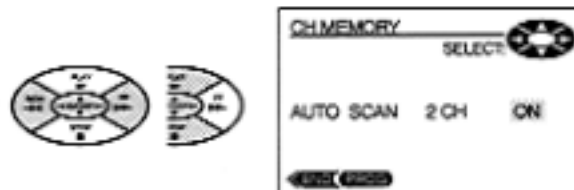
1. Press the PROG. button to display the MENU screen.
2. Move down to "PRESET" using the STOP button, and press the ENTER button.
3. Select "CH MEMORY" using the STOP button, and press the ENTER button.



4. Make sure "TV/CATV" is set to "TV".
(If it does not, set to "TV" with the REW button.)



5. Select "AUTO SCAN" using the STOP button, and press the FF button to set to "ON".



The VCR starts scanning and the channels are stored in the VCR in ascending order. When the scanning is finished, the screen automatically returns.

6. Press the PROG. button three times to exit.

Automatic CATV Channel Memory

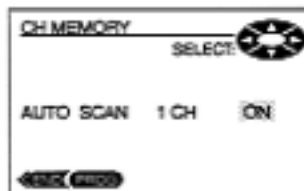
1. Press the PROG. button to display the MENU screen.
2. Move down to "PRESET" using the STOP button, and press the ENTER button.
3. Select "CH MEMORY" using the STOP button, and press the ENTER button.



4. Set "TV/CATV" to "CATV" using the FF button.



5. Select "AUTO SCAN" using the STOP button, and press the FF button to set to "ON".



The VCR starts scanning and the channels are stored in the VCR in ascending order. When the scanning is finished, the screen automatically returns.

6. Press the PROG. button three times to exit.

FIRST-TIME OPERATION (continued)

Selecting Stored Channels

Once the active channels have been stored, you can select the channels in two ways below.

- Number buttons:** To enter digits of the channel number.
- For one-digit number, enter 0 before.
 - For more than 100 number, first press the 100 button.
 - Each number button needs to be pressed within 2 seconds.

CHTRK buttons: To shift up or down the stored channel numbers.

Adding or Erasing Channels

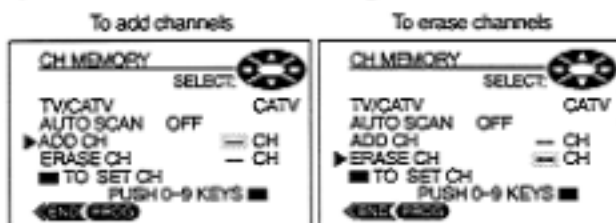
Adding channels

If a desired channel cannot be scanned automatically because of a weak signal, it can be added to the memory.

Erasing channels

You can erase a stored channel from the memory if it is unnecessary.

- 1) Follow steps 1 to 3 of "Automatic TV Channel Memory" or "Automatic CATV Channel Memory".
- 2) Select "ADD CH" or "ERASE CH" using the STOP button.



- 3) Enter a channel number of 1 to 125 by using number buttons. For more than 100 number, first press the 100 button. For CATV channels, refer to the chart below. (For other orders, check with your cable company)
- 4) Repeat steps 2) and 3) above to add or erase channels as necessary.
- 5) Press the PROG. button to exit.

Channel Reference Chart

Number on the VCR		CH NUMBER		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
		TV		-	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Corresponding channel number		CATV STD (HRC/IRC)		1(A-B)	2	3	4	5(A-7)	6(A-8)	7	8	9	10	11	12	13	A	B	C	D	E
19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	AA	BB	CC	DD
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	-
MM	NN	OO	PP	QQ	RR	SS	TT	UU	VV	WW	XX	YY	ZZ	AAA	BBB	65	66	67	68	69	70
99	100	101	102	103	-	121	122	123	124	125											
-	-	-	-	-	-	-	-	-	-	-											
A-1	100	101	102	103	-	121	122	123	124	125											

CATV signals

- STD (standard) cable TV signals
 - HRC (Harmonic Related Carriers) cable TV signals
 - IRC (Incremental Related Carriers) cable TV signals
- IRC is also called IOC (Incremental Coherent Carriers)

FIRST-TIME OPERATION (continued)

11. Make a Recording and Play It Back

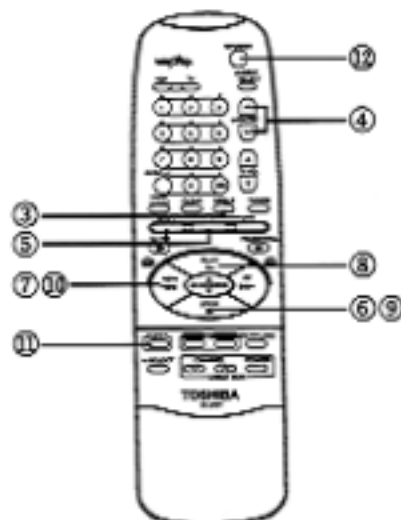
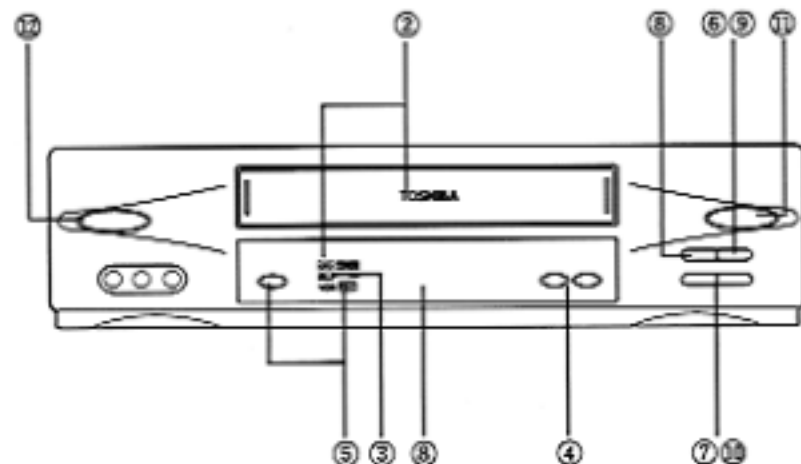
Follow the steps below to practice making a short recording and then play it back.

Details on recording speeds, features, and recording guides are on pages 31-47.

Details on playback features and playback guides are on pages 28-30.

Several buttons on the remote control perform the same function as buttons with the same name on the VCR. You may use whichever button is more convenient at the time.

Details on the operating controls of the VCR and remote control are on pages 20, 22-23.



To make a recording :

- 1 Turn on the TV and tune it to your "VCR Channel" (3*, 4*, or video input).
* The TV must be tuned to the same channel you selected with the CH3/CH4 switch on the back of the VCR.

- 2 Insert a cassette with the record-protect (safety) tab intact. The cassette-in indicator (CIN) will light in the VCR's display panel. Details about inserting and removing cassettes are on page 27.

Notes: The VCR is automatically turned on when you insert a cassette.

If you insert a cassette with its record-protect (safety) tab removed, the VCR will automatically begin playback.

If a cassette without a record-protect (safety) tab is inserted, the VCR ejects it when you press the REC button. Details about the record-protect (safety) tab are on page 27.

Make sure the VCR indicator appears in the VCR's display panel. If not, press the TV/VCR button to turn it on.

- 3 Select a tape recording speed by pressing the SP/SLP button. The tape speed indicator (SP or SLP) appears in the VCR's display panel. Use SP for normal recording. Tape recording speeds are compared on page 27.

Notes: The VCR automatically selects the correct tape speed for playback.

- 4 Select the channel to be recorded by pressing the CHANNEL ▲ or ▼ button. The channel number appears in the VCR's display panel and on the TV screen.

- 5 Start recording by pressing the REC button. The record indicator (REC) will light in the VCR's display panel (or REC button on the remote control).

- 6 When you are finished recording, press the STOP button on the VCR (or the STOP button on the remote control).

To play the recording back:

- 7 Rewind the tape by pressing the REW button on the VCR (or the REW button on the remote control).

- 8 Press the PLAY button to begin playback. The PLAY indicator will be displayed in the VCR's display panel.

- 9 When you are finished playing back the tape, press the STOP button on the VCR (or the STOP button on the remote control).

- 10 Rewind the tape by pressing the REW button on the VCR (or the REW button on the remote control).

- 11 To eject the cassette, press the EJECT button on the VCR (or the EJECT button on the remote control).

- 12 Turn off the VCR by pressing the POWER button on the VCR (or the POWER button on the remote control).

- 13 Turn off the TV.

Cleaning the VCR

Dust exposed surfaces as required, using a soft cloth or the dusting attachment of your vacuum cleaner. Occasionally use the vacuum cleaner to remove dust from the ventilation holes on the top, back, sides and bottom of the cabinet.

Some of the plastic surfaces are easily scratched, and they can be marred by alcohol and various solvents. Avoid excessive use of oil-based furniture polishes since the materials used in the cabinet are non-porous and the residue will accumulate more dust.

Design Specifications

Format:	VHS
Record/Playback System:	Video : 4-Head record/playback system Audio: Hi-Fi STEREO and mono record/playback system
Video Signal System:	EIA standard: NTSC color
Antenna:	75-ohm external VHF/UHF combined antenna terminal
Tuner:	USA: 181 channels (125 cable channels) CANADA: 178 channels (122 cable channels)
Type:	Auto-programming frequency synthesis
Power Requirement:	120AC, 60Hz
Power Consumption:	16 WATTS
Dimensions:	93.5mm high (3.7 inches) 380mm wide (15.2 inches) 326.5mm deep (12.9 inches)
Weight:	4.0Kg (9.0lbs)
Storage Temperature Range:	-22° F to +149° F
Operating Temperature Range :	+41° F to +104° F

Specifications and features are subject to change without notice.