

**TOSHIBA**

# OWNER'S MANUAL

**VHS**

*Video Cassette Recorder*

M-221



INTRODUCTION 2

INSTALLATION AND  
PREPARATION 11

BASIC OPERATIONS 24



CONVENIENT  
FUNCTIONS 27

SPECIALIZED  
OPERATIONS 31

OTHERS 37

Thank you for choosing the TOSHIBA M-221 Video Cassette Recorder. We are proud to have the opportunity of introducing you to the exciting world of video through the High Quality (HQ) features of the M-221. Please refer to the section entitled Manual Overview on page 2 before reading this manual. It is designed to serve as an index and guide to help you use the manual with optimum efficiency.

## PLEASE READ

	<b>CAUTION</b> RISK OF ELECTRIC SHOCK DO NOT OPEN	
<p><b>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.</b></p>		



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



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

**WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE. DANGEROUS HIGH VOLTAGES ARE PRESENT INSIDE THE ENCLOSURE. DO NOT OPEN THE CABINET. REFER SERVICING TO QUALIFIED PERSONNEL ONLY.**

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

Model No. \_\_\_\_\_ M-221 \_\_\_\_\_ Serial No. \_\_\_\_\_

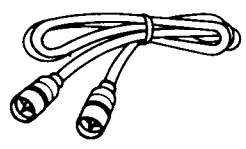
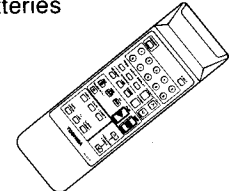
Retain this information for future reference.

### Copyright

It is permissible to record television programs, film video tapes and other material only in the event that third party copyrights and other rights are not violated.

## Accessories

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

<p>① Antenna Cable</p> 	<p>② Remote Control Unit (Wireless) with two AA batteries</p> 
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# INTRODUCTION

This section contains general information related to VCR care and maintenance, instructions on how to use this manual and an outline of the VCR's special features.

## Important Precautions

### Save Original Packing materials

The original shipping carton and packing materials will come in handy if you ever have to ship your VCR. For maximum protection, repack the set as it was originally packed at the factory.

### Moisture Condensation

Never operate this unit immediately after moving it from a cold location to a warm location. When the VCR is exposed to such a change in temperature, moisture may condense on the cylinder inside the machine, one of its most crucial internal parts. This unit is equipped with an automatic moisture condensation prevention circuit designed to cope with this problem. It takes about TWO HOURS for this circuit to work with the power cord plugged in. Please do not use the VCR during this time.

### Compatibility

This video cassette recorder (VCR) is compatible with any other VCR bearing the **VHS** mark. <sup>HQ</sup> VHS equipment is also compatible with existing, non-HQ VHS equipment.

## Manual Overview

This manual is divided into 6 chapters; the following introduces each chapter briefly:

INTRODUCTION:	Explains the general operation of this VCR and lists outlines of the features and parts names.
INSTALLATION AND PREPARATION:	Explains how to connect the antenna; how to set the VCR output channel, the current time, and channels; and covers the remote control and cassette tapes. This chapter gives you the basic knowledge for getting the VCR ready.
BASIC OPERATIONS:	Explains basic recording and playback.
CONVENIENT FUNCTIONS:	Explains convenient functions for recording or playback, such as auto search and the counter display.
SPECIALIZED OPERATIONS:	Explains operations far more advanced than the basic operations, such as varied special playback and timer recording.
OTHERS:	Contains such points as how to deal with trouble before calling the service personnel; specifications; index; and quick reference which sets out the basic installation.

## Table of Contents

<b>INTRODUCTION</b>		<b>CONVENIENT FUNCTIONS</b>	
INTRODUCTION .....	2	COUNTER FUNCTION .....	27
Important Precautions .....	2	Linear Time Counter Function .....	27
Manual Overview .....	2	Memory Stop Function .....	27
Table of Contents .....	2	<b>AUTO SEARCH</b> .....	28
Features .....	3	Index .....	28
<b>CONTROLS</b> .....	5	Index Search .....	29
Front Panel .....	5	Skip Search .....	30
Remote Control .....	7	<b>SPECIALIZED OPERATIONS</b>	
Using Remote Control .....	8	<b>SPECIALIZED EFFECTS</b> .....	31
Rear Panel .....	9	Picture Search .....	31
Multi Display .....	10	Still Frame .....	32
<b>INSTALLATION AND PREPARATION</b>		<b>TIMER RECORDING</b> .....	33
<b>INSTALLATION</b> .....	11	One Touch Timer Recording .....	33
TV Antenna and VCR Connections .....	11	Programmable Timer Recording .....	34
VCR and TV Connections .....	12	<b>SPECIALIZED OPERATIONS</b> .....	36
CATV Connections .....	13	Copying VCR Recording .....	36
<b>PREPARATION</b> .....	17	<b>OTHERS</b>	
Setting the VCR Clock .....	17	OTHERS .....	37
Setting the VCR Output Channel .....	18	Specifications .....	37
Using the TV/VCR Button .....	19	<b>QUICK REFERENCE</b> .....	38
Channel Programming .....	20	Installation .....	38
Operating the FS Tuner .....	21	Before Calling Service Personnel .....	39
Using the Video Cassette Tape .....	23		
<b>BASIC OPERATIONS</b>			
<b>PLAYBACK</b> .....	24		
Basic Playback .....	24		
<b>RECORDING</b> .....	25		
Basic Manual Recording .....	25		
Recording a TV Program While Watching Another ...	26		

# Features

## Other Special-Features:

### 181 Channel Cable Compatible FS (Frequency Synthesized) Tuner

This FS tuner automatically selects with highest accuracy, all receivable channels such as those for UHF, VHF and CATV.

### 1 Year, 8-Program Programmable Timer

With this handy function you can program your VCR to make up to eight different kinds of unattended recordings in a year period.

### Auto-Rewind

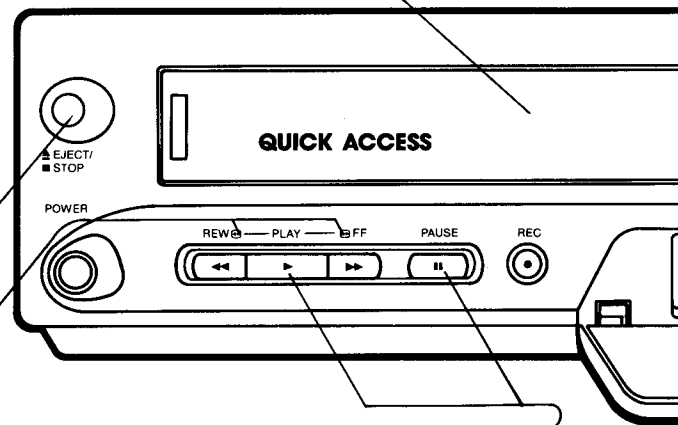
All kinds of tapes are rewound automatically when they reach their end during recording or playback.

### Quick-Access System

This VCR uses a quick access system which enables modes to be switched rapidly. For example, a conventional VCR needs 8 to 10 seconds to switch modes from play to rewind. With this new quick access system, the same operation can be set in 2 to 3 seconds. This function can be used for both playing and recording. This VCR starts recording almost immediately after the REC button is pressed.

### Auto Power On and Fully-Automatic Play

When a cassette is loaded, the power goes on automatically. When a pre-recorded tape (without safety tab) is loaded into the unit, the power goes on, then the VCR's Fully-Automatic Play function guides the tape through play and rewind automatically. When the tape has been played and rewound, it is stopped.



### Picture Search

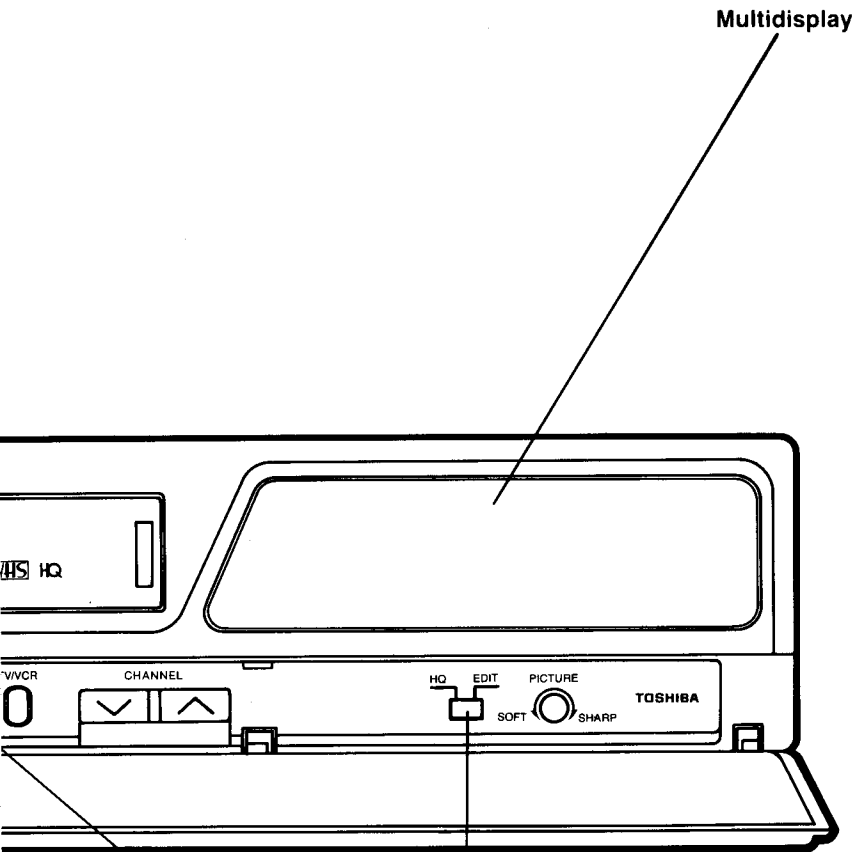
This function lets you speed up playback both in the forward and reverse directions at 5 times or 7 times (SP and LP speeds) or 9 times or 21 times (SLP speed only) the normal playback speed to quickly locate a section on the tape you want to watch.

### Power Off Eject

Press this button to eject a tape regardless of whether the power is on or off.

### Still Frame

The VCR's highly integrated circuitry gives you still frame with the touch of a button.



Multidisplay

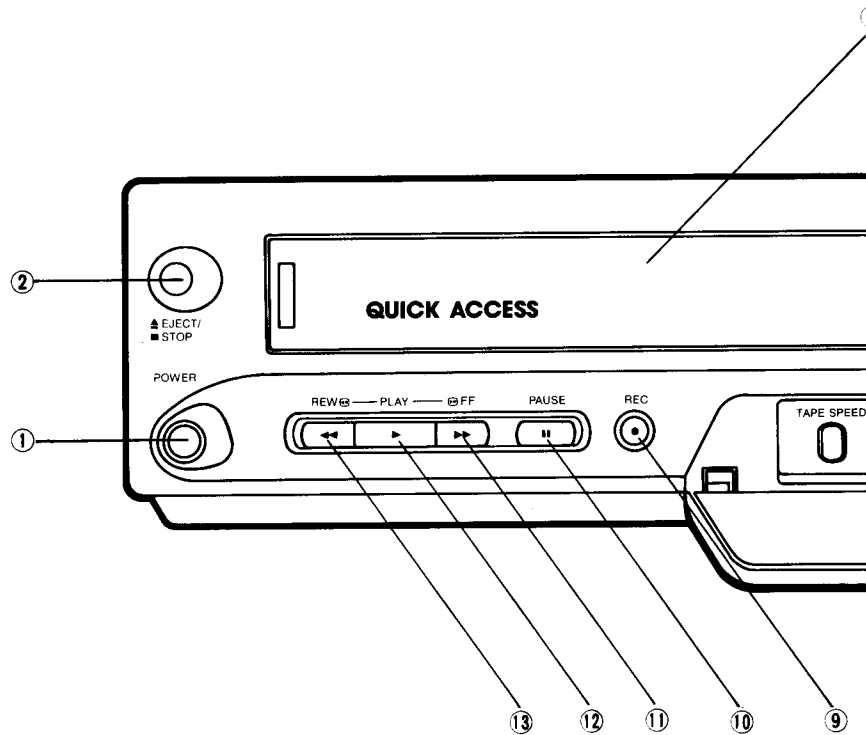
High Quality Picture

**SP (Standard Play) and SLP (Super Long Play) Recording Speeds**

You select the speed you prefer according to whether your particular priority at the time is economy or quality. The SLP speed lets you get more footage on your tape. The SP speed gives you best quality video and audio recording.

# CONTROLS

## Front Panel



### ① POWER button

Press this button to turn the VCR on after it is plugged in. Note that the power goes on automatically (Auto Power ON) when a tape is loaded into the cassette compartment.

### ② STOP/EJECT

Press to stop tape during play, record, rewind or fast forward. If the button is pressed during Fully-Automatic play, the function will be cancelled. When VCR is in STOP mode. Press to remove the video cassette. Cassette can also be ejected when VCR power is off as long as unit is connected to an AC outlet.

### ③ Cassette Compartment

Note that the power goes on automatically when a cassette is inserted in the compartment. Also, if a pre-recorded cassette with the safety tab missing is inserted, the Fully-Automatic Play function is activated.

### ④ Infrared Remote Control Receiver

This receiver picks up infrared light commands from the remote control.

### ⑤ CHANNEL buttons

The UP (^) button is used for sequential selection in the upper direction, and the DOWN (v) button is for sequential selection in the lower direction.

### ⑥ TV/VCR button

With this button you can select the VCR tuner or the TV tuner for reception. The setting you have chosen will appear as letters "VCR" lit on the multidisplay. When set to TV (not lit) you can watch normal TV programs or watch a TV program on the TV set while recording another program with the VCR. When set to VCR (VCR Indicator is lit), you can watch the program being recorded.

### ⑦ Picture Select switch

HQ: When recording in this position, a distinct picture for recording and playback is possible. We recommend this position for recording.  
EDIT: Set in this position when copying.

### ⑧ PICTURE control

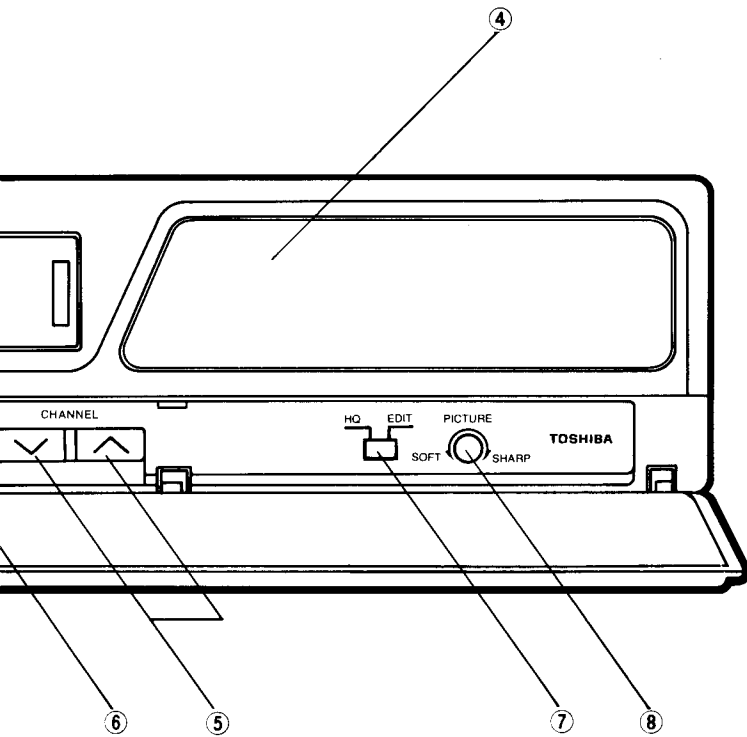
Adjust this knob to soften or sharpen the picture during playback.

### ⑨ REC button

Press this button to begin recording a program.

### ⑩ PAUSE/STILL button

Press this button during recording to edit out unwanted materials. It is also used during playback to partially freeze a certain frame.



⑪ **FF button**

When this button is pressed while the VCR is in a mode such as Stop, Rewind or Forward Picture Search, the tape advances at high speed. When this button is pressed while the VCR is in a mode such as Play, Fast-Forward, Still or Reverse Picture Search the VCR enters the Forward Picture Search mode.

⑫ **PLAY button**

Press this button to begin playing back a tape.

⑬ **REW button**

When this button is pressed while the VCR is in a mode such as Stop, Fast-Forward or Reverse Picture Search, the tape is rewound at high speed. When the button is pressed while the VCR is in a mode such as Play, Rewind, Still or Forward Picture Search, the VCR enters the Reverse Search mode.

## Remote Control

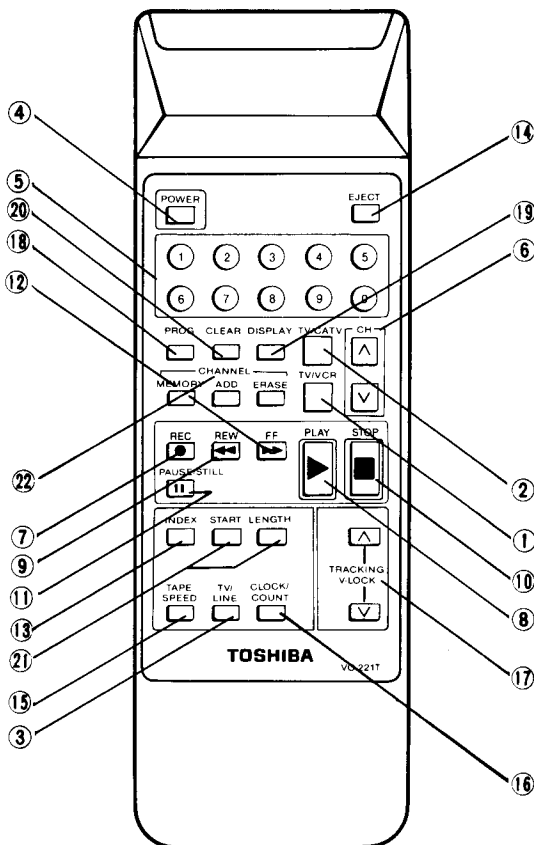
### Preparation Operating Part

- ① **TV/VCR button**  
To view the TV set, set the button to "TV". To use the VCR tuner, set the button to "VCR".
- ② **TV/CATV button**  
To view CATV, set the button to "CATV". To view VHF or UHF, set the button to "TV".
- ③ **TV/LINE button**  
TO record from a camera or another VCR, set the button to "LINE". To record TV programs, set the button to TV.
- ④ **POWER button**  
To turn the VCR power on or off, press this button.
- ⑤ **CHANNEL buttons**  
To select channels directly, press these buttons.

#### Note:

- To enter channel 5, press button "0" and then button "5".
- To enter channel 17, press button "1" and then button "7".
- To enter channel 125, press button "1", "2" and "5" within 2 seconds interval.

- ⑥ **CHANNEL (∧ ∨) buttons**  
The UP(∧) button is used for sequential selection in the upper direction, and the DOWN(∨) button is for sequential selection in the lower direction.



### Playback and Recording Operating Part

- ⑦ **REC button**  
To start recording on a tape that has been loaded.
- ⑧ **PLAY button**  
To activate the Playback mode as well as special effects in playback operation, press this button.
- ⑨ **REW button**  
To rewind the tape at high speed or to reverse the picture to search for a section, press this button.
- ⑩ **STOP button**  
To stop the VCR in any mode, press this button.
- ⑪ **PAUSE/STILL button**  
To eliminate unnecessary pictures when recording, press this button. Also, to still a picture in playback, press this button.
- ⑫ **FF button**  
To forward the tape at high speed or to forward the picture to search for a section, press this button.

- ⑬ **INDEX button (see p.28)**  
To activate the Index Search or Skip Search, press this button.
- ⑭ **EJECT button**  
Press this button to eject a tape from the cassette compartment.
- ⑮ **TAPE SPEED**  
Press to select desired TAPE speed: Sp (standard play) or SLP (super long play). The tape is automatically played back at the speed it was recorded.
- ⑯ **CLOCK/COUNT**  
Press to program the beginning of a certain program into the VCR's memory so that the tape begins playing at the designated location automatically when re-wound or fastforwarded. press again to display CLOCK (present time).
- ⑰ **TRACKING/V-LOCK**  
When you play a tape recorder on a different VCR horizontal streaks (noise bars) may appear in the picture. Press this button to remove noise bars. In still mode adjust this control to minimize vertical shaking on the TV screen.

### OSP Operating Part

- ⑱ **PROGRAM button**  
Used to select OSP mode and normal TV programs each time the button is pressed.
- ⑲ **DISPLAY button**  
Press once to show on screen: Status of tape (Function. Channel. Tape counter, date, day and time, tape speed. Press twice to show tape counter only.
- ⑳ **CLEAR button**  
Used with PROGRAM to correct entries in program and clear timer programming, used to reset counter.
- ㉑ **OTR START LENGTH buttons**  
This convenient function enables you to program the VCR quickly to begin unattended recording of TV programs starting either immediately or within twenty-four hours. It is especially designed for the people "on the go"
- ㉒ **AUTO CHANNEL PROGRAM buttons.** (see p.20)

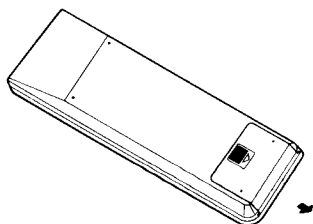


## Using Remote Control

### Battery Installation

How to install batteries into the Remote Control Unit.

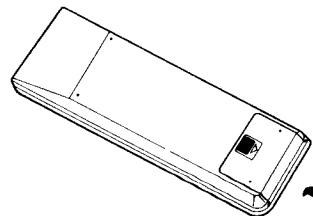
- ① Remove the battery cover on the reverse side of the unit.



- ② Install 2 batteries ("AA" size) into the unit. Carefully install batteries to match the polarity diagrams.



- ③ Close the battery cover.



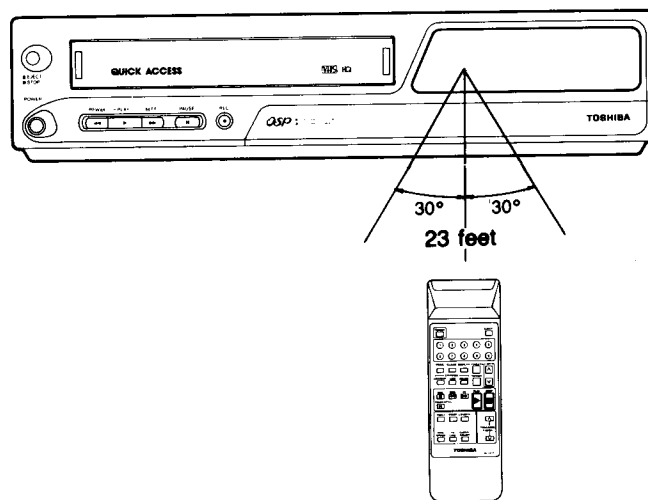
### Notes:

- Battery life is about 1 year. (It varies according to how the batteries are consumed.)
- Replace both batteries when an operation is not stable or disabled.
- Remove the batteries when the remote control is left unused for a long time.
- Do not throw used batteries into fire.

### Remote Control Operation Range

1. When using the remote control, any object between it and VCR will block the path of the beam. Dark walls, direct sunshine or very bright (incandescent) light will reduce the sensitivity of the remote control.
2. Hold the remote control within an angle range of about 30° from either side of the VCR receptor center as shown.
3. When the remote control is pointed straight at the VCR receptor, it will work within about 23 feet (7m) from the VCR.
4. Point the front of the remote control directly at the front of the VCR.

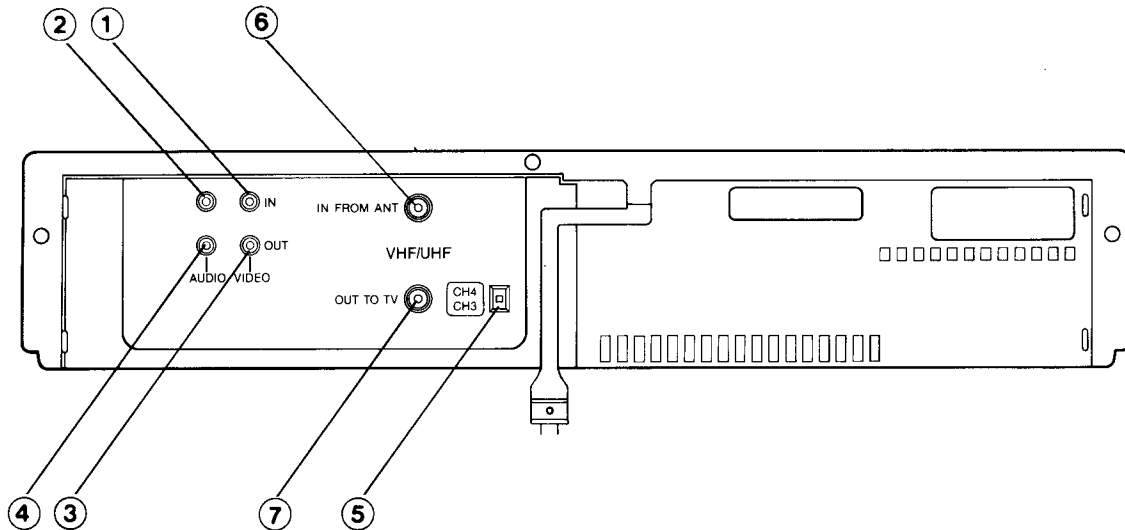
When the remote control is pointed upward or downward at the receptor within a range of 30° of the receptor, it will work within about 17 feet (5m) from the VCR.



### Notes:

- For a correct operation press buttons on the remote control at intervals of at least 1 second.
- Keep the unit away from heat and humidity and sources of electrical shock. Also, remove batteries from the remote control when it is not to be used for a long period of time to safeguard leaking battery acid.
- Be careful not to drop or shock the remote control.
- Be careful not to spill water on the remote control or place it on anything wet.
- Do not take the remote control apart.

## Rear Panel



**① VIDEO IN jack**

To record from an external video source, such as a VCP, VCR or TV set, connect this jack to the VIDEO output jack of one of those sources.

**② AUDIO IN jack**

To record from an external audio source connect this jack to the AUDIO output jack of an external audio source, such as a VCR, VCP, audio receiver or TV set.

**③ VIDEO OUT jack**

For external recording or monitoring, connect this jack to the VIDEO input of a VCR or TV set.

**④ AUDIO OUT jack**

For playing or recording, connect this jack to the AUDIO input on an external audio equipment.

**⑤ 3-4 output channel selector switch**

In order that signals received by the VCR can be converted into signals suitable for your TV set, move this switch to either 3CH or 4CH, whichever channel is unused in your area.

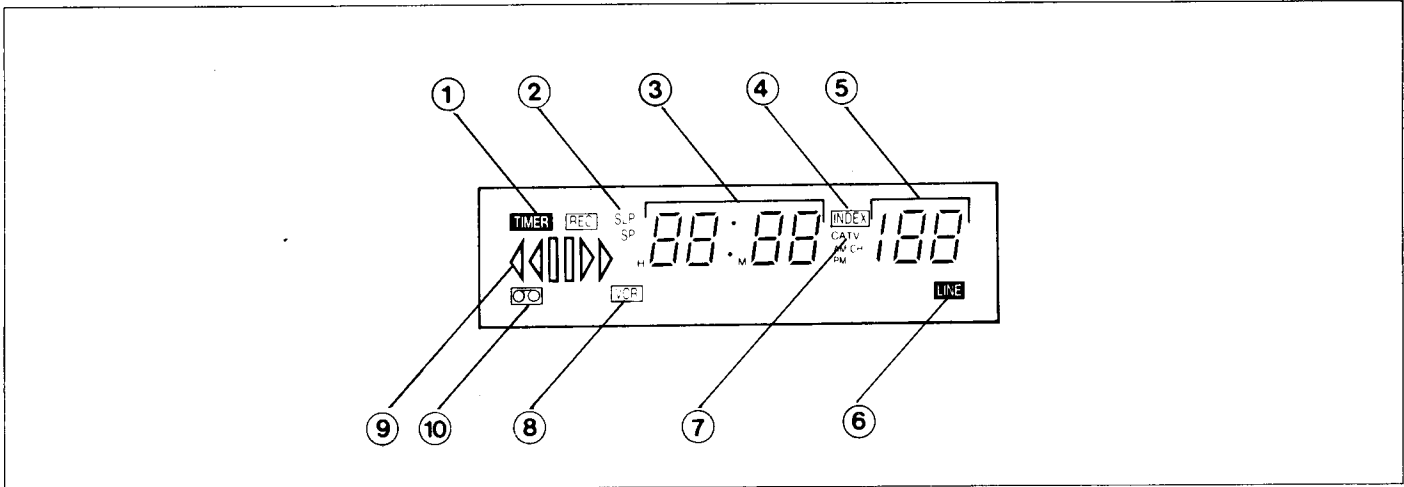
**⑥ VHF/UHF ANTENNA IN TERMINAL**

For VHF reception, UHF reception or cable TV reception, connect this terminal to a VHF antenna, a UHF antenna or cable TV terminal.

**⑦ VHF/UHF ANTENNA OUT TERMINAL**

Connect this terminal to the TV set's VHF IN terminal or VHF/UHF IN terminal.

## Multi Display



- ① **TIMER INDICATOR**  
Displays TIMER when timer recording is set and the VCR is off.
- ② **SPEED INDICATOR**  
Displays present tape recording or playback speed.
- ③ **MULTIFUNCTIONAL INDICATOR**  
This indicator displays clock/linear time counter/start/end time.
- ④ **INDEX INDICATOR**  
This indicator lights when the INDEX button on remote control is pressed.
- ⑤ **CHANNEL NUMBER**  
Shows channel currently in use or to be recorded.
- ⑥ **LINE INDICATOR**  
Displays "LINE" when source of recording is from rear line video connectors.
- ⑦ **CATV INDICATOR**  
Displays "CATV" when cable system is chosen.
- ⑧ **VCR/TV INDICATOR**  
Displays source of TV picture "VCR" indicates tape or VCR tuner. (Display turns off for TV selection.)
- ⑨ **STATUS INDICATOR**  
Displays present status of VCR tape such as "▶" when tape is playback.
- ⑩ **CASSETTE INDICATOR**  
Indicates that a videocassette is in tape compartment.

# INSTALLATION

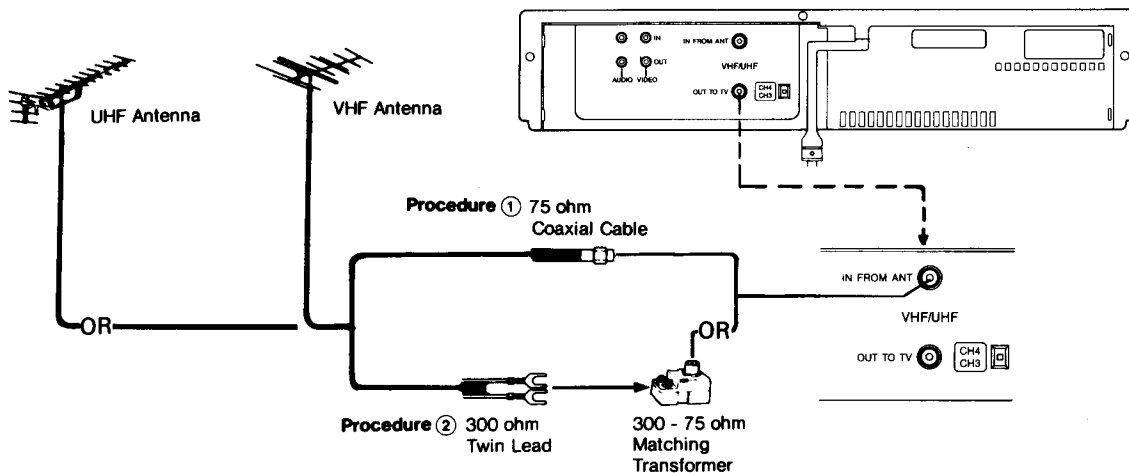
## TV Antenna and VCR Connections

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

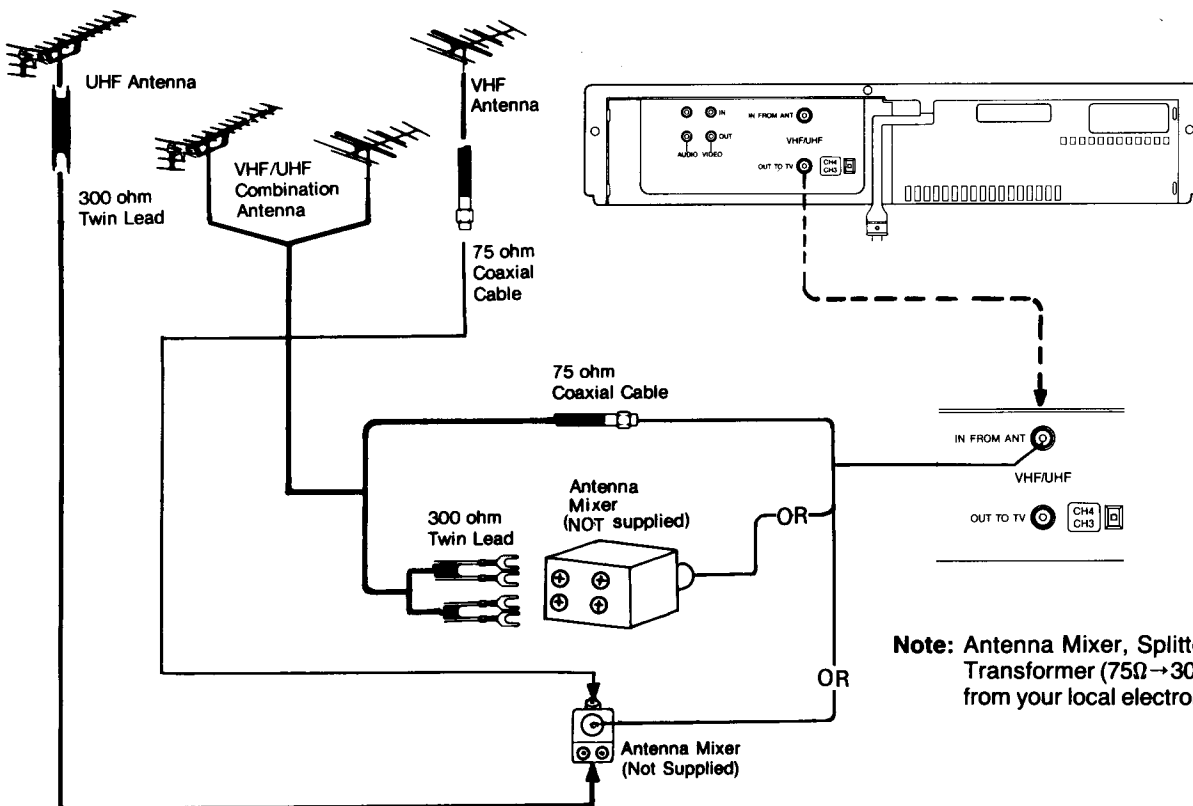
Remove the VHF and/or UHF cables from your TV terminals and reconnect them to the VCR terminal as shown in the diagrams below.

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

**Fig. 1 VHF or UHF Reception Areas**



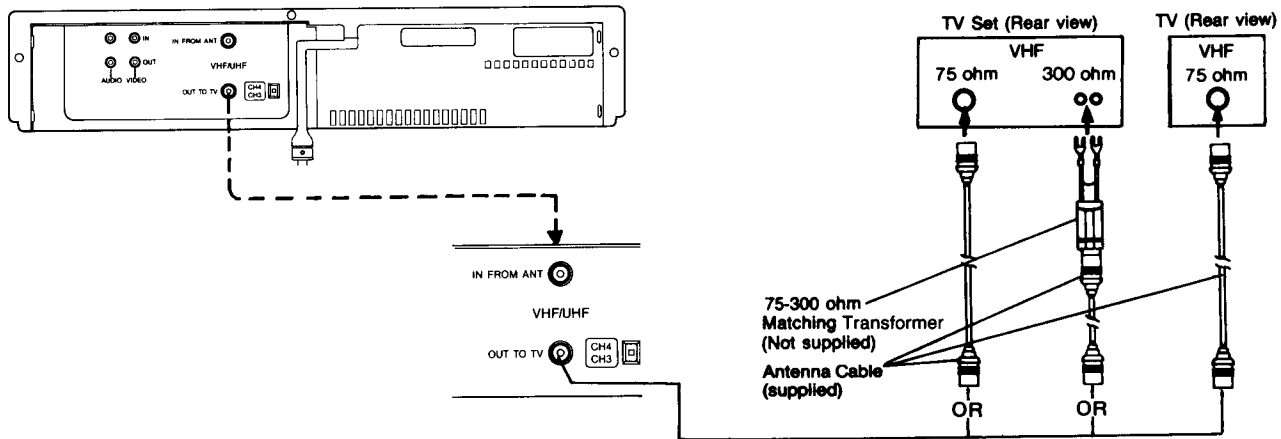
**Fig. 2 Combined VHF/UHF Reception Areas**



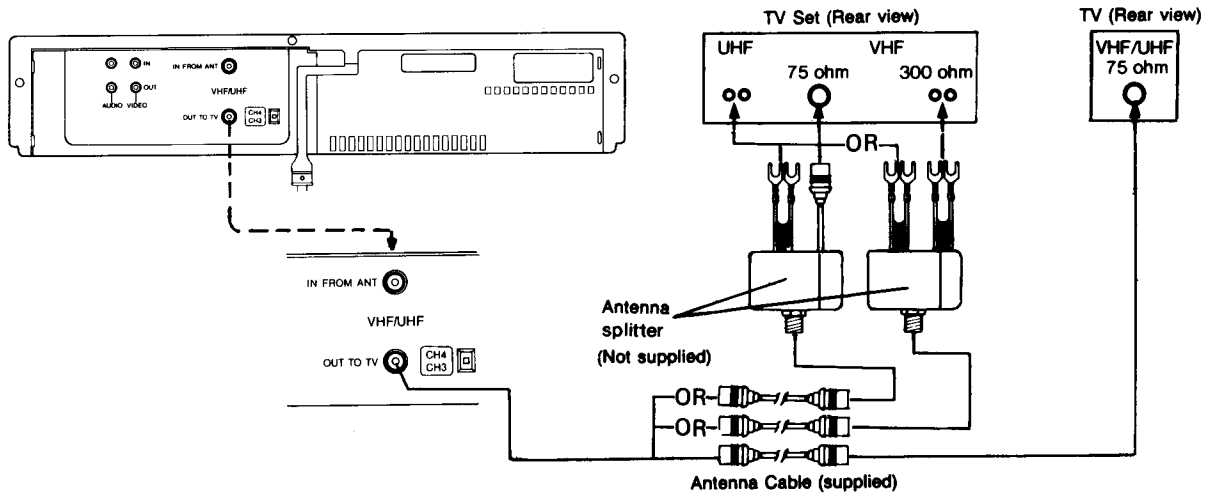
**Note:** Antenna Mixer, Splitter and Matching Transformer (75Ω→300Ω) is available from your local electronics store.

# VCR and TV Connections

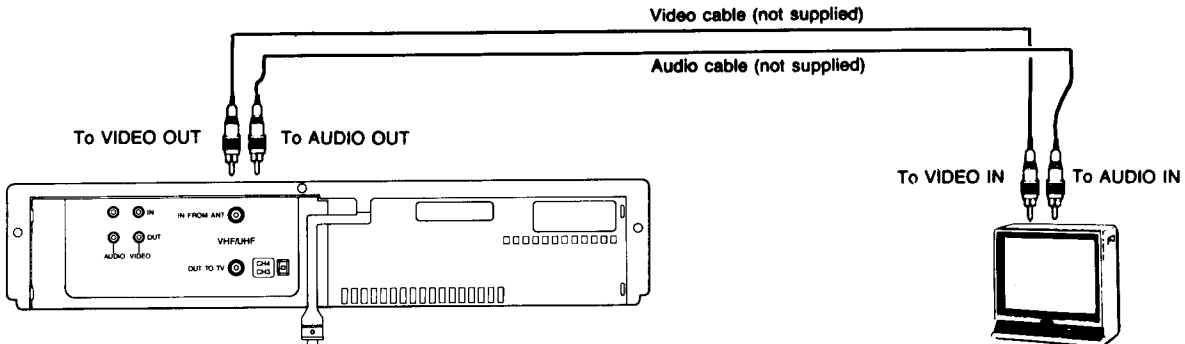
**Fig. 1 VHF (75ohm/300ohm) or VHF (75ohm) terminals connection**



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



## Connection to the TV with "VIDEO IN" and "AUDIO IN" Connections



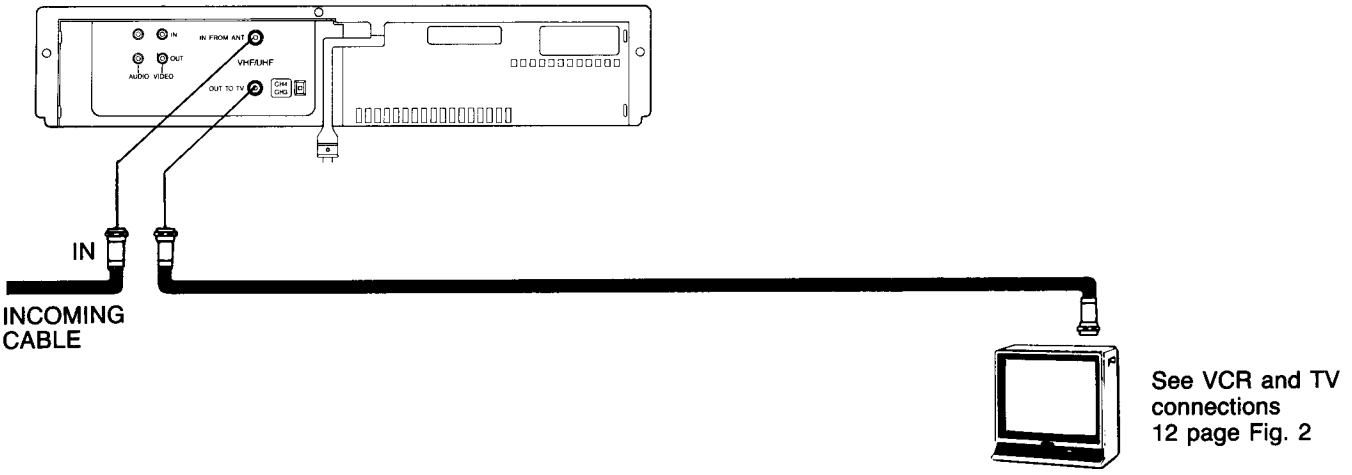
INSTALLATION AND PREPARATION

# CATV Connections

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

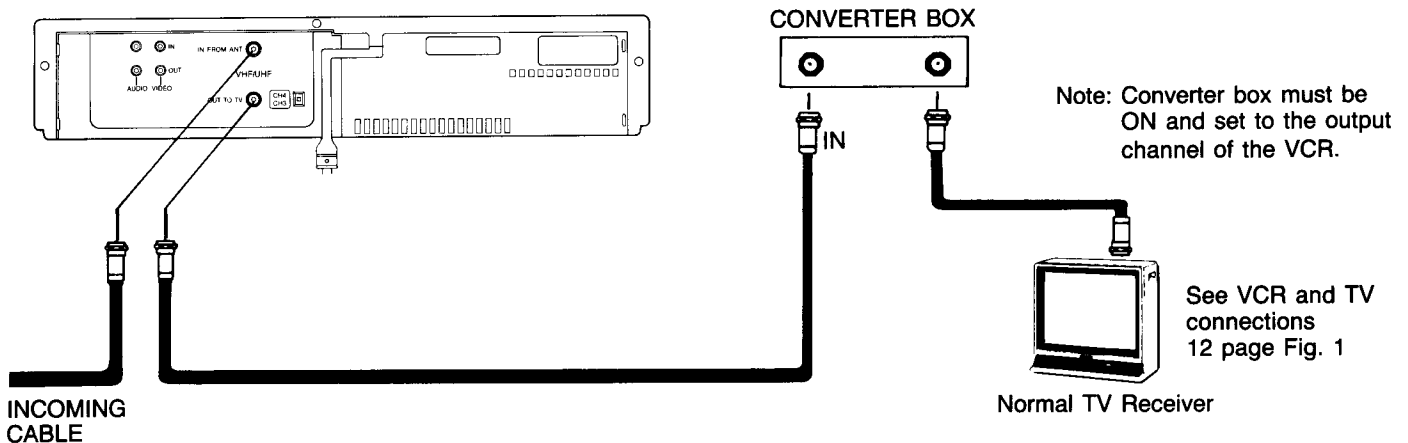
We recommend that you consult your cable TV company to make sure that the cable is connected properly to match the cable TV system you want to watch.

## 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 tuning or 181 channel tuning.)
  - Record one channel and watch another.
  - Use the programmable timer.

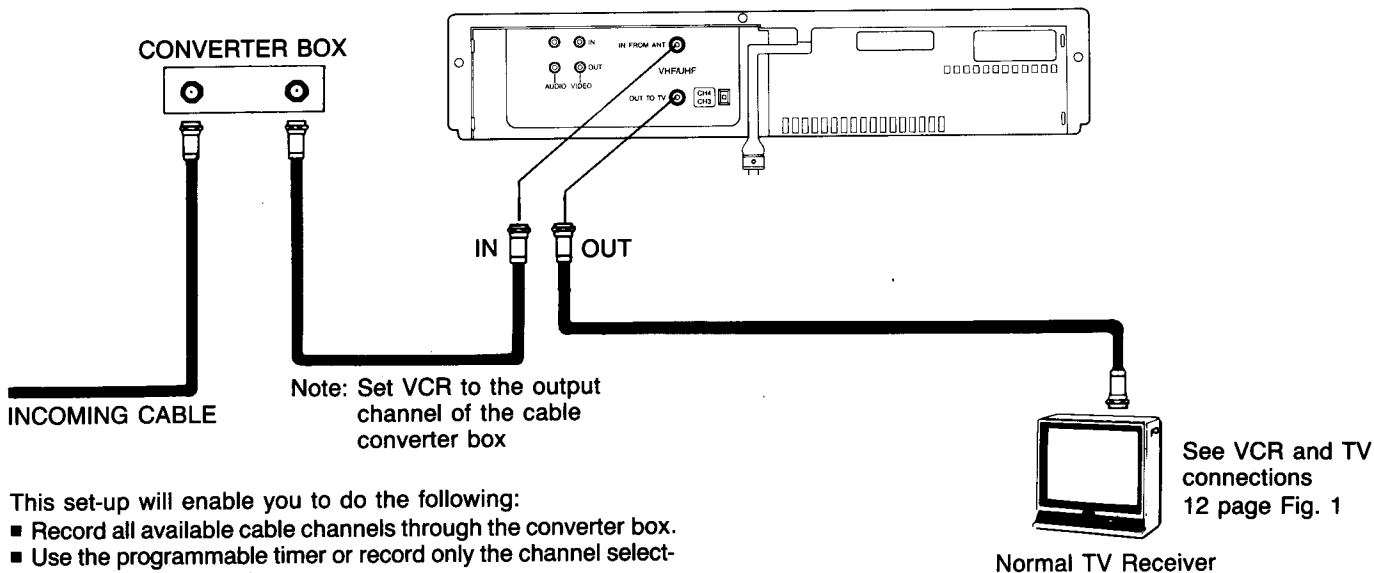
## To record an unscrambled channel and watch another channel (scrambled or unscrambled)



- This set-up will enable you to do the following:
- Record unscrambled cable channels (limited by the capabilities of the VCR tuner, for example 122 channel tuning or 181 channel tuning.)
  - Record one channel and watch another.
  - Use a programmable timer to record a cable signal.

- Notes:
- This set-up will not allow you to record scrambled channels.
  - When in playback or when using the VCR tuner (TV/VCR switch in VCR position), the converter box must be set to channel 3 or 4.
  - When TV/VCR switch is set to the TV position, the converter box can tune into any available channel.

## To record and watch the same channel (unscrambled/scrambled)

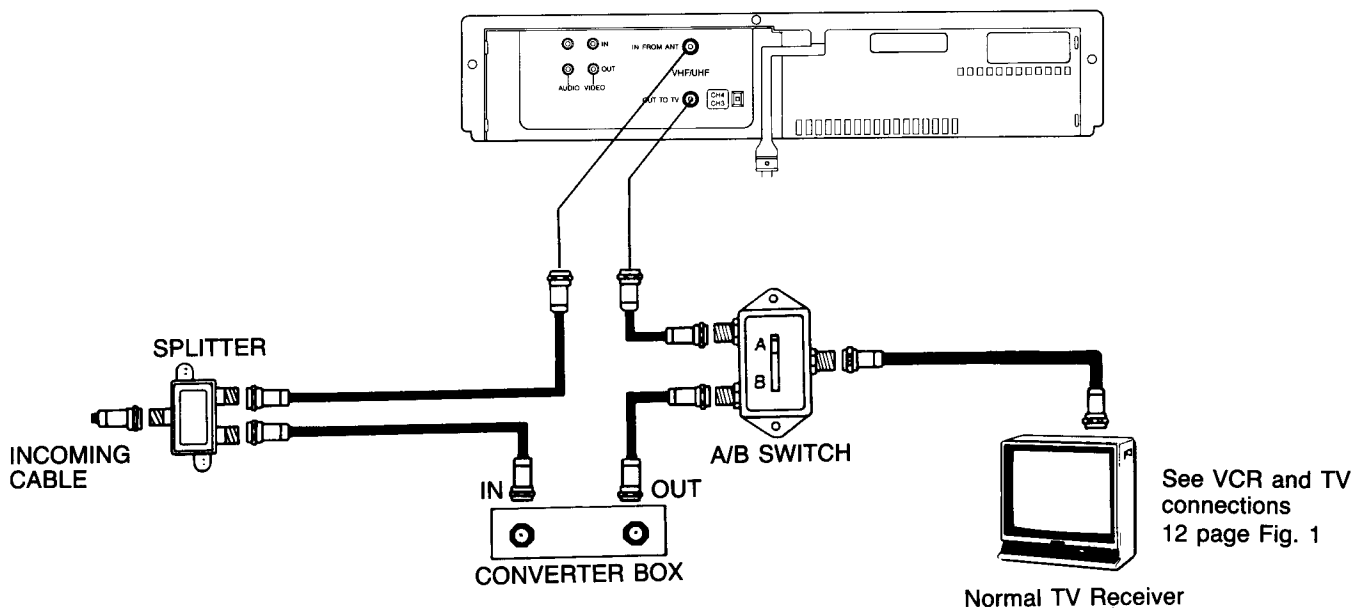


This set-up will enable you to do the following:

- Record all available cable channels through the converter box.
- Use the programmable timer or record only the channel selected at the converter box.

**Note:** This set-up will not allow you to record one channel and watch another.

## To record an unscrambled channel and watch only unscrambled or scrambled channels



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

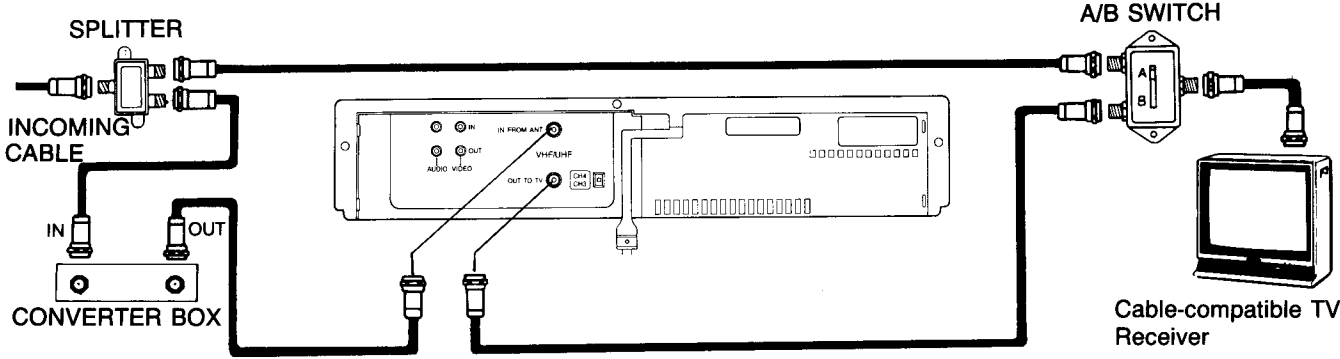
- Record an unscrambled cable channel.
- Monitor all cable channels from converter box when A/B switch is in "B" position.
- Watch one channel and record another.
- Use VCR remote control when A/B switch is in "A" position.
- Use programmable timer to record cable signal.

**Note:** This set-up will not allow you to record scrambled channel.

- Notes:**
- Select the channel to watch on the converter.
  - Set the TV channel selector to output of the converter and VCR.

**To record and watch the same channel (scrambled or unscrambled)  
To record one unscrambled channel and watch another unscrambled channel**

See VCR and TV connections 12 page Fig. 2



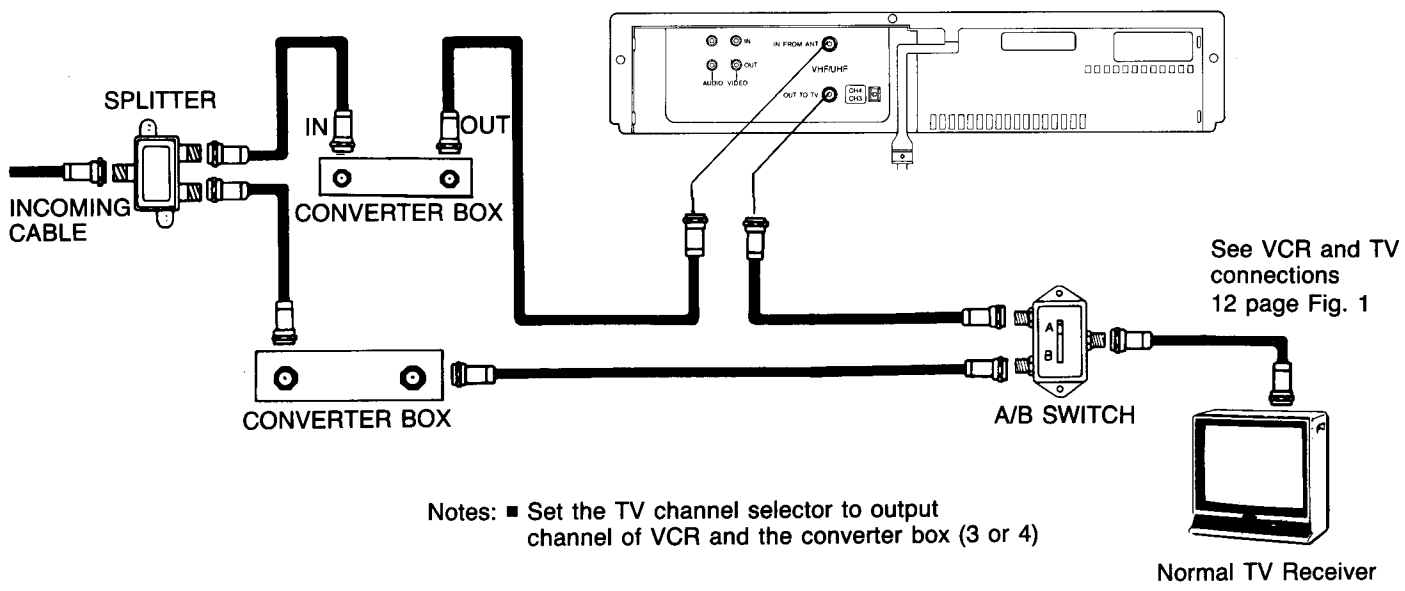
- Notes:
- Set the VCR channel selector to output channel of the converter.
  - Select the channel to be recorded on the converter.

- Notes:
- Set the TV channel selector to output channel of VCR (3 or 4).

- This set-up will enable you to do the following:
- Record all cable channels from the converter 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.
- Use the programmable timer to record only the channel selected on the converter box. (Converter box power must be ON.)

**To record and watch a scrambled or unscrambled channel**



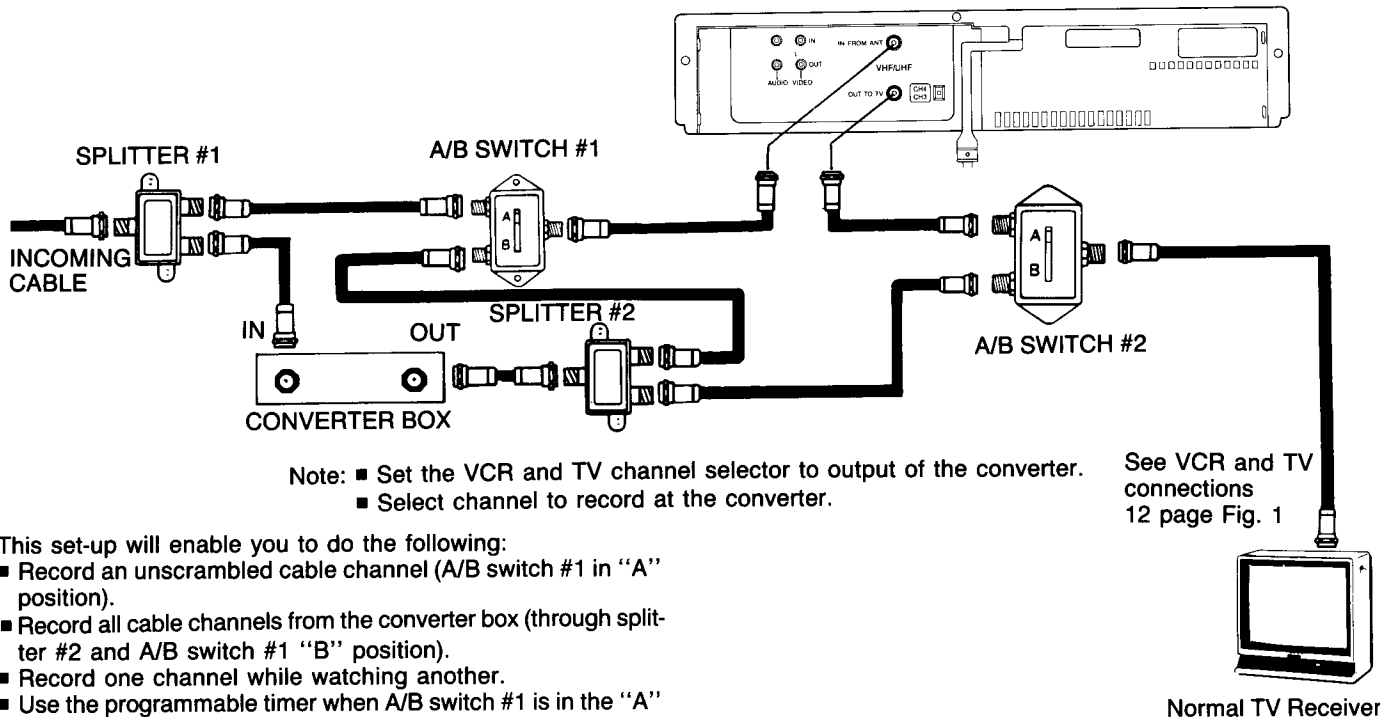
See VCR and TV connections 12 page Fig. 1

- Notes:
- Set the TV channel selector to output channel of VCR and the converter box (3 or 4)

- This set-up will enable you to do the following:
- Record any cable channel.
  - Record one channel and watch another.
  - Use programmable timer to record only the channel selected at the converter box.



**To record and watch the same channel (scrambled/unscrambled)**  
**To record one unscrambled channel and watch another unscrambled channel**



Note: ■ Set the VCR and TV channel selector to output of the converter.  
 ■ Select channel to record at the converter.

See VCR and TV connections 12 page Fig. 1

- This set-up will enable you to do the following:
- Record an unscrambled cable channel (A/B switch #1 in "A" position).
  - Record all cable channels from the converter box (through splitter #2 and A/B switch #1 "B" position).
  - Record one channel while watching another.
  - Use the programmable timer when A/B switch #1 is in the "A" position.

**Note to CATV system installer in the U.S.A.:**

This reminder is provided to call the CATV system installer's attention to Article 820-22 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

**"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 converter 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 converter (decoder) box supplied by the cable company.

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

**Cable Compatible**-either TV or VCR when cable is connected can tune to nonscrambled cable channels, without the use of a cable converter box. There is a limitation to the tuning mechanism of the TV or VCR. This is usually as 105 channel tuning, 117 channel tuning, 133 channel tuning.

**Frequency Conversion**-simply means the ability to change one frequency to another (ex. channel 7 is selected—the converter box takes the channel 7 information and outputs the channel 7 information on channel 3 frequency; for example when channel 11 is selected—the converter box takes the channel 11 information and outputs the channel 11 information on channel 3 frequency.) The converter box and the VCR use this principle of frequency conversion.

# PREPARATION

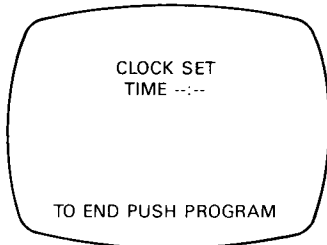
## Setting the VCR Clock

When the power cord is plugged into the receptacle on the wall or after the power failure, the time indicator displays --:--. Follow the procedure below for setting the current time correctly.  
(Example: To set the current time to Monday, 3:58 AM)

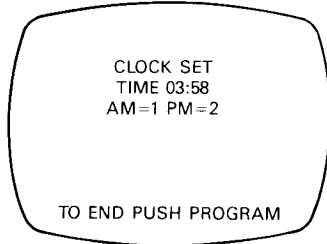
To see the on-screen display:

- Press the POWER button to turn on the VCR.
- Turn on the TV and set it to channel 3 or 4.
- Press the TV/VCR button to select VCR.
- On the remote control, press the PROGRAM button. This menu will appear on the TV screen.

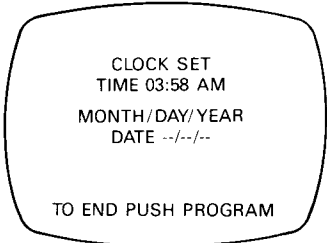
1. To set the clock, press "1" button of the CHANNEL buttons on the remote control.



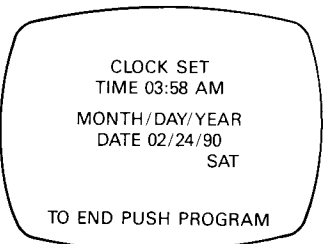
2. To enter the present time, Press the CHANNEL buttons on the remote control one at a time.  
For example, to enter 3:58, press the button 0, 3, 5, and then 8.



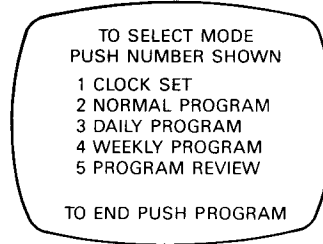
3. Enter AM. or PM.
  - To enter AM, press button 1
  - To enter PM, press button 2



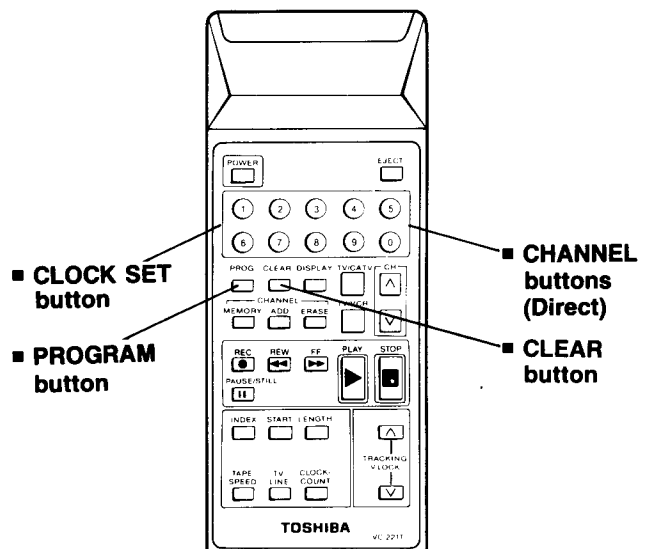
4. To enter today's date, press the CHANNEL buttons one at a time.  
Press the button 0, 2, 2, 4, 9 and then 0.



The day (SAT) will be automatically set immediately.



5. Press the PROGRAM button.  
The clock will start operating of 3:58 AM.



### NOTE:

- The buttons for setting the clock are on the remote control.
- If you press a wrong digit, press the CLEAR button repeatedly until the incorrect digit flashes, and then enter the correct digit.
- When the VCR's back-up time is exceeded during a power failure --:-- on the display will light.  
When this happens reset the clock to the correct present time according to the above steps.

## Setting the VCR Output Channel

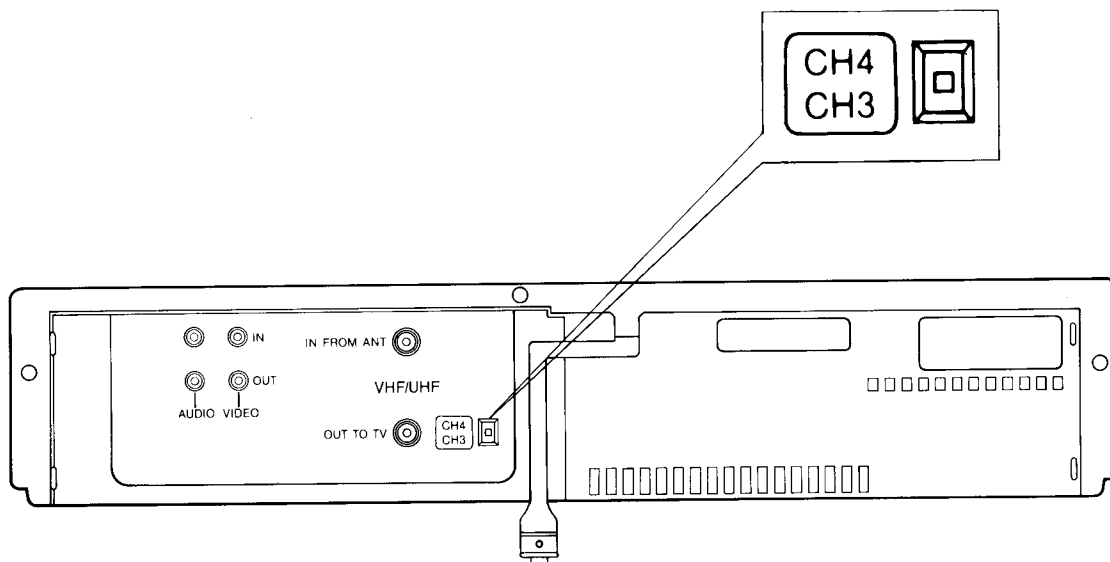
To watch a playback of a tape on the TV screen, a vacant channel of the TV where no program is broadcast is used. A vacant channel is either 3 or 4 depending on the area. Since the VCR is set to CH3 at the factory, corresponding to the TV channel 3, if your vacant channel is 4, switch the 3-4 output channel selector to 4 on the rear panel.

### ① Preparation

Unplug your VCR.

### ② 3-4 Output Channel Selector

Insert a single-blade screwdriver into the slot at the rear of your VCR and slide the output channel selector to the CH3 or CH4 position.



### Notes:

- If you have cable TV, choose the channel which gives you the best reception.
- To play back a tape, set your TV to the same channel as the VCR output channel selector (3 or 4).

## Using the TV/VCR Button

Use this button to select between the VCR tuner and TV tuner.

### ■ The TV Tuner

Use the channel select buttons on the TV to select a TV program.

### ■ The VCR Tuner

The VCR tuner is used when you want to record a TV program while watching it on your TV screen. Use the channel select buttons to select a TV program.

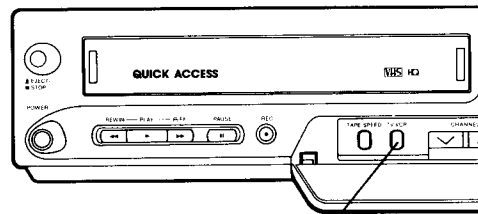
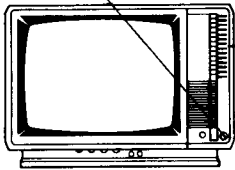
## USING THE TV TUNER

### 1 Setting up the TV set

If the VCR power is off, simply turn your TV set on. There is no need to turn the VCR on.

### 2 TV channel select button

Select the channel you want to watch by using the TV channel select buttons.



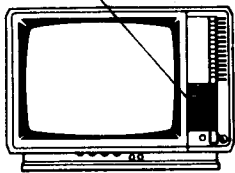
### 3 TV/VCR button

If the VCR is on, set the **TV/VCR** button to "TV" so that the VCR indicator on the VCR multidisplay is off.

## USING THE VCR TUNER

### 1 Setting up the TV set

Turn on the TV set. Select 3 or 4 channel for the video input or switch the TV to video input.



### 4 CHANNEL buttons

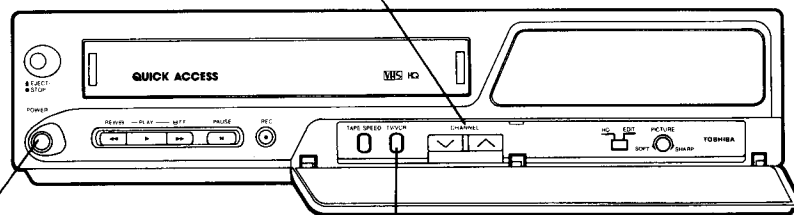
Use the **CHANNEL** buttons on the VCR or remote control to choose the channel you want to watch and/or record. The program on that channel will be shown on your TV screen.

### 2 POWER button

Press the **POWER** button. The power lamp will light.

### 3 TV/VCR button

Set the **TV/VCR** button to "VCR". The VCR indicator will light on the multidisplay.



# CHANNEL PROGRAMMING

## Programming Active Channels into VCR's Tuner

The CHANNEL buttons (MEMORY, ADD, ERASE) on the remote control make it easy and convenient to program TV stations into the VCR's scan list.

Your VCR tuner selects only the channels registered to the scan list when you press the CHANNEL  $\wedge$  or  $\vee$  button.

Note: All of the channels are registered in the scan list before automatic programming.

Automatic programming is usually a "one-time" procedure, but you will need to repeat if you move to the other area, or if power is interrupted for an extended period.

To program active channels:

- ① Connect the VCR to a antenna.
- ② Turn on VCR by pressing the POWER button.
- ③ Press and release the MEMORY button.
- ④ If you want to delete or add individual channels from the scan list, refer to the instructions at the below.

## Deleting Channels from the Scan List

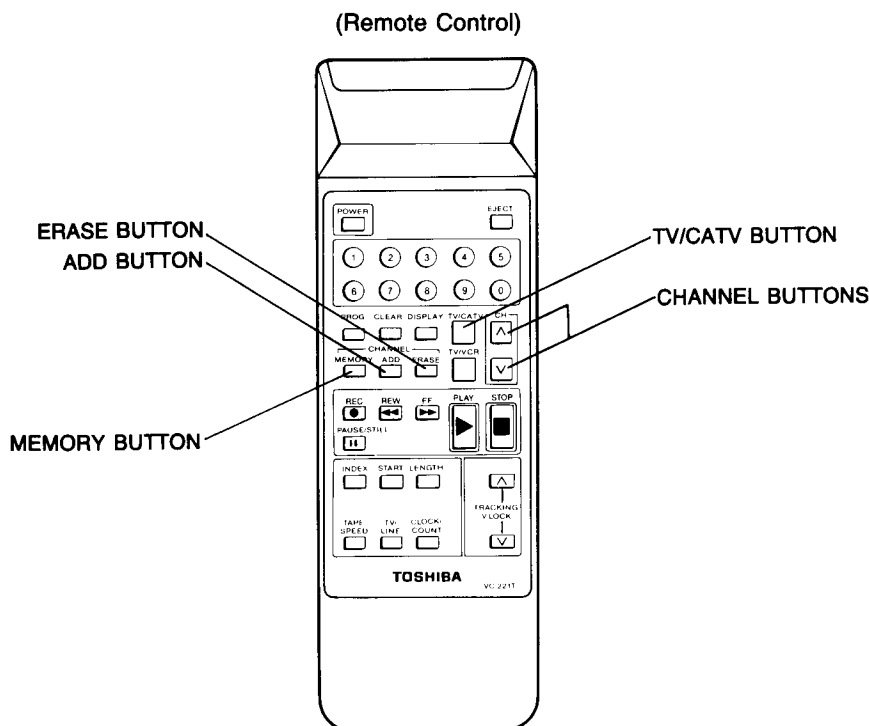
You may want to have only a few favorite channels in the scan list so you can select them more quickly with the CHANNEL  $\blacktriangle$  and  $\blacktriangledown$  buttons. (Use the numbered buttons on the remote control to select channels you deleted from the scan list). Occasionally Automatic Programming may include a vacant channel in the scan list if there happened to be some sort of "noise" or "stray signal" on the channel when the tuner was programmed. This procedure explains how to delete any unwanted channels from the scan list.

- ① Use the CHANNEL  $\blacktriangle$  or  $\blacktriangledown$  button to select the channel that you want to remove from the scan list.
- ② Press the ERASE button.
- ③ Repeat the procedure for each channel you want to delete from the scan list.

## Adding Channels to the Scan List

You may have deleted a channel from the scan list and want to put it back. Occasionally Automatic Programming may "miss" an active channel because the signal is very weak or because the channel happened to be "off the air" when the tuner was programmed. Use this procedure to put any channel in the scan list.

- ① Use the digit (0-9) buttons on the remote control to select the channel you want to add to the scan list.
- ② Press the ADD button.
- ③ Repeat the procedure for each channel you want to add to the scan list.



# Operating the FS Tuner

This VCR has an FS (Frequency Synthesized) tuner and is designed to receive the following TV signals and CATV signals. This VCR can select CATV signals easily.

- I, Broadcast TV signals.
- II, CATV signals
  - 1. STD (standard) Cable TV signals.
  - 2. HRC (Harmonic Related Carriers) Cable TV signals.
  - 3. IRC (Incremental Related Carriers) Cable TV signals.  
IRC is also called ICC (Incremental Coherent Carriers).
  - 4. PHRC (Pivoted Harmonically Related Carriers) Cable TV signals.
  - 5. MPC (Multi Pivoted Carriers) Cable TV signals.

## Setting the CATV mode

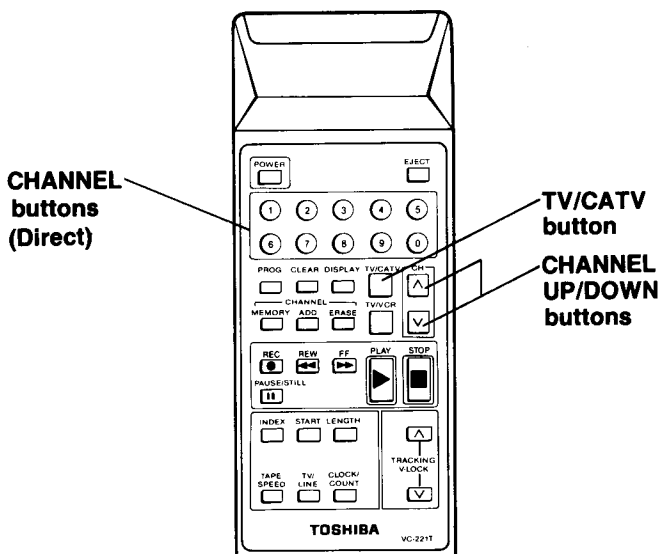
Press the TV/CATV button to display the CATV indicator and the VCR changes to the CATV mode to receive the CATV signals.  
(Press the button again and the CATV indicator goes off to return to the TV mode.)

## To Select CATV Signals

This VCR is designed to select CATV signals automatically.

## To Select Channels

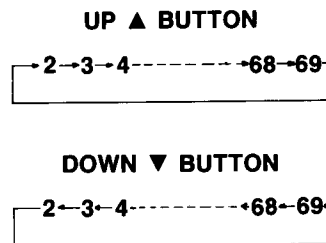
1. USING THE CHANNEL BUTTONS (on the Remote Control)
  - (1) To select Channels 2 through 9, For example, press 0 and 4. Channel 4 will be selected immediately.
  - (2) To select Channels 10 through 99, the two-digit entry must be used. Example; press 3 and 5. Channel 35 will be selected immediately.
  - (3) To select channels 100 through 125, the three-digit entry must be used. Example; press 1, 1 and 4. Channel 114 will be selected immediately. If the third digit is not pressed within two seconds, channel 11 will be selected.



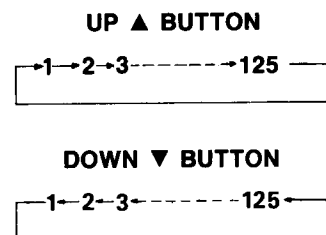
2. USING THE CHANNEL UP ▲/DOWN ▼ BUTTONS (inside the console at the front panel or Remote Control)

Press and release the CHANNEL UP ▲/DOWN ▼ button. The channel steps up or down. If you want to select the next channel, press the button again.

### (1) TV mode



### (2) CATV mode



# CHANNEL REFERENCE CHART

NUMBER ON THIS VCR		2	3	4	5	6	7	8	9	10	11	12	13
CORRESPONDING CHANNEL NUMBER	Broadcast TV	2	3	4	5	6	7	8	9	10	11	12	13
	CATV STD (HRC/IRC)	2	3	4	5(A-7)	6(A-6)	7	8	9	10	11	12	13

14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	AA	BB

39	40	41	42	43	44	45	46	47	48	-----	69	-----	125	1
39	40	41	42	43	44	45	46	47	48	-----	69			
CC	DD	EE	FF	GG	HH	II	JJ	KK	LL	-----	69	-----	125	1

**Note:**

If you selects any channel which is not on the channel reference chart by the direct key on the Remote Control, the VCR will not select that channel.

INSTALLATION AND PREPARATION

# Using the Video Cassette

Only Video cassettes with the **VHS** mark can be used with this VCR. Unlike audio cassettes, only one side of a video cassette can be recorded on.

## Tape Speed

**Recording:** Tapes can be recorded at two different speeds, SP (Standard Play; records 3.34 cm/sec.) and SLP (Extended Play; records 1.11 cm/sec.) You select the speed you prefer using the TAPE SPEED button. The selected speed mode will show up on the multidisplay.

The basic difference between these speeds is that the SLP mode allows you to get more footage on your tape. Although this is economical, the quality of the image is not as good as recordings made in the SP mode.

**Playback:** There are three possible speeds for playback; SP, LP and SLP. The appropriate speed will be chosen automatically by the VCR.

### Applicable Speeds

Speed / Mode	SLP	LP	SP
Recording	0	—	0
Playback	0	0	0

### Different types of cassettes and maximum recording times

Video Cassette / Record Mode	T-160	T-120	T-60	T-30
SLP	480 min	360 min	180 min	90 min
SP	160 min	120 min	60 min	30 min

(EXAMPLE: With a T-160 video cassette you can record 480 min. of footage at the SLP speed or 160 min. at the SP speed. As you have probably noticed the code T-160 denotes the normal length of the tape at the SP speed.)

**Important:** When an important recording is to be made, first make a test recording to confirm that picture and sound are normal.

## Recording Over Old Tapes

You can record over old tapes and the old recorded picture and sound will be erased completely.

Similar to audio cassettes, you cannot record over tapes which have had their safety tabs removed. Removing the tab is a safeguard against accidentally erasing important recordings.

- To remove the safety tab snap it off with a screwdriver as shown in Fig. 1.
- To record over a tape without a safety tab all you need to do is cover the opening with a piece of adhesive tape as shown in Fig. 2.



Fig. 1



Fig. 2

## Inserting a Cassette

When a tape is inserted the VCR will automatically turn on.

- Push the tape in with your finger until it is pulled in automatically and clicks into place as shown in Fig. 3.
  - The tape indicator will light up on the upper/left corner of the multi display.
- Make sure that you insert the cassette sideways and with the "windows" facing up as shown in Fig. 4.
  - Do not insert hand(s) or any foreign object(s) into the cassette compartment. Otherwise, injury may result (be especially careful with children) or damage may occur to the VCR.

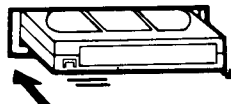


Fig. 3

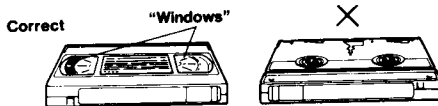


Fig. 4

## Removing a Cassette

- If the power is not on, press the POWER button. The power lamp will light up.
- Press the EJECT button. The tape will be ejected automatically.
- Pull the tape out as shown in Fig. 5.

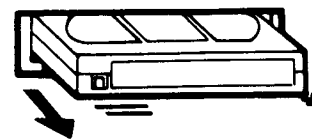
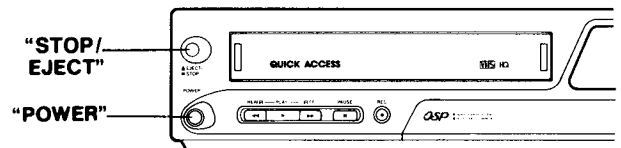


Fig. 5





# PLAYBACK

## Basic Playback

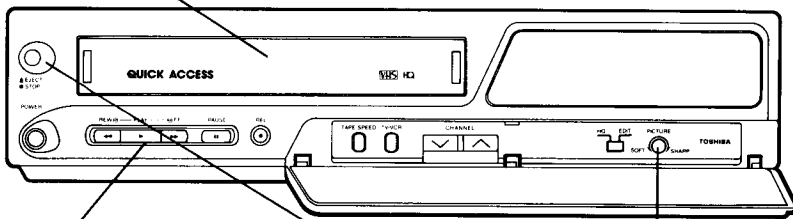
### ① Setting up the TV set

Turn on the TV set. Select 3 or 4 channel for the video input.

### ② Cassette compartment

Load the tape for playback, then this VCR will be automatically turned on.

(If the tape with the safety tab removed is loaded, the AUTO PLAY function operates to start playing back the tape automatically.)



### ③ PLAY button

Press **PLAY** button.

Once this button is pressed, tape playback starts.

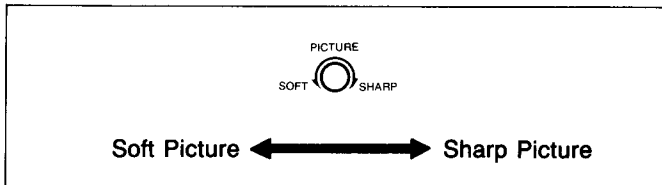
When the tape is played back to the end, it will be automatically rewound to the beginning.

### ④ STOP button

Press **STOP** button to stop playback.

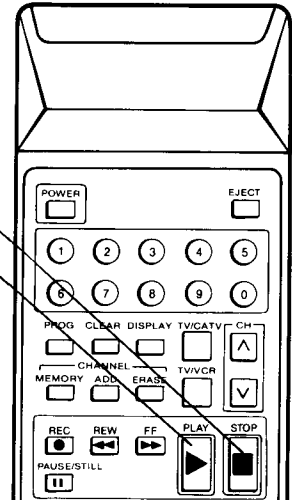
### ■ PICTURE control

This control adjusts the picture sharpness during playback.



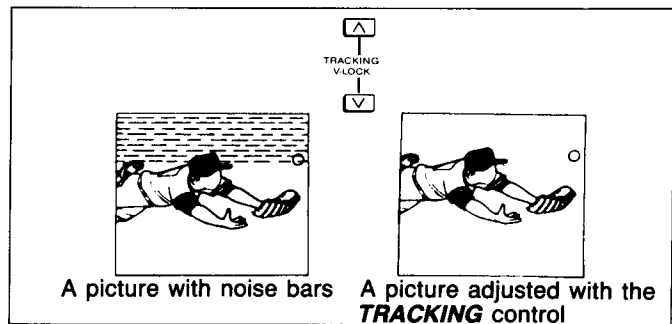
### ④ STOP button

### ③ PLAY button



### ■ TRACKING control

Tracking adjustment is needed when noise bars (as line) appears on the screen while playing back a prerecorded tape.



## AUTO PLAY

When the tape with the safety tab removed is loaded, the following operations automatically start.

### ① Auto Playback

This operation automatically plays back the tape.

### ② Auto Rewind

This operation automatically rewinds the tape when tape playback comes to the end.

Note that Auto Play is cancelled when the operation button is pressed during playback.

## Note:

■ Basic playback is possible in all three modes, SP, LP, and SLP.

BASIC OPERATIONS

# RECORDING

## Basic Manual Recording

### ① Setting up the TV set

Turn on the TV set. Select 3 or 4 channel for the video input.

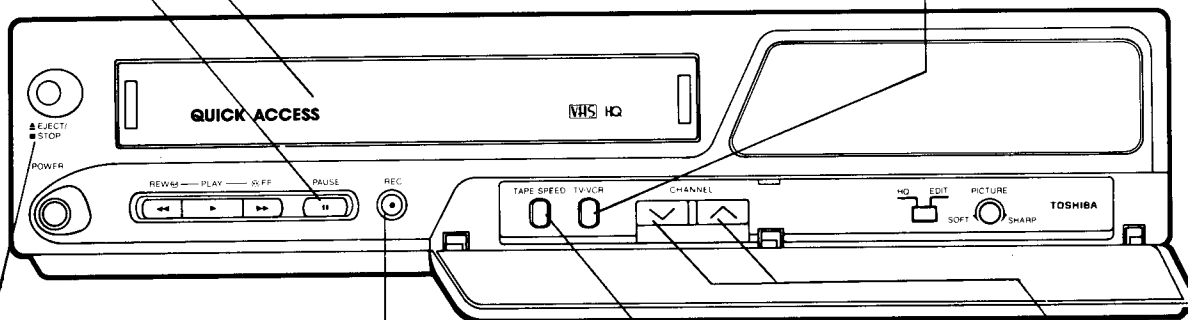
#### ■ PAUSE/STILL button

### ② Cassette compartment

Load the tape into this compartment for recording. The VCR is turned on automatically and the indicator on the display lights.

### ③ TV/VCR button

Press the **TV/VCR** button. The VCR indicator on the display will turn on.



### ⑦ STOP button

Press the **STOP** button to stop recording. If the tape is recorded to its end, it is rewound automatically.

### ⑥ REC button

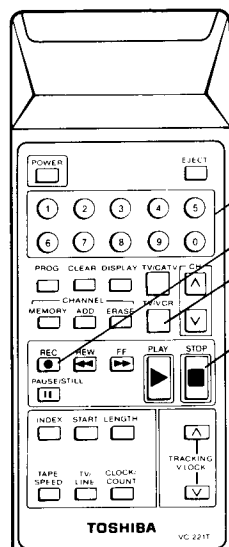
Press the **REC** button. The REC indicator on the display lights and recording starts.

### ④ TAPE SPEED button

Press the **TAPE SPEED** button to select the recording speed. Each time the button is pressed, SP and SLP indicators on the display light alternately.

### ⑤ CHANNEL button

Press the **CHANNEL** button to select the desired channel for recording.



### ⑤ CHANNEL buttons

### ⑥ REC buttons

### ③ TV/VCR button

### ⑦ STOP button

#### ■ PAUSE/STILL button

Use this button to stop recording temporarily. This enables you to skip recording unnecessary parts of a program (such as commercial messages).

1 Press the **PAUSE/STILL** button during recording and recording is stopped temporarily. However, since the TV resumes operating, the picture and sound of the program can be received.

2 Press the **PAUSE/STILL** button to continue recording.

**Note:** If the VCR pauses for more than 5 minutes, it automatically enters the stop mode to protect the tape.

## Notes:

- Basic Manual Recording is possible only in the SP and SLP modes.
- The recorded pictures on the tape may be distorted around where the **PAUSE/STILL** button is used. This is not a malfunction.
- Since channel clock function operates during recording, TV channels cannot be changed directly. To change the channel, press the **PAUSE/STILL** button first. If the **PAUSE/STILL** button is pressed again, a TV program in a new channel can be recorded.

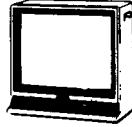
- Recording can be done without turning on the TV. For this, operating the **TV/VCR** button in step ③ is not necessary.

# Recording a TV Program While Watching Another

This function enables you to watch a program on another channel when recording a TV program.

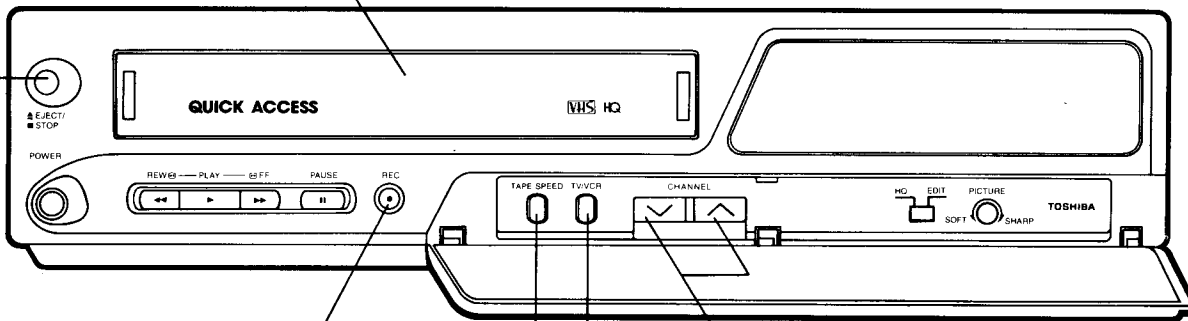
## ① TV set

Turn on the VCR.  
Select the desired TV channel.  
To stop watching the TV program, turn off the TV.  
The VCR resumes recording.



## ② Cassette compartment

Load the tape into this compartment for recording.  
The VCR is turned on automatically and the indicator on the display lights.



## ⑤ REC button

Press the **REC** button.  
The REC indicator on the display lights and recording starts.

## ③ CHANNEL button

Press the **CHANNEL** button to select the desired channel for recording.

■ TV/VCR button

## ④ TAPE SPEED button

Press the **TAPE SPEED** button to select the recording mode. Each time the button is pressed, SP and SLP indicators on the display light alternately.

## ⑥ STOP button

Press the **STOP** button to stop recording.  
If the tape is recorded to its end, it is rewound automatically.

## Note:

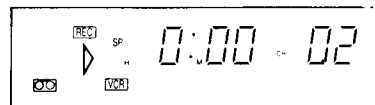
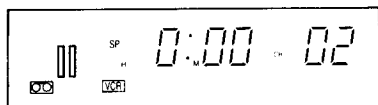
- To watch another program while recording a TV program, follow the next procedure. First, press the TV/VCR button to turn off the VCR indicator on the display. Select the desired channel on TV.

# COUNTER FUNCTION

## Linear Time Counter Function

Since the VCR employs a linear time counter, it can indicate to the second the elapsed time of the tape running.

1. Load a cassette into the cassette compartment. The VCR is turned on automatically and the indicator on the display lights.
2. Press the CLOCK/COUNT button on the remote.
3. Press the CLEAR button on the remote. The linear time counter indicates "H0:M00"
4. Select the desired operation such as playback recoding, rewinding, or fast forwarding. The linear time counter indicates how long the tape has been running in actual time on the display.



### Notes:

- When tape is ejected counter resets to 0:00. The counter will only display time from recorded sections on the tape. Blank tapes or non-recorded sections of tape will not advance or reverse counter display.

## Memory Stop Function

If you'd like to return to a scene many times, the VCR will find it for you automatically. (You won't have to watch the tape counter number). The trick: During rewind or fast forward, the VCR stops automatically when "H0:M00" is displayed on the tape counter. So, if "H0:M00" is the start of the scene you want the VCR finds it for you Here's what you do:

1. When the scene you wish repeated appears, press CLEAR to reset the tape counter to "H0:M00".
2. Return to the scene at any time by pressing REW or FF to rewind or fast forward the tape. When "H0:M00" is displayed, the VCR stops automatically.
3. Press PLAY to view the scene again.
  - If you don't wish to see the scene again, do not press PLAY. Instead, Press REW or FF.

# AUTO SEARCH

## Index

You can easily search the recorded program using the index signal registered together with it on the tape.

- **Index Search**

This function plays back the tape for about 5 sec. at each section where the index signal was registered during fast forward or rewind.

- **Skip Search**

Once the index signals are specified for skipping, this function can skip to the specified section from where the tape was to start playback from there.

---

## Index Register

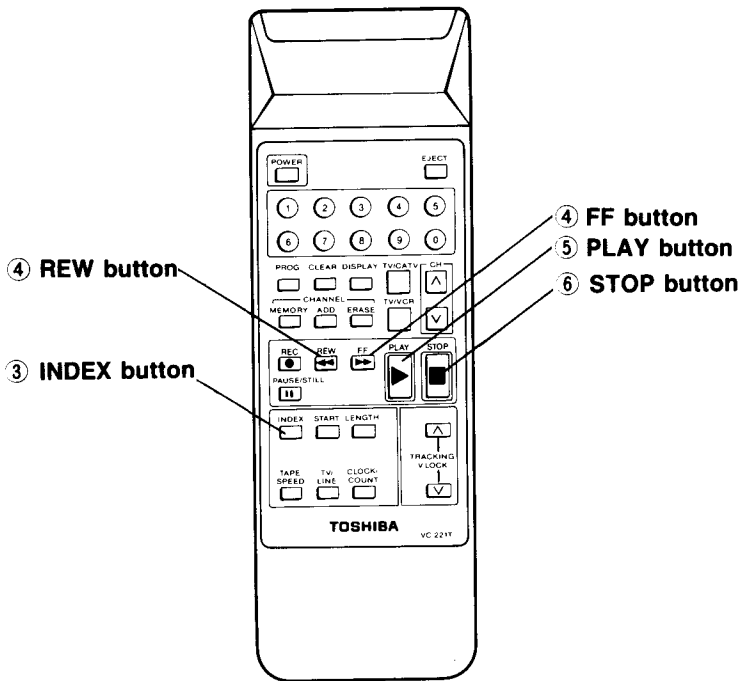
- **Auto Register**

Press the recording button during the stop mode and the index signals are registered automatically.  
Auto register can be operated during one touch timer or timer programming recording.

# Index Search

This function plays back the tape around where the index signal is registered for about 5 seconds while fast forwarding or rewinding. (This function is operable using the remote control.)

(Remote Control)



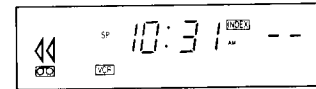
③ Press the **INDEX** button.



INDEX SEARCH:--  
OR PUSH FF OR REW  
FOR SCAN AND PLAY

"INDEX" on the indicator comes on.

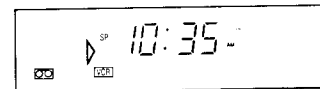
④ Press either the **FF** button or **REW** button within 8 seconds.



SCAN AND PALY

The VCR starts to fast forward or rewind the tape, playing it back around the section where the index signal is registered for 5 seconds. This operation is repeated until the end of the tape is reached.

⑤ Press the **PLAY** button when the desired program is searched. "INDEX" on the indicator goes off.



- ① Turn on the TV set. Select 3 or 4 channel for the video input.
- ② Load the tape with the index signals, then play back or stop it depending on preference.

If the button is not pressed, fast forwarding or rewinding resumes while the next index signal is being searched.

⑥ Press the **STOP** button to stop playback.

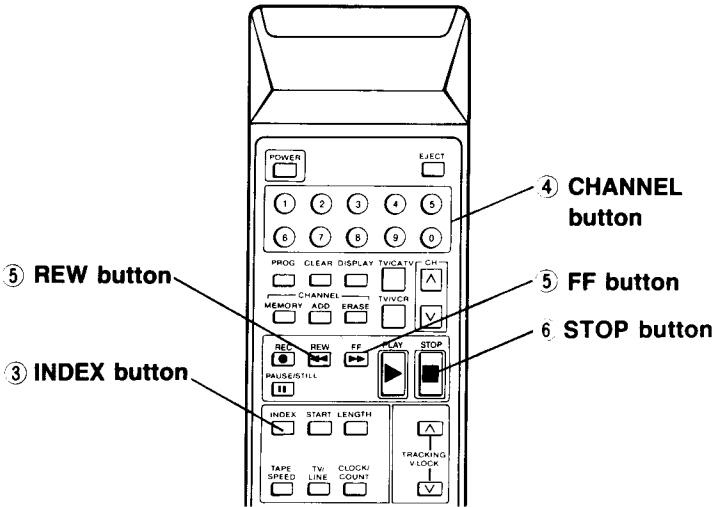
## Notes:

■ Press the **PLAY** button to stop index search.

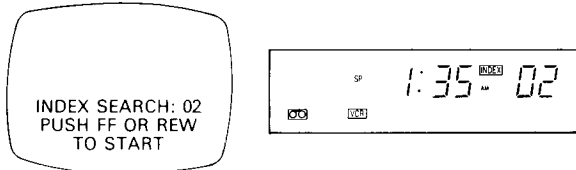
■ Index search may not be applied to the first program recorded on the tape.

# Skip Search

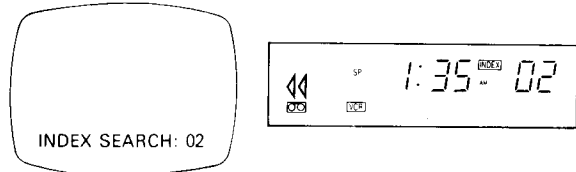
This function fast forwards or rewinds the tape to the point with the specified index signal to start playback from there automatically. (Specifying the index signal can be operated with the CHANNEL button on the remote control.)



4 Press the **CHANNEL** buttons to specify the index signal within 8 seconds. The VCR indicator comes on and the index signal number is displayed on the indicator.



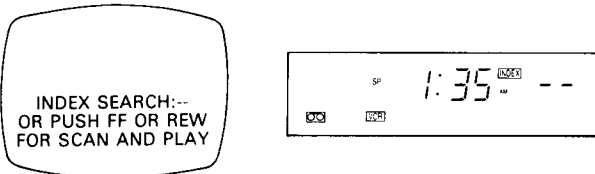
5 Within 8 seconds, press the **FF** button if the desired index signal is in the program ahead, and the **REW** button if it is in the program behind.



Enter skip search from the stop or playback mode.

- 1 Turn on the TV set.  
Select 3 or 4 channel for the video input.
- 2 Load the tape with the index signals, then play back or stop it depending on preference.
- 3 Press the **INDEX** button.  
"INDEX" on the indicator comes on.

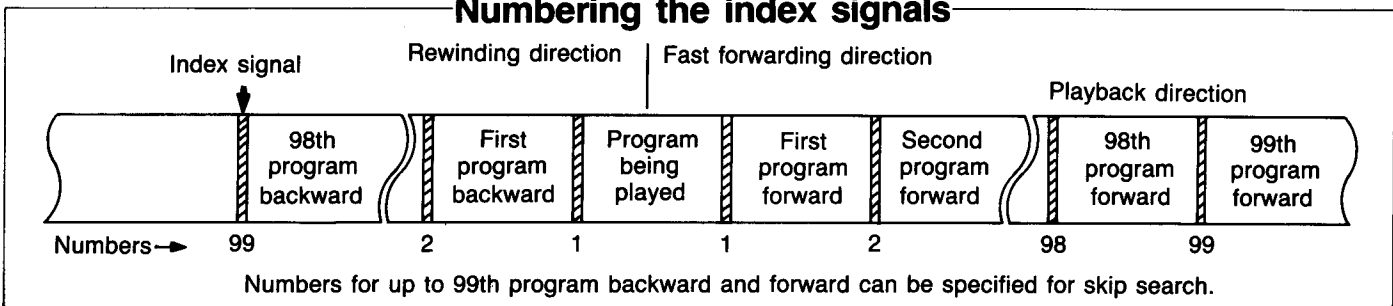
When the tape comes to the specified index signal it is played back automatically. The counter returns to the elapsed-time-on-tape read from the index signal read.



6 Press the **STOP** button to stop playback.

CONVENIENT FUNCTIONS

## Numbering the index signals



### Notes:

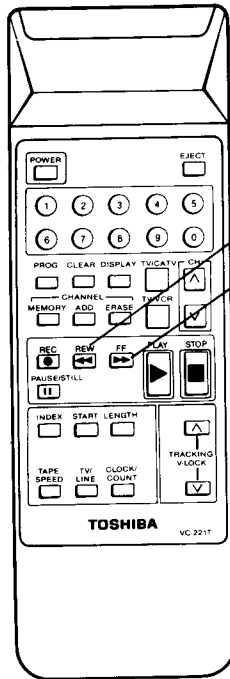
- Press the **PLAY** or **STOP** button to stop skip search.
- Skip search may not work for the first program on the tape.
- The counter read for numbers reduces by one each time an index signal is skipped.

# SPECIALIZED EFFECTS

## Picture Search

This function lets you fast forward (FF) and reverse (REW) at high speed while the picture is played back on the screen. Its main purpose is to allow you to quickly locate a particular scene or segment on the tape.

Remote Control



REW button

FF button

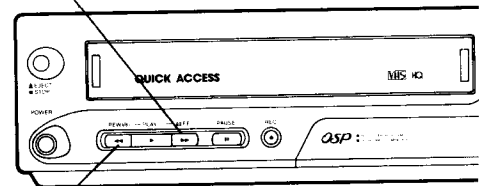
### ACCEL search

If you keep pressing the FF or REW button during playback, the searching speed will be increased to 7 times (SP speed only) or 21 times (SLP speed only) normal speed.

### FF button

During playback press this button without pressing STOP.

The rewinding or fast-forwarding frames will be shown on your TV screen at 5 times normal speed. Press the **PLAY** button and the VCR will return to the normal playback mode.

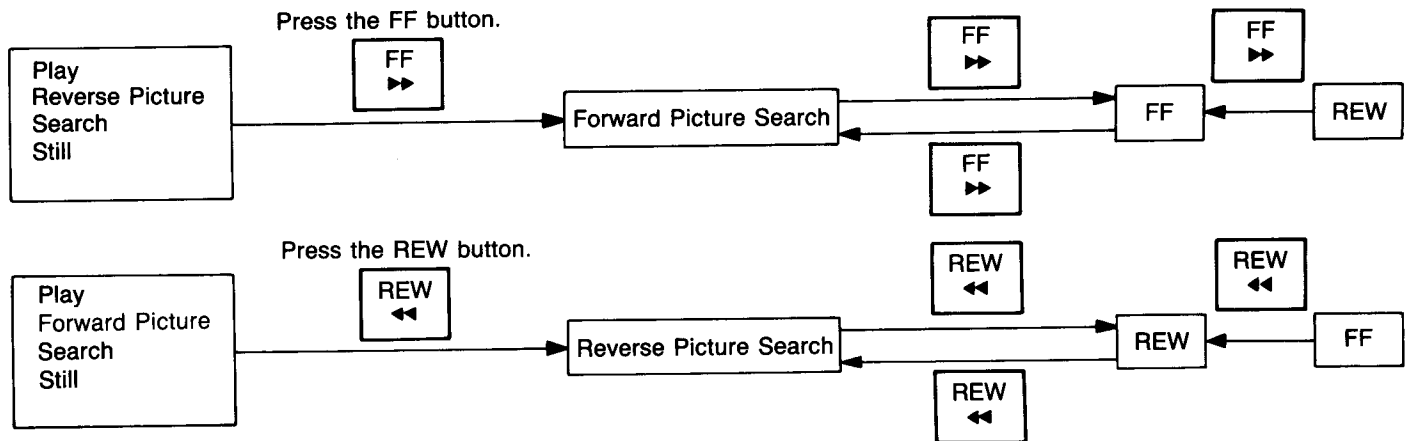


### REW button

During playback press this button without pressing STOP.

The rewinding or fast-forwarding frames will be shown on your TV screen at 5 times normal speed. Press the **PLAY** button and the VCR will return to the normal playback mode.

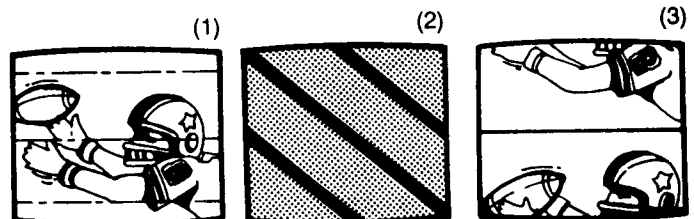
Forward Picture Search and Reverse Picture Search can be entered not only from Play mode but also from other modes e.g.: Fast-Forward (FF), Rewind (REW), Forward or Reverse Picture Search, Still and Slow. Each time the FF or REW button is pressed, a mode is entered in the following sequence.



SPECIALIZED OPERATIONS

### Notes:

- During Picture Search the sound is muted and several horizontal noise bars appear across the screen as shown in Figure (1). This is a normal operation. If noise patterns appears on your screen as shown in Figures (2) and (3), adjust the appropriate horizontal/vertical controls on your TV set.
- When the picture search is used in the SP mode, noise and skew may appear. This is a normal operation.

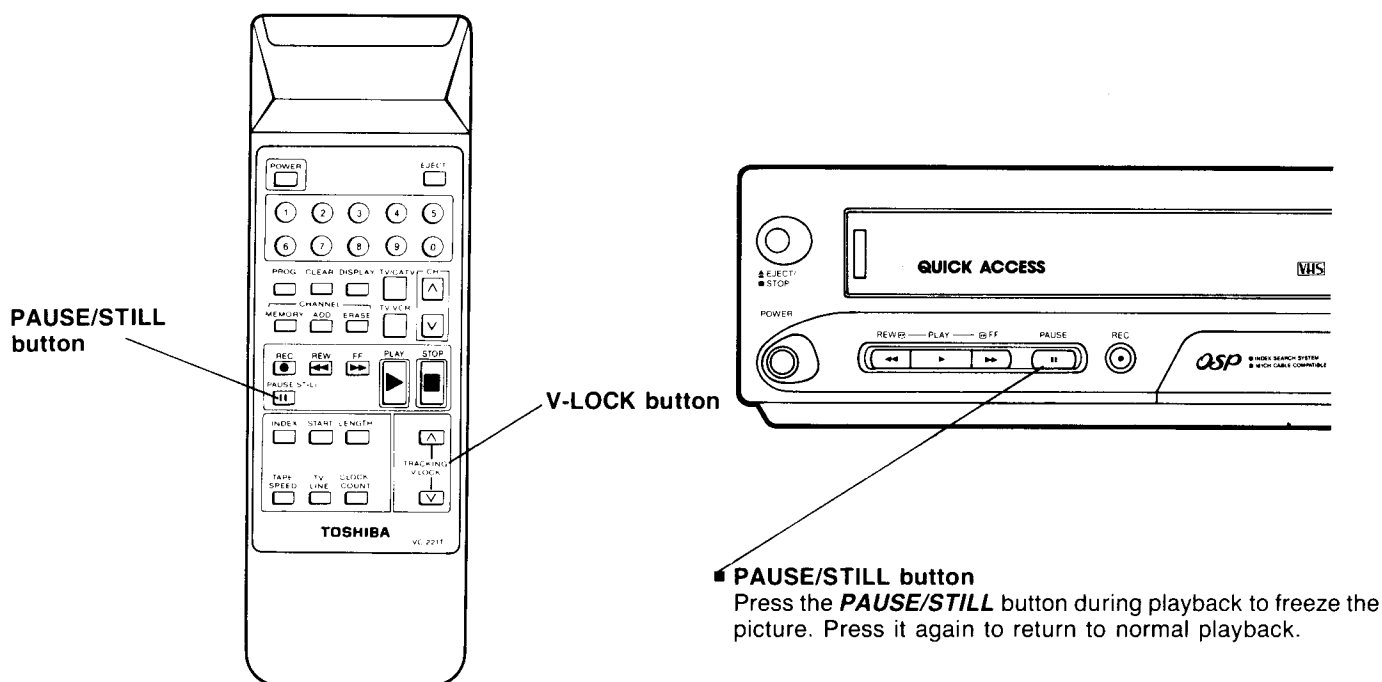




## Still Frame

While the tape is playing, press **PAUSE/STILL** to temporarily stop the tape and display a still (freeze frame) picture.

- There will be no sound.
- Streaks within the picture are normal. (Best results are on tapes recorded at the SLP speed. More about that later).
- In still mode, you may adjust the **TRACKING/V-LOCK** on your Remote control to minimize vertical shaking on the TV screen.



### Note:

- Still frame is cancelled automatically after about 5 minutes operation to return to normal playback.

# TIMER RECORDING

## One Touch Timer Recording

One Touch Recording (OTR) lets you record up to four hours without programming the timer. It also allows you to start (or continue) recording immediately or to delay recording up to 24 hours. When the recording is finished, the VCR will turn off automatically. Although you do not have to program the timer, the clock must be set before you can express Record.

### To use Express Record, first set up your VCR unit for basic recording:

1. Turn on TV and select channel 3 or 4, whichever is not used in your area.
2. Set VCR channel 3 or 4 Selector Switch on the back of the unit to the same channel you selected on your TV.
3. Insert a cassette tape with record safety tab intact, then POWER comes on automatically.
4. Press the tape speed button to set the desired record speed-SP, LP, or SLP on hand unit.
5. Press VCR/TV button to set VCR. "VCR" indicator will appear on display.

### To Immediately Start OTR

1. Select the channel to be recorded.
2. Press LENGTH (at least twice) to select desired recording time. (0:30 (30 minutes) to 4:00 (4 hours)

Then the VCR will start to record immediately and turn off at the preslected time. The "TIMER" and, REC indicator will appear on the multifunction display at the same time when press the LENGTH button.

The immediate start OTR set time will change by pressing LENGTH button only as shown in the diagram below.

Number of press LENGTH button.	LENGTH time on display.
1	0:00
2	0:30
3	1:00
4	1:30
5	2:00
6	3:00
7	4:00
8	0:00

### To Delayed Start OTR

1. Select the channel to be recorded.
2. Press START button. (Clock will skip to next half hour.)
3. Press START button until desired start time appears in display.
4. Press LENGTH to select desired recording time in display.
5. Press POWER to turn off VCR.

### To Cancel Delayed-Start OTR

Press LENGTH button until the display shows 0:00 or press POWER Button.

### To Check the Delayed-Start OTR.

During Power off Mode or TIMER stand-by mode if you want to check the content of Delayed-Start OTR, press start button or LENGTH button. The START time or LENGTH time of OTR will appear on the display for 8 seconds. Then, the display will return to the current time.

### Note on OTR:

If the current time of day is not preset, OTR function will not operate.

If you use the cassette with the record safety tab removed. OTR will not operate because the VCR will eject the cassette when you press the LENGTH button or POWER button.

The is already recording with OTR and vice versa. But after the OTR, it will then start TIMER recording immediately if the end time of OTR is set before the start time of Timer recording.

At the end of recording, the VCR will automatically turn off and the current time of day will be displayed.

# Programmable Timer Recording

The Programmable Timer lets you record up to 8 different programs over a period of one year when you are not at home or are busy. All you have to do is set the timer to the appropriate day, time and channel for the program you want to record.

The buttons for setting the Programmable Timer are on the REMOTE CONTROL.

You can program the timer to do following:

## Setting the Programmable Timer.

This example is for recording the program on Channel 6, to be broadcast from 6:00 p.m. to 8:05 p.m. on Mar 07, 1990 (3/07/90) as program 2. (Normal Program. The present time is 11:30 a.m., Feb 28, 1990.)

- ① Load a cassette with a safety tab into the cassette compartment. The VCR is turned on automatically and the indicator on the display lights.
- ② Check the display if the current time is set correctly.
- ③ Press the PROGRAM button. The programming "menu" appears on the TV screen. Press "2" to enter a NORMAL PROGRAM, "3" to enter a Daily Program, or "4" to enter a weekly program.

TO SELECT MODE  
PUSH NUMBER SHOWN  
1 CLOCK SET  
2 NORMAL PROGRAM  
3 DAILY PROGRAM  
4 WEEKLY PROGRAM  
5 PROGRAM REVIEW  
  
TO END PUSH PROGRAM

- ④ Press the "2" button on the Remote Control. All 8 program numbers will be flashing because none of them have been used.

NORMAL PROGRAM  
PROGRAM 12345678  
SELECT PROG NUMBER  
  
TO END PUSH PROGRAM

- ⑤ Press the "2" button on the Remote Control, to select the program 2. The display will prompt you to select a channel number.

NORMAL PROGRAM  
PROGRAM 2  
CH --  
  
TO END PUSH PROGRAM

- ⑥ Press the CHANNEL buttons 0, 6 to set the channel to 6

NORMAL PROGRAM  
PROGRAM 2  
CH 6  
TIME ON ---  
  
TO END PUSH PROGRAM

- ⑦ Press "0" "6" "0" "0" buttons to set the recording on time. The display will prompt you to select either AM or PM.

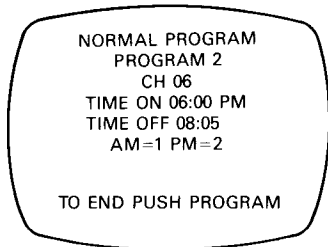
NORMAL PROGRAM  
PROGRAM 2  
CH 06  
TIME ON 06:00  
AM=1 PM=2  
  
TO END PUSH PROGRAM

- ⑧ Press "2" button to set the recording on time to P.M. The display will prompt you to enter the recording off time.

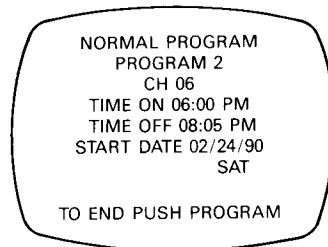
NORMAL PROGRAM  
PROGRAM 2  
CH 06  
TIME ON 06:00 PM  
TIME OFF ---  
  
TO END PUSH PROGRAM

SPECIALIZED OPERATIONS

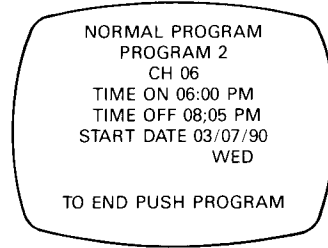
- 10 Press "0" "8" "0" "5" buttons to set the recording off time to 8:05.



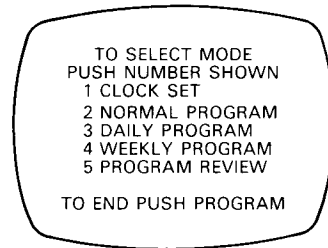
- 11 Press "2" button to set the recording off time to PM.



- 12 Press "0" "3" "0" "7" buttons to set the recording START DATE to Mar 7.



- 13 Press the PROGRAM button



This completes programming one program for timer recording. If no other program is necessary for timer recording, proceed to step 14. To program the remaining programs up to seven, repeat the procedure from step 3 to step 13.

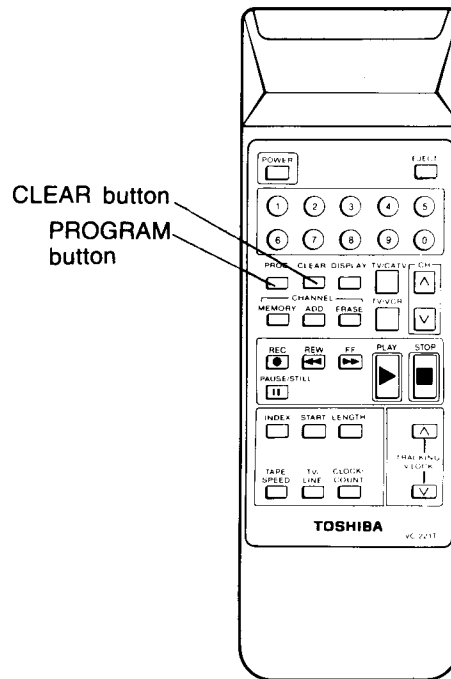
- 14 Press the Power button. The power goes off, and the VCR enters the timer recording stand-by mode. Recording starts automatically at the set time.

## Confirming Programmed Contents

1. Press the PROGRAM button on the REMOTE CONTROL to display the programming menu.
2. Press the "5" button on the REMOTE CONTROL (PROGRAM CONFIRM). The TV screen will display the information of the program number "1". Press the "5" button again if you want to view the next program information.
3. When you are finished, press the PROGRAM button.

## Clearing the Programmed Contents.

1. Press the PROGRAM button on the REMOTE CONTROL to display the programming menu.
2. Press the "5" button on the REMOTE CONTROL. The TV screen will display the information of the program number "1". Press the "5" button until the program number you want to erase is displayed.
3. Press the CLEAR button
4. When you are finished, press the PROGRAM button.



# SPECIALIZED OPERATIONS

## Copying VCR Recording

You can dub the tape for editing by connecting this VCR to another VCR.

### Using this VCR for playback (see p.24)

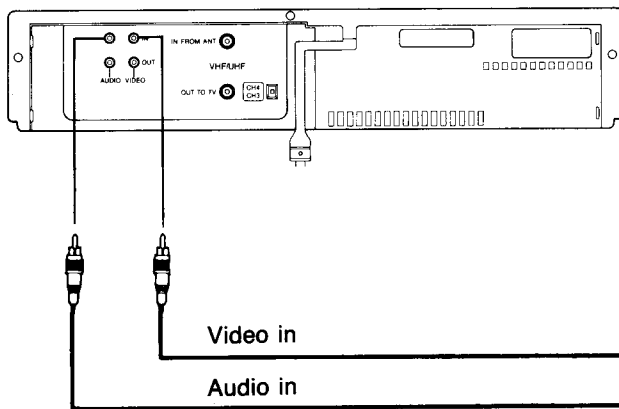
- ① This VCR: Set the **PICTURE SELECT** switch to "EDIT".
- ② Recording VCR: Press the record button, then the pause button to enter the recording pause mode.
- ③ This VCR: Press the **PLAY** button to activate play.
- ④ Recording VCR: Cancel the pause mode to activate recording.
- ⑤ Both VCRs: To terminate recording, press the stop button on both VCRs. Copying is completed.

### Using this VCR for recording (see p.25)

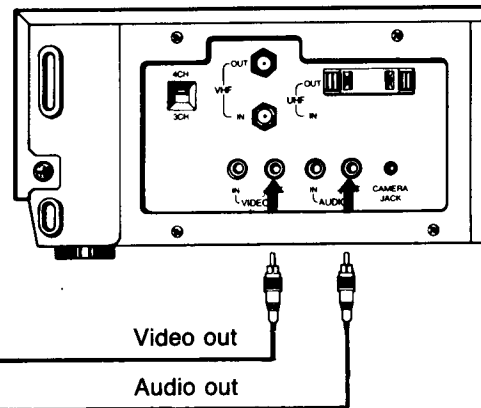
- ① Playing VCR: Set the picture select switch to "EDIT", if possible.
- ② This VCR: Press the **REC** button, then the **PAUSE/STILL** button to enter the pause mode.
- ③ Playing VCR: Press the play button to activate play.
- ④ This VCR: Press the **PAUSE/STILL** button again to cancel the pause mode to start recording.
- ⑤ Both VCRs: To terminate recording, press the stop button on both VCRs. Copying is completed.

### Connection

Recording VCR



Playing VCR



### PICTURE SELECT switch



- HQ.: This position is for playing the tape.  
EDIT: This position enables you to reduce deterioration of picture quality, to feed proper signals for dubbing. Set the switch on the playing VCR to this position.

When dubbing is completed, set the **PICTURE SELECT** switch to "HQ". If it remains at "EDIT" when the tape is played back, picture quality is not satisfactory.

**WARNING:** Tapes can only be copied and used in accordance with applicable copyright laws. But, if the tape is covered by a copyright, it is illegal to copy it and/or charge an entrance fee to see it.

### Note:

- In general, picture quality deteriorates somewhat in the dubbed tape. It is best to use the SP mode.

# OTHERS

## Specifications

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<b>Power supply:</b>	120V AC, 60Hz
<b>Power consumption:</b>	27W
<b>External dimensions:</b>	14.9 × 3.15 × 11.6 inches (W.H.D.) (380 × 86 × 310mm (W.H.D))
<b>Weight:</b>	10.8 lb (4.9kg)
<b>Channels received:</b>	VHF: Channels 2-13, UHF: Channels 14-69, CATV: Channels 1-125
<b>Antenna input/output terminals:</b>	VHF/UHF: 75 ohm F Type Connector
<b>Signal system:</b>	Standard NTSC
<b>Recording/Playback system:</b>	Recording: <b>VHS</b> format (SP, SLP), Playback: <b>VHS</b> format (SP, LP, SLP)
<b>Cassette:</b>	Video cassette with <b>VHS</b> mark
<b>Tape speed:</b>	SLP: 1.11 cm/second, SP: 3.34 cm/second
<b>Video record/playback time:</b>	SLP: 480 minutes, SP: 160 minutes (When T-160 video cassette is used.)
<b>Fast forward/rewind time:</b>	Within 6 minutes (When T-120 video cassette is used.)
<b>Video input:</b>	1 Vp-p, 75 ohm, unbalanced negative sync, pin jack
<b>Video output:</b>	1 Vp-p, 75 ohm, Unbalanced negative sync, pin jack
<b>Audio input:</b>	Line input: - 8 dBs more than 47K ohm, pin jack
<b>Audio output:</b>	Line output: - 6 dBs less than 10K ohm, pin jack
<b>Audio frequency range:</b>	80 Hz-12 kHz
<b>Utilization conditions:</b>	Temperature: 41°F to 104°F, Humidity: less than 80% RH
<b>VHF output:</b>	Channel 3 or 4, 66dB $\mu$ V
<b>Time display:</b>	12 hours digital display
<b>Time precision:</b>	Synchronized with the AC power frequency
<b>Timer setting:</b>	1 year, 8 programs
<b>Remote control unit:</b>	36 keys (with Direct Channel Select)

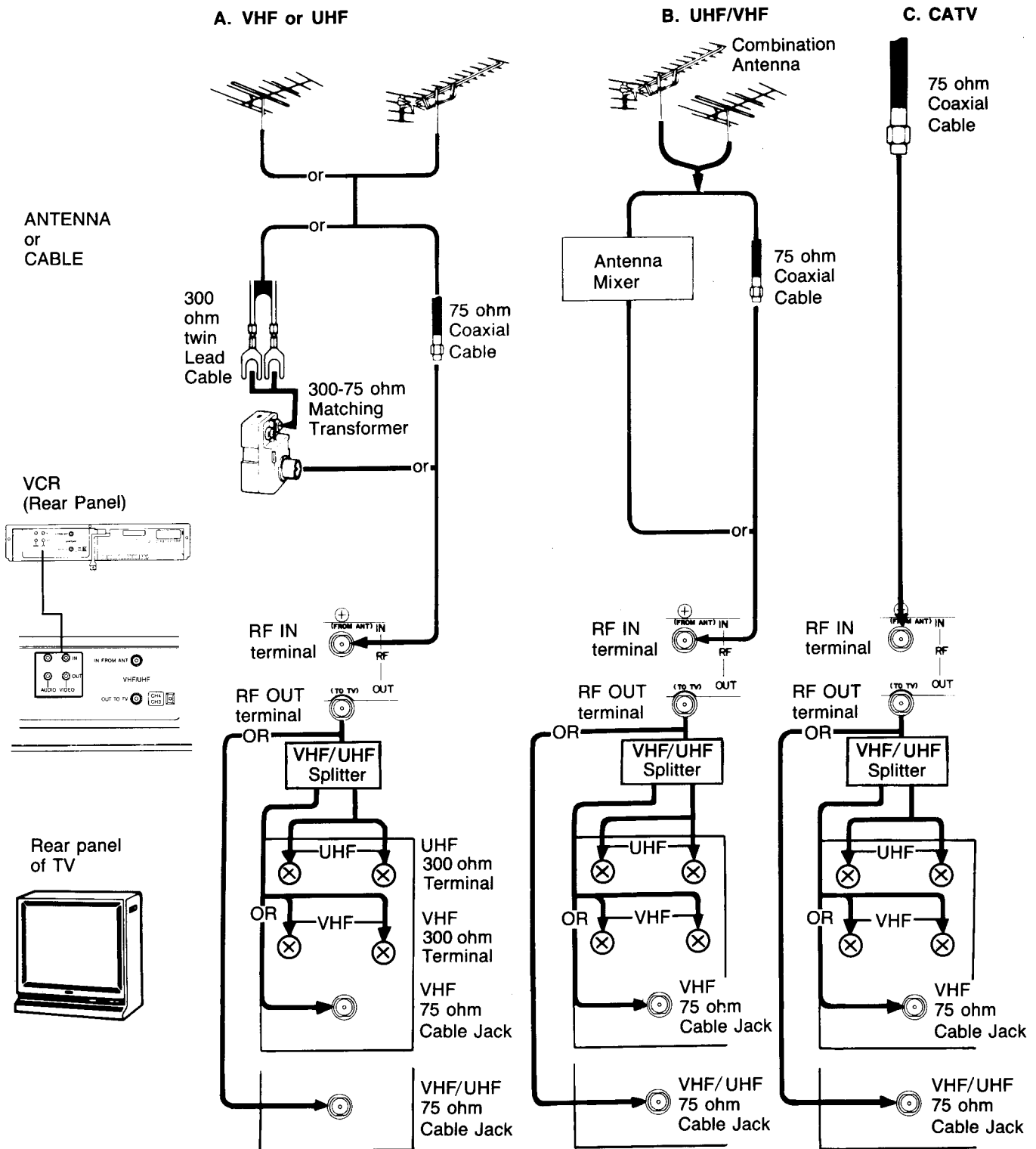
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Designs and specifications are subject to change without notice.

# QUICK REFERENCE

## Installation

Use this page as reference when connecting your VCR with your TV set and various types of antennas. For detailed information, see the chapters entitled INSTALLATION (see page 11)



## Before Calling Service Personnel

Check the following list of problems and remedies before calling service personnel. The problems may be one you can solve yourself.

	PROBLEM	REMEDY
Power Supply	<ul style="list-style-type: none"> <li>Power won't go on:</li> </ul>	<ul style="list-style-type: none"> <li>The power cord may not be plugged in. Plug it firmly into the outlet.</li> </ul>
	<ul style="list-style-type: none"> <li>Although the power is on, the VCR won't work.</li> </ul>	<ul style="list-style-type: none"> <li>There is no cassette in the VCR. Load a cassette.</li> </ul>
Clock/Timer	<ul style="list-style-type: none"> <li>The clock will not work.</li> <li>The timer will not work properly.</li> </ul>	<ul style="list-style-type: none"> <li>There has been a power failure. Reset the clock.</li> <li>The clock time is incorrect. Adjust the clock to the correct time.</li> </ul>
TV Reception	<ul style="list-style-type: none"> <li>Picture does not appear on the TV screen.</li> </ul>	<ul style="list-style-type: none"> <li>The TV channel must be set to the VCR output Channel 3 or 4 or set the TV/VCR select switch on the TV to VCR.</li> <li>The channel you want is not tuned correctly on the VCR. Adjust the tuning knob on your TV.</li> <li>Adjust antenna direction or use an optional antenna booster.</li> <li>The power cord must be plugged into the outlet firmly.</li> </ul>
Recording and Playback	<ul style="list-style-type: none"> <li>Picture does not appear on the TV screen during recording and playback.</li> </ul>	<ul style="list-style-type: none"> <li>Make sure the TV/VCR button is set to VCR and that the TV channel is set to 3 or 4.</li> </ul>
	<ul style="list-style-type: none"> <li>The VCR will not record.</li> </ul>	<ul style="list-style-type: none"> <li>The cassette's safety tab may be broken. Use a cassette with tab or cover the hole with cellophane tape.</li> </ul>
	<ul style="list-style-type: none"> <li>The picture for the VCR tape is poor.</li> </ul>	<ul style="list-style-type: none"> <li>Adjust the TV fine tuning knob.</li> <li>Adjust the tracking knob on the REMOCON.</li> <li>Clean the video heads of the VCR with a commercial cleaning cassette tape.</li> </ul>
	<ul style="list-style-type: none"> <li>The timer recording function will not work.</li> </ul>	<ul style="list-style-type: none"> <li>There is an error in programming. Reprogram the preset information.</li> <li>There must be a cassette in the VCR.</li> <li>If the cassette does not have its safety tab, you must use another cassette or cover the hole with cellophane tape.</li> <li>The timer indicator must be lit. Reprogram your recording information, making sure you press the power button.</li> <li>There has been a power failure. Reset the clock to the correct time if it is lighting "--:--" and reprogram the timer.</li> </ul>
Remote Control	<ul style="list-style-type: none"> <li>The remote control will not work properly.</li> </ul>	<ul style="list-style-type: none"> <li>Put new batteries in if the old ones are exhausted.</li> <li>Make sure the remote control is within a 30° angle of the receptor on the VCR.</li> <li>Use the remote control within 23 feet (7 m) from the VCR.</li> <li>Remove any obstacle between the VCR and the remote control.</li> </ul>
Miscellaneous	<ul style="list-style-type: none"> <li>The cassette is ejected immediately after it is loaded.</li> </ul>	<ul style="list-style-type: none"> <li>Remove the cassette and reload it carefully.</li> </ul>
	<ul style="list-style-type: none"> <li>The cassette will not go into the cassette compartment.</li> </ul>	<ul style="list-style-type: none"> <li>The cassette was loaded immediately after pressing EJECT. Reload the cassette, waiting a moment after ejecting another tape.</li> <li>There is already a tape in the VCR.</li> </ul>



## LIMITED WARRANTY TOSHIBA VIDEO CASSETTE RECORDER

Toshiba America Consumer Products, Inc. ("TACP") and Toshiba Hawaii Inc. ("THI") make the following limited warranties. These limited warranties extended 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 Ninety (90) Day Warranty

TACP and THI warrant this product against defects in materials or workmanship for a period of ninety (90) days after the date of original retail purchase. During this period, TACP and THI will repair a defective product or part, without charge to you. You must deliver the entire product to a TACP/THI Service Center. You pay for all transportation and insurance charges for the set to and from the Service Center.

### Limited One (1) Year Warranty

TACP and THI further warrant the parts in this product against defects in materials or workmanship for a period of one year after the date of original retail purchase. During this period, TACP and THI will replace a defective part without charge to you, except that if a defective part is replaced after ninety (90) days from the date of the original retail purchase you pay labor charges involved in the replacement. You must also deliver the entire product to one of the TACP/THI Service Centers. You pay for all transportation and insurance charges for the set to and from the Service Center.

### Owner's Manual and Registration Card

You should read the owner's manual thoroughly before operating this product. You should also insure that your name and address are on file as owners 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

### Step-By-Step Procedures—How To Obtain Warranty Service

#### IN THE CONTINENTAL UNITED STATES...

Should your unit require  
service or parts, CALL

enable TACP/THI to establish the date of purchase of the product, as well as 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. Completing and mailing in the enclosed registration card within ten days after the original retail purchase is one way of providing such other proof of purchase.
- (2) You must notify an Authorized TACP/THI Service Station within thirty (30) days after you discover a defective product or part.
- (3) All warranty servicing of this product must be made by an Authorized TACP/THI Service Station.
- (4) These warranties are effective only if the product is purchased and operated in the U.S.A.
- (5) Labor service charges for set installation, set up, adjustment of customer controls and installation of repair or antenna systems are not covered by this warranty. Reception problems caused by inadequate antenna systems are your responsibility.
- (6) 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 there of which have had the serial number removed, altered, defaced or rendered illegible.



### HAWAII

Toshiba Hawaii Inc.  
Service Department  
327 Kamakee Street  
Honolulu, HI 96814  
Phone Number:  
(808) 521-5377

### IN THE EVENT A PROBLEM SHOULD DEVELOP WITH YOUR PRODUCT, PLEASE PROCEED AS FOLLOWS:

- (1) Refer to the troubleshooting guide in your owner's manual. This check list may solve your problem.
- (2) Contact one of the TACP/THI Service Centers listed below for warranty service or call the TACP toll free number 1-800-631-3811 within thirty (30) days after you find a defective product or part.
- (3) Arrange for the delivery of the product to the Authorized TACP/THI Service Center. Products shipped to the Service Center must be insured and safely and securely packed, preferably in the original shipping carton, and a letter explaining the defect and also a copy of the bill of sale or other proof of purchase must be enclosed. All transportation and insurance charges must be prepaid by you. (See Packing and Shipping instructions on TOSHIBA SERVICE PROCEDURE).
- (4) If you have any question about service, please contact one of the following TACP/THI Service Centers:

#### EAST

82 Totowa Road  
Wayne, NJ 07470  
Phone Number:  
(201) 628-8000

#### SOUTHEAST

490 Armour Circle, N.E.  
Atlanta, GA 30324  
Phone Number:  
(404) 872-6955

#### MIDWEST

1010 Johnson Drive  
Buffalo Grove, IL  
60089  
Phone Number:  
(312) 541-9400

#### SOUTHWEST

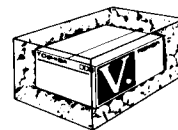
1421 champion Drive  
Suite 304  
Carrollton, TX 75006  
Phone Number:  
(214) 243-1367

#### WEST

19500 South  
Vermont Ave.  
Torrance, CA 90502  
Phone Number:  
(213) 770-3300

### IMPORTANT: PACKING AND SHIPPING INSTRUCTIONS

When you send the product to a service center, you must use the original carton box and packing material, then insert the original carton box containing the unit into another carton, using more packing material.



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