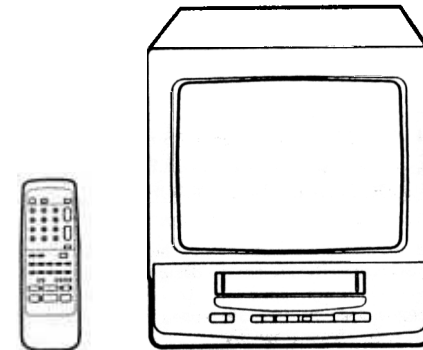


**AC/DC COMBINATION 13" COLOR TELEVISION
AND VIDEO CASSETTE RECORDER****MVT2138****ATTENTION**

For your protection in the event of theft or loss of this product, please fill in the information listed below which is for your own personal records.

Date of Purchase : _____
Serial No. : _____
Place of Purchase : _____

**TV/CATV MODE SELECTION
SELECTION DU MODE TV/CATV**

When shipped from the factory, the TV/CATV menu option is set to the "CATV" (Cable Television) mode.
If not using CATV, set this menu option to the "TV" position.



Before operating the unit, please read this manual thoroughly.

IMPORTANT SAFEGUARDS

1. READ INSTRUCTIONS

All the safety and operating instructions should be read before the unit is operated.

2. RETAIN INSTRUCTIONS

The safety and operating instructions should be retained for future reference.

3. HEED WARNINGS

All warnings on the unit and in the operating instructions should be adhered to.

4. FOLLOW INSTRUCTIONS

All operating and use instructions should be followed.

5. CLEANING

Unplug this unit from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners.

Use a damp cloth for cleaning.

6. ATTACHMENTS

Do not use attachments not recommended by the unit's manufacturer as they may cause hazards.

7. WATER AND MOISTURE

Do not use this unit near water. For example, near a bathtub, washbowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool.

8. ACCESSORIES

Do not place this unit on an unstable cart, stand, tripod, bracket, or table.

The unit may fall, causing serious injury, and serious damage to the unit.

Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer.

- 8A. 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.

PORTABLE CART WARNING
(symbol provided by RETAC)



S3126A

9. VENTILATION

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

10. POWER SOURCES

This unit should be operated only from the type of power source indicated on the rating plate. If you are not sure of the type of power supply to your home, consult your appliance dealer or local power company. For units intended to operate from battery power, or other sources, refer to the operating instructions.

11. GROUNDING OR POLARIZATION

This unit 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, if your unit is equipped with a 3-wire grounding-type plug, a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This too, is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet.

Do not defeat the safety purpose of the grounding-type plug.

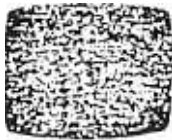
VIDEO HEAD CLEANING

VIDEO HEAD CLOGGING

The video heads are the means by which the TV/VCR reads the picture from the tape during playback. In the unlikely event that the heads become dirty enough to be clogged, no picture will be played back. This can easily be determined if, during playback of a known good tape, there is good sound, but no picture (picture is extremely snowy). If this is the case, have the TV/VCR checked by qualified service personnel.



Good Picture



Snowy Picture

VIDEO HEAD CLEANING

AUTO HEAD CLEANING system cleans the video heads automatically when a cassette is inserted or ejected to prevent dirt from accumulating on the heads. However, manual head cleaning is needed if the picture on playback is still unclear although the picture on program is normal. This failure signifies that the head is getting dirty and occurs when playing poor quality or damaged tapes. If the heads require cleaning, use a high quality head cleaning system or have them cleaned professionally.

NOTE: • DO NOT ATTEMPT TO CLEAN THE VIDEO HEADS OR SERVICE THE UNIT BY REMOVING THE TOP COVER.

- Video heads may eventually wear out and should be replaced when they fail to produce clear pictures.
- To help prevent video head clogging, use only good quality VHS tapes. Discard worn out tapes.

manufacturer or those that have the same characteristics as the original part.

Unauthorized substitutions may result in fire, electric shock or other hazards.

21. SAFETY CHECK

Upon completion of any service or repairs to this unit, ask the service technician to perform safety checks to determine that the unit is in proper operating condition.

22. WALL OR CEILING MOUNTING

The product should be mounted to a wall or ceiling only as recommended by the manufacturer.

23. HEAT

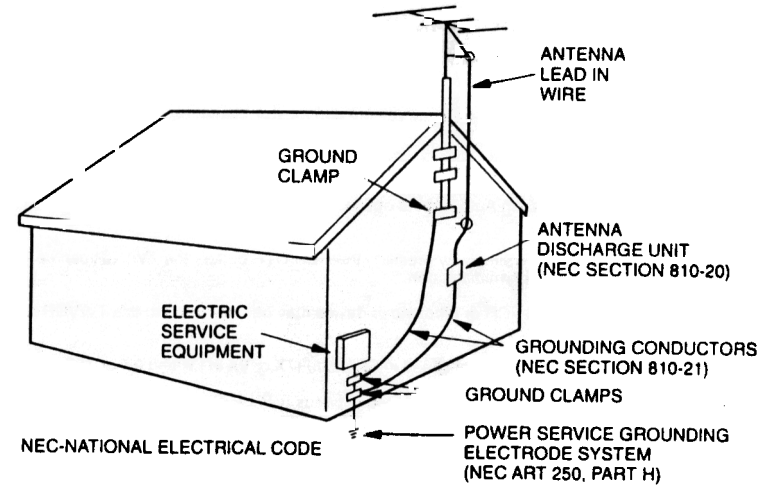
The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

24. NOTE TO CATV SYSTEM INSTALLER

This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

ENGLISH

EXAMPLE OF ANTENNA GROUNDING AS PER THE NATIONAL ELECTRICAL CODE



S2898A

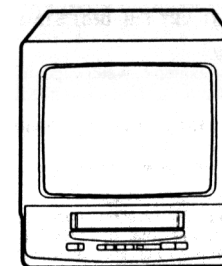
TROUBLE SHOOTING GUIDE

Check the following chart before requesting service.

SYMPTOMS	CAUSE	POSSIBLE SOLUTIONS	PAGE
POWER			
No power.	The AC power cord is not connected.	Connect the AC power cord to the AC outlet.	12
	The DC car cord is not plugged into the cigarette lighter socket.	Connect the DC car cord to the cigarette lighter socket.	12
	The DC car cord fuse is blown.	Replace fuse.	12
Although the power is on, the TV/VCR does not operate.	Cassette is not inserted.	Insert a video cassette.	27
	TIMER REC button is depressed.	Press the TIMER REC button.	36
	Moisture condenses on the video heads.	The PLAY indicator is flashing on and off. Wait two or three hours until it goes off.	7
TV BROADCAST RECEPTION			
Poor or no picture.	TV station experiencing problems.	Try another channel.	18
	Picture control is not adjusted.	Check picture control adjustments.	24,25
	Possible local interference.	Check for source of reception disturbance.	42
Poor or no color.	Antenna (CATV) connector is not connected or possible local interference.	Check CATV connection or VHF/UHF antenna, reposition or rotate antenna.	13,15
	TV station experiencing problems.	Try another channel.	18
	Picture control is not adjusted.	Check picture control adjustments.	24,25
Picture wobbles or drifts.	Possible local interference.	Check for source of reception disturbance.	42
	Antenna (CATV) connector is not connected or possible local interference.	Check CATV connection or VHF/UHF antenna, reposition or rotate antenna.	13,15
	TV station experiencing problems.	Try another channel.	18
No CATV reception.	Antenna (CATV) connector is not connected or possible local interference.	Check CATV connection or VHF/UHF antenna, reposition or rotate antenna.	13,15
	Cable TV channel is scrambled.	Try another channel.	18
	CATV connector is not connected.	Check all CATV connections.	15
No reception above channel 13.	TV/CATV Mode menu option is set to the TV mode.	Set the TV/CATV Menu option to the CATV mode.	21
	Cable TV service interrupted.	Contact your Cable TV company.	15
	TV/CATV Mode menu option is not set to the appropriate mode.	Make sure TV/CATV menu option is in the appropriate mode.	21
Poor or no sound.	UHF antenna is not connected.	Check UHF antenna.	13
	TV station experiencing problems.	Try another channel.	18
	Antenna (CATV) connector is not connected or possible local interference.	Check CATV connection or VHF/UHF antenna, reposition or rotate antenna.	13,15
	Possible local interference.	Check for source of reception disturbance.	42
	MUTE button is depressed.	Check that MUTE button has not been pressed.	18

TABLE OF CONTENTS

It is recommended that you carefully read the descriptions and operating procedures contained in this Owner's Manual prior to operating your new TV/VCR.



ENGLISH

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VIDEO GLOSSARY

This video glossary is provided to help you become familiar with video terms, equipment and accessories you may encounter or require in the future.

A/B SWITCH - A device that allows you to select from two video sources for output to your VCR or TV.



ANTENNA ADAPTER or ANTENNA MATCHING UNIT - See matching transformer.

BANDS - Groups of TV channels which fall within certain frequencies. All the channels the TV/VCR receives can be tuned on one of three bands:

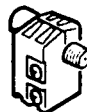
- V_L - VHF channels 2 thru 6 and cable A-5 thru A-3
- V_H - VHF channels 7 thru 13 and cable A-2 thru A-1, A thru I, J thru W and AA thru FFF
- U - UHF channels 14 thru 69 and cable GGG thru 125

CATV - Cable Television, a method of transmitting TV signals thru cable. This usually involves a monthly service charge.

COAXIAL CABLE (75 Ohm) - A special type of round wire used for antenna or cable systems or for connecting a VCR to a TV.



COMBINER (or COUPLER) - A device used to combine two or more incoming antenna wires or cables into a single output (not included).



CONVERTER/DESCRAMBLER BOX - A device supplied by cable companies for receiving or descrambling cable signals. Often used for TV sets that cannot receive cable channels, or when pay stations are desired by the customer (not included).

DIGITAL - Special circuitry using microchips to store images enables a VCR to perform viewing effects like strobe, and high quality still picture.

DIGITAL AUTO TRACKING - Automatically adjusts the playback tracking for the best possible picture.

DUBBING - A method of recording from one video cassette to another by connecting a VCR with another VCR, VCP or camcorder.

F-TYPE CONNECTOR JACK - A threaded input jack designed to accept coaxial cable (75 ohm) using either a "push-on" or "screw-on" F connector.

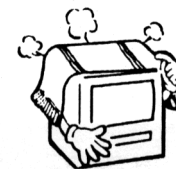
FULL LOADING TAPE TRANSPORT - Keeps the video cassette tape fully loaded in the VCR for rapid access between modes.

H.Q. (High Quality picture) - Special circuitry designed to improve VHS picture quality. Includes 'white clip expansion' and one or more additional special circuits.

Avoid extreme moisture and dust.



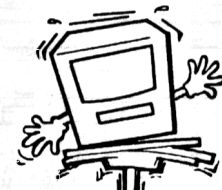
The ventilation holes prevent overheating. Do not block or cover these holes. Especially avoid covering the holes with soft materials such as cloth or paper.



Do not insert fingers or any other objects into the cassette loading slot. Do not spray cleaner or wax directly on the unit or use forced air to remove dust.



Avoid places subject to strong vibration. Use in a horizontal (flat) position only.



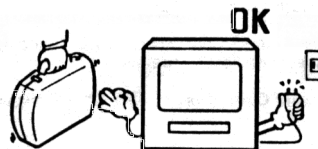
Keep the unit away from flower vases, sinks, etc. If liquids should be spilled into the unit, serious damage will result. If you spill any liquids into the unit, unplug the AC power cord immediately and consult qualified service personnel before attempting to use it again.



When you finish operating the unit, always unload the cassette and turn off the power.



When you leave your home for a long time, unplug the AC power cord.

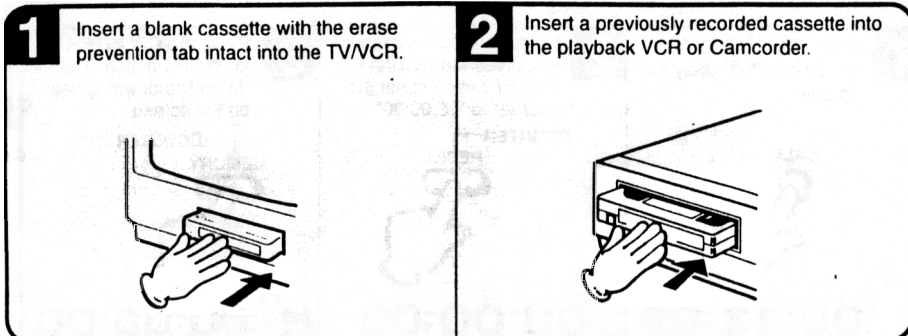


To protect the unit from a lightning storm, unplug the AC power cord from the wall outlet and disconnect the antenna.

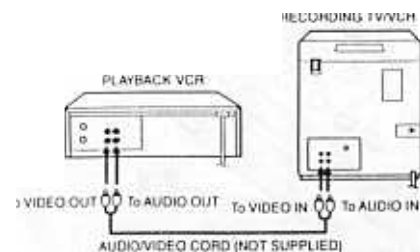


DUPLICATING A VIDEO TAPE

If you connect the TV/VCR to another VCR or CAMCORDER, you can duplicate a previously recorded tape. Make all connections before turning on the power.

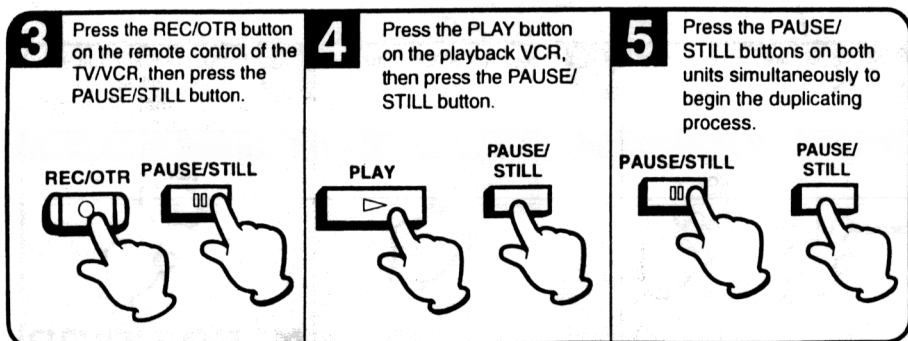
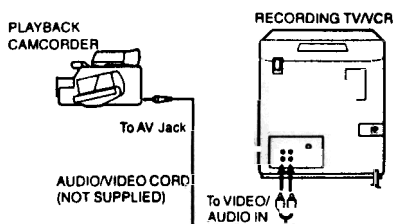


CONNECTION TO ANOTHER VCR



CONNECTION TO CAMCORDER

For duplicating a previously recorded tape from a camcorder, follow the camcorder manufacturer's instructions. A typical camcorder dubbing hookup is shown below.

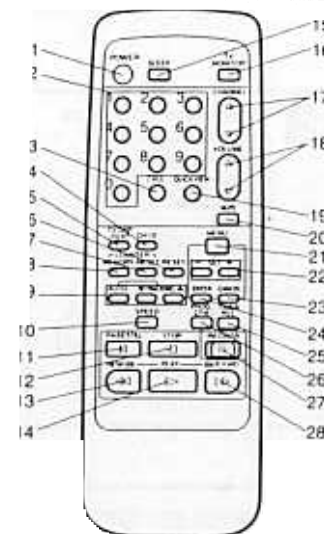


NOTES:

- It is recommended that the tape speed be set to the SP mode on the TV/VCR for best results.
- Unauthorized recording of copyrighted television programs, films, video cassettes and other materials may infringe the rights of copyright owners and be contrary to copyright laws.

REMOTE CONTROL

REMOTE CONTROL



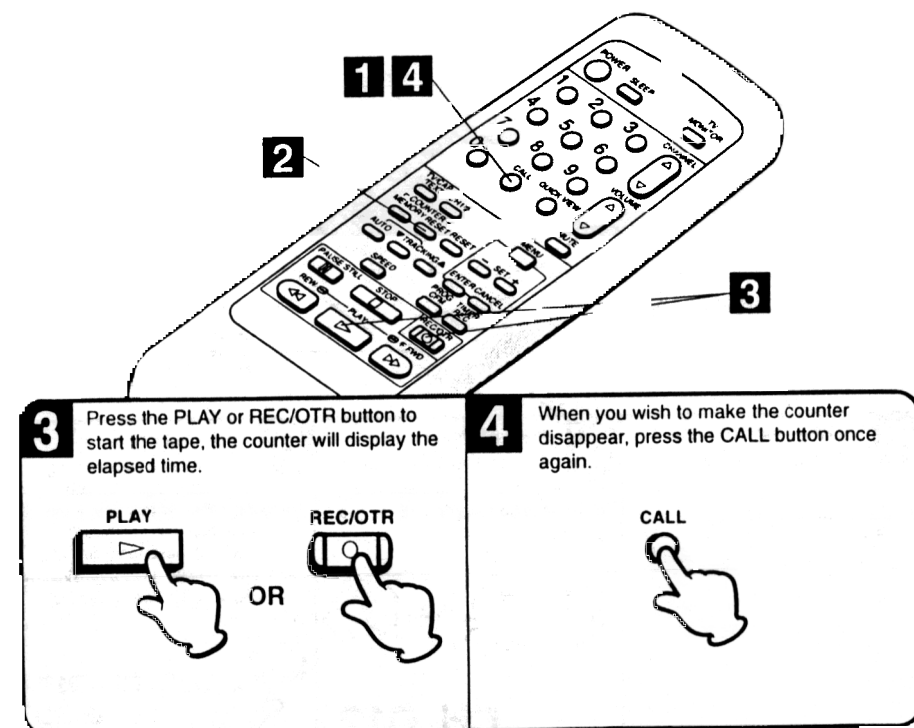
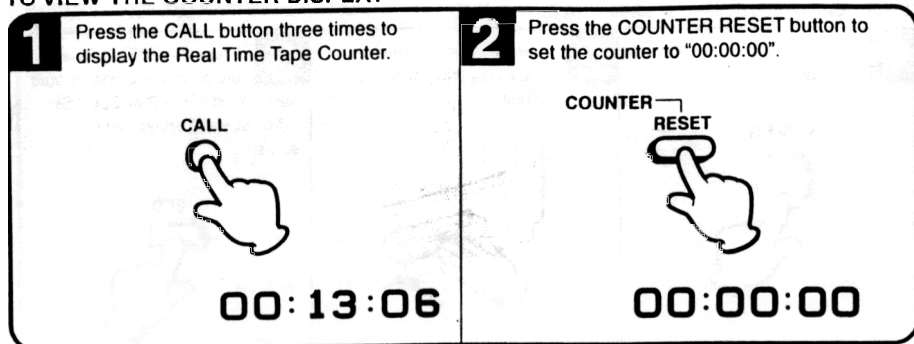
DESCRIPTION OF CONTROLS

- POWER Button** - Press to turn the TV/VCR on. Press again to turn the TV/VCR off.
- Direct Channel Selection Buttons (0-9)** - Allows direct access to any channel.
- CALL Button** - Displays the present time/day of the week, channel, counter, speed selection (and VCR mode if VCR is playing) on the TV screen.
- CH. 1/2 Button** - Switches between Channel 1 and Channel 2 in the closed caption mode.
- TV/CAP/TEXT Button** - Switches between Caption, Text and TV modes for Closed-Captioned programs.
- RESET Button** - Press to reset the On-Screen picture adjustments to their factory preset positions.
- COUNTER RESET Button** - Used to reset the counter to 00:00:00.
- COUNTER MEMORY Button** - Used to stop the tape when the counter reaches 00:00:00 (00 Hours, 00 Minutes, 00 Seconds).
- AUTO/Manual TRACKING ▲/▼ Buttons** - Allows automatic or manual adjustment of tracking to minimize picture noise during playback.
- Tape SPEED SP/LP/SLP Selector Button** - Sets the tape speed for recording.
- PAUSE/STILL Button** - During recording, this button temporarily stops the tape. During playback, it stops the tape and displays a still image on the TV screen.
- STOP Button** - Press once to stop the tape.
- REW (Rewind) Button** - In the Stop mode, this button rapidly winds the tape backwards. In the Play mode, this button activates reverse search.
- PLAY Button** - Press to play a prerecorded tape.
- SLEEP Button** - Sets the TV to turn off automatically after up to 120 minutes.
- TV MONITOR Button** - Used to temporarily view a TV channel selected on the VCR while in the playback mode.
- CHANNEL ▲/▼ Buttons** - Press the Up button to change to a higher numbered channel set into memory. Press the Down button to change to a lower numbered channel set into memory.
- VOLUME ▲/▼ Buttons** - Press the Up button to increase, or the Down button to decrease the volume level.
- QUICK VIEW Button** - Switches between the present channel and the last channel selected.
- MUTE Button** - Press to turn off the sound. Press again to turn the sound back on.
- MENU Button** - Press to display the On-Screen menu function.
- SET +/- Buttons** - Used to set the clock, timer recording, auto repeat, channel set, picture adjustment and language.
- CANCEL Button** - Used to clear the selected timer recording program.
- ENTER Button** - Use to enter information for timer recording and clock setting.
- TIMER REC Button** - Used to set the TV/VCR to start recording at a preset time.
- PROG. CFM Button** - Press to confirm the programmed timer recording.
- REC/OTR Button** - Press once to start normal recording. Additional presses activate One-Touch Timer Recording.
- F.FWD (Fast Forward) Button** - In the Stop mode, this button rapidly winds the tape forward. In the Play mode, this button activates forward search.

USING REAL TIME TAPE COUNTER

The On-Screen Real Time Tape Counter shows the tape running time in Hours, Minutes and Seconds. You can easily determine how long the tape has been running or how much time is left on the tape.

TO VIEW THE COUNTER DISPLAY



- NOTES:**
- If you rewind the tape from "00:00:00", a minus sign ("—") will be displayed in front of the time.
 - When you load a tape, the counter will reset to "00:00:00".
 - The counter does not function on nonrecorded (blank) sections of the tape. When you rewind, fast forward or play tapes through blank sections, the counter stops.

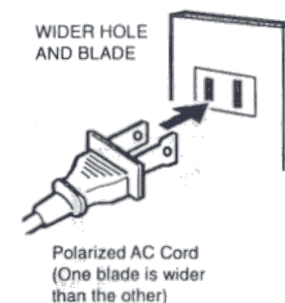
POWER SOURCES

TO USE AC POWER SOURCE

Use the AC polarized line cord provided for operation on AC. Insert the AC cord plug into a standard 120V 60Hz polarized AC outlet.

NOTES:

1. Never connect the AC line cord plug to anything other than the specified voltage (120V 60Hz). Use the attached power cord only.
2. If the polarized AC cord does not fit into a nonpolarized AC outlet, do not attempt to file or cut the blade. It is the user's responsibility to have an electrician replace the obsolete outlet.
3. If you cause a static discharge when touching the unit, and the unit fails to function, simply unplug the unit from the AC outlet, wait an hour, and plug it back in. The unit should return to normal operation.

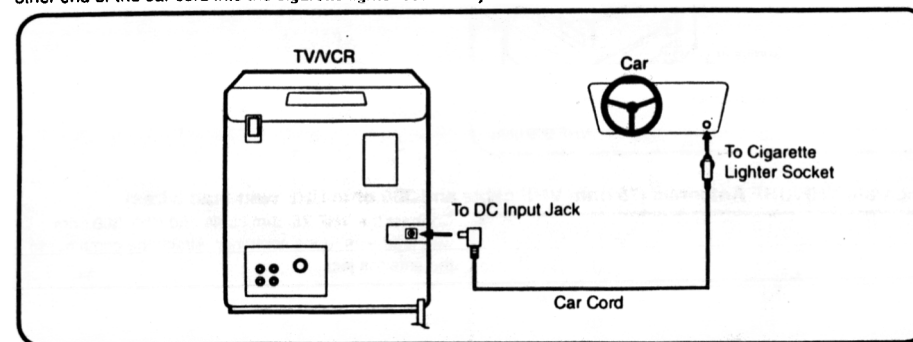


TO USE DC POWER

By using the DC car cord supplied with the TV/VCR, you can operate this TV/VCR from a cigarette lighter socket in any car that utilizes a negative ground system.

The fused 12V DC car cord has been designed to power the set from the external DC power (12 volt negative ground) through the TV/VCR DC input jack.

Connect the smaller plug on the end of the cord to the DC input jack on the rear of the TV/VCR, then insert the other end of the car cord into the cigarette lighter socket of your car.



WARNING: Never watch the TV/VCR while driving the vehicle.

- NOTES:**
- When the TV/VCR is not in use, always disconnect it from the car cigarette lighter socket to avoid a battery drain.
 - If the TV/VCR is to be directly connected to a 12V DC power source, for example, recreational vehicle (RV) applications, make sure the power cord is connected after the ignition switch to avoid battery drain.
 - Do not operate the TV/VCR if the car battery is weak. Peak current from the car alternator could blow the DC fuse.
 - The DC Power supply has priority over the AC Power supply.

OTHER FUNCTIONS FOR THE TIMER RECORDING

TO SET DAILY/WEEKLY TIMER

When setting the date in the step 5, press the SET – button repeatedly when the current day is displayed. The setting changes as follows; –

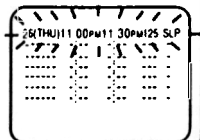
Example

The current day (Friday) → SU-SA (Sunday to Saturday)
 ↑
 One month later minus one day → MO-SA (Monday to Saturday)
 ↑
 WKL-WE (Weekly Wednesday) ← MO-FR (Monday to Friday)
 After setting, press ENTER.

TO CONFIRM THE SETTINGS

Press the PROG. CFM (PROGRAM CONFIRM) Button. The TV screen displays the timer program list. Press the PROG. CFM Button again to return to the normal screen.

PROG.
CFM



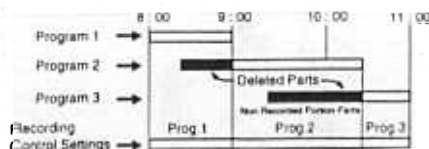
TO CANCEL THE PROGRAM

Press the SET + or – button to select the TIMER REC SET option in the MENU. Then press the SET + or – button to select the unnecessary program, and press the CANCEL button to cancel the program.

CANCEL



NOTE: Do not overlap programs as portions of the conflicting programs will be lost. The first recording time has priority over the next recording time as shown in the diagram.



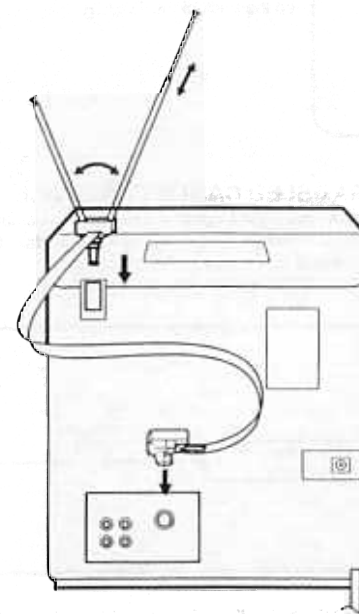
NOTES:

- The everyday/every week recording can be made continuously until the recording is canceled or the tape reaches the end.

- During timer recording, the automatic rewinding mechanism does not function.

INDOOR ANTENNA

A Twin-lead telescopic antenna is supplied with the unit, insert the antenna holder into the mounting hole on the back of the cabinet until it locks into place. Attach the antenna plug to the antenna jack. Adjust the length and angle of the antenna rods to receive the best possible picture.

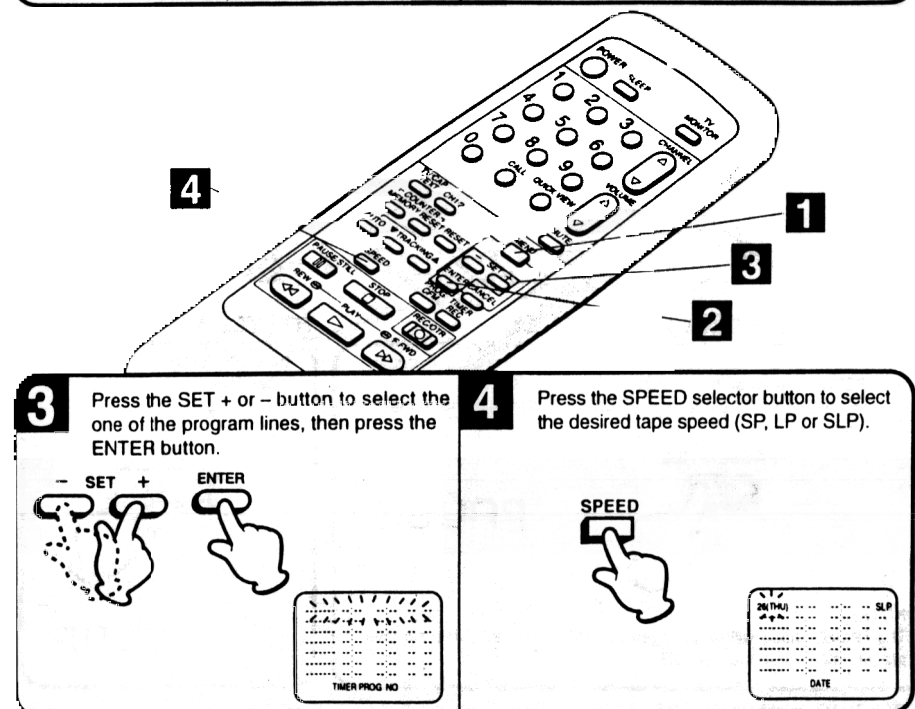
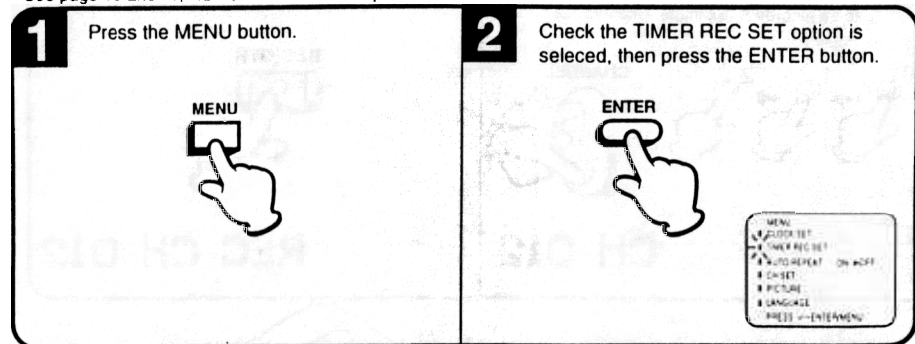


TIMER RECORDING

Timer recording can be programmed on-screen with the remote control. The built-in timer allows automatic unattended recording of up to 7 programs within 1 month.

EXAMPLE: Program a timer recording for 26th day, channel 125 (CATV), 11:00 - 11:30 PM on timer program number 1 (Tape speed : SLP)

- Load a video cassette with the erase prevention tab intact. The VCR will automatically turn on.
- Set the TV/CATV selection to the appropriate position (see page 21).
- See page 10 and 11, REMOTE CONTROL Operation.



NOTES:

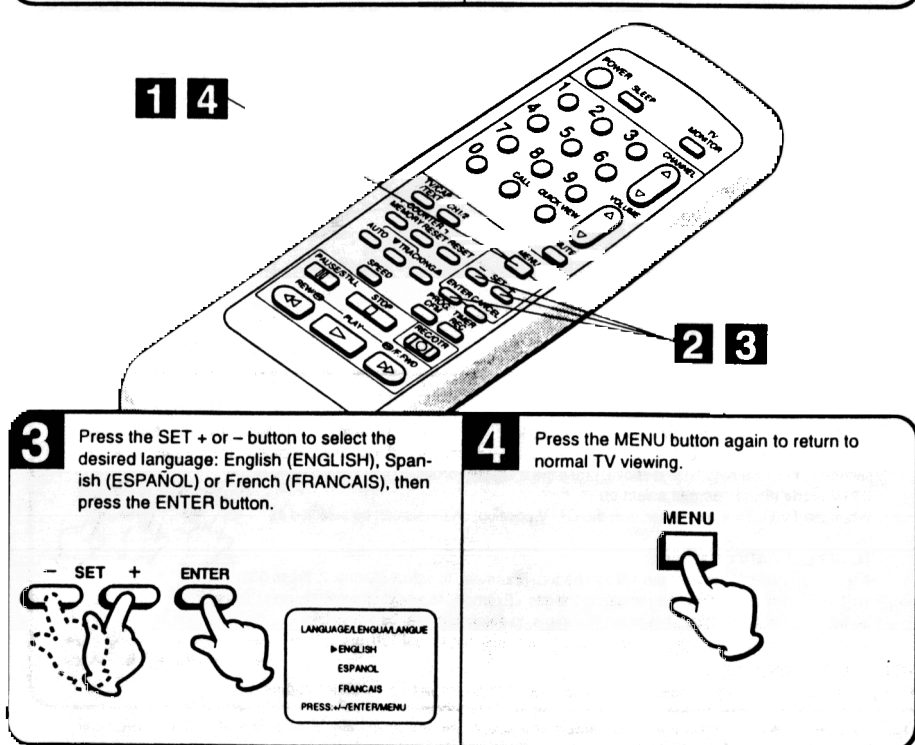
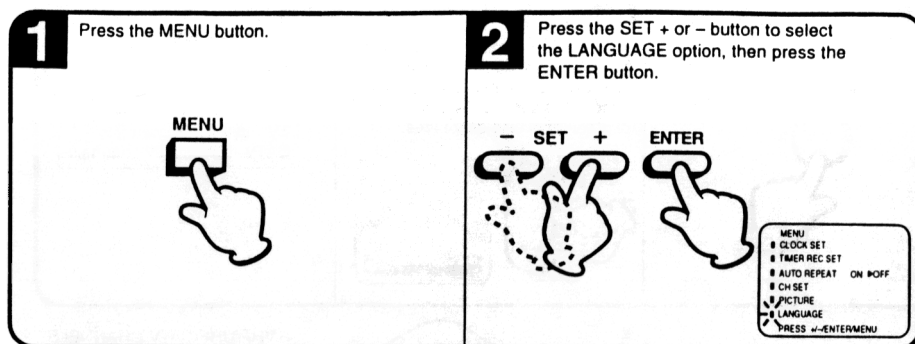
- If programming is performed without a tape in the TV/VCR, or with a tape without an erase prevention tab, the Timer Recording is not possible. If a tape without an erase prevention tab is in the TV/VCR, the tape will be ejected.

- To record from the external equipment, press the SET + or - button repeatedly until "AUX" appears when setting the channel in step 6.

SETTING THE LANGUAGE

This TV/VCR can display the channel number, on screen displays and picture adjustments on the screen in English, Spanish or French.

Language selection (step 3) will automatically appear on the screen when you press the MENU button initially. Select language to use the other menu options.




ENGLISH

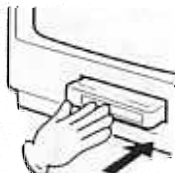
RECORDING A TV PROGRAM

RECORDING AND VIEWING THE SAME TV PROGRAM


1 To turn on the TV/VCR, press the POWER button.



2 Load a cassette tape with the erase prevention tab intact.



3 Press the SPEED Selector button to select the desired tape speed (SP, LP, or SLP). "SP", "LP" or "SLP" will appear on the screen.



4 Set the TV/CATV option to the appropriate position. (See page 21.)

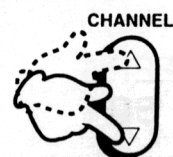
TV - VHF/UHF channels
CATV - CABLE TV channels

NOTES:

- If power is switched off during recording, the TV set goes off and the VCR continues to record. Press the STOP button to halt the recording and turn off the VCR.
- The TV/VCR channel cannot be changed during recording.
- If the erase prevention tab is removed, the tape will eject when the REC/OTR Button is pressed.

CHANNEL ▲ / ▼

Press and release the CHANNEL ▲ or ▼ button. The channel automatically stops at the next channel set into memory. Press and hold the button down to change channels more quickly. For proper operation, before selecting channels, they should be set into the memory. See pages 22 and 23 "To memorize channels".



CH 012

MUTE

Press this button to turn off the sound. The TV/ VCR's sound will be silenced and "MUTE" will briefly appear on the screen. The sound can be turned back on by pressing this button again or one of the VOLUME ▲ or ▼ buttons.



MUTE

CALL

When you press this button once, the present time and the day of the week will appear on the upper center part of the screen. When you press this button a second time, the channel number will appear on the upper right corner. Press a third time and, the tape speed selection and the real time tape counter will appear on the lower right corner. A fourth press of the CALL button will make the display disappear.

CALL



12:00AM SUN

1st Press

CH 012

2nd Press

1:23:45 SP

3rd Press

NOTE: When playing or recording a tape, the third press of the CALL Button will display the VCR operation (PLAY, PAUSE, FF, REW, REC or OTR) on the screen. A fourth press of the CALL Button will display the tape speed selection and real time tape counter on the screen.

SPECIAL PLAYBACK

TO VISUALLY SEARCH FOR DESIRED POINTS

When either the F.FWD or REW button is pressed in the PLAYBACK mode, the speed search picture will appear. When pressed twice, the search picture will increase speed. Speed search time depends upon the speed used (SP, LP or SLP) during recording. See chart below. To rewind or fast forward a tape, press the STOP button, and then press the REW or F.FWD button.

To visually search backward, press the REW button once or twice in the PLAYBACK mode.

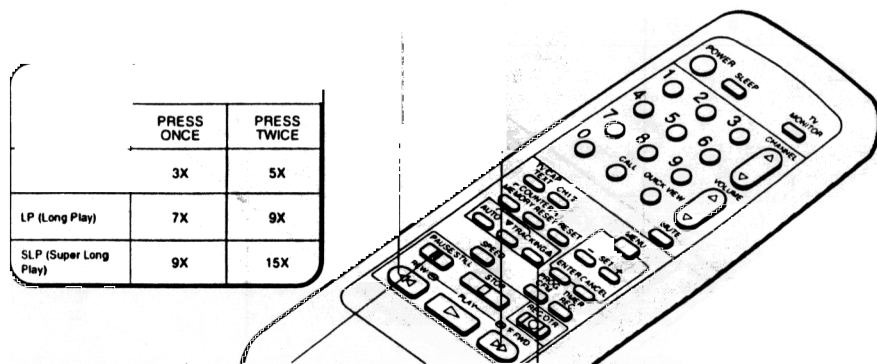


Press the PLAY button to resume normal viewing speed.

To visually search forward, press the F.FWD button once or twice in the PLAYBACK mode.



Press the PLAY button to resume normal viewing speed.



TO WATCH A STILL PICTURE DIGITAL TRACKING CONTROLS

Press the PAUSE/STILL button in the PLAYBACK mode.

PAUSE/STILL



Press PLAY button to resume normal playback.

When a tape is played, the Digital Auto Tracking system automatically adjusts the tracking to obtain the best possible picture. If noise bars appear during playback, adjust the tracking manually as follows:

- Press the TRACKING ▲ or ▼ button to obtain the best possible picture. "MANUAL TR." will appear for 4 seconds on the screen.
- To resume automatic tracking, press the AUTO Tracking button. "AUTO TR." will appear for 4 seconds on the screen.



MANUAL TR.



AUTO TR.

NOTES: • Best results during speed search and still playback can be obtained with video cassettes recorded in the "SLP" mode.

- The audio output is muted during Speed Search and Still.
- A few noise bars will appear on the TV screen during Speed Search and Still.
- To prevent damage to the tape, Still and Speed Search mode is automatically changed to the Playback mode after 5 minutes.

WHAT IS CLOSED CAPTIONING?

This television has the capability to decode and display Closed Captioned television programs. Closed Captioning will display text on the screen for hearing impaired viewers or it will translate and display text in another language.

CLOSED CAPTIONING WITH A VCR

Closed Captioned programs can be recorded and played back on a VCR with the Closed Captioned text intact. The Closed Captioned text will disappear during Cue (Fast Forward Search), Review (Rewind Search) and Pause Modes or if the VCR tracking is not adjusted properly.

TO VIEW CLOSED CAPTIONS

Press the TV/CAP/TEXT button on the remote control to switch between normal TV and the two Closed Caption Modes (Captions and Full Screen Text).

Captions: This Closed Caption Mode will display text on the screen in English or another language (depending on the setting of the Closed Captions CH. 1/2 button).

Generally, Closed Captions in English are transmitted on Captions Channel 1 and Closed Captions in other languages are transmitted on Captions Channel 2.

Text: The Text Closed Caption Mode will usually fill the screen with a programming schedule or other information. After selecting a Closed Caption Mode, it will stay in effect until it is changed, even if the channel is changed. If the Captions signal is lost due to a commercial or a break in the signal, the Captions will reappear when the signal is received again.

If the channels are changed, the Captions will be delayed approximately 10 seconds.

The Captions will appear in places on the screen where they will least interfere with the picture, usually on the bottom of the screen. News programs will usually show three-line Closed Captions which scroll onto the screen. Most other shows provide two or three lined Captions placed near the character who is speaking so the viewer can follow the dialogue.

Words in italics or underlined describe titles, words in foreign languages or words requiring emphasis. Words that are sung usually appear enclosed by musical notes. For television programs broadcasting with Closed Captions, look in your TV guide for the Closed Captions symbol (CC).

- When selecting Closed Captions, the captioning will be delayed approximately 10 seconds.
- If no caption signal is received, no captions will appear, but the television will remain in the Caption Mode.
- Misspellings or unusual characters may occasionally appear during Closed Captioning. This is normal with Closed Captioning, especially with live programs. This is because during live programs, captions are also entered live. These transmissions do not allow time for editing.
- When Captions are being displayed, on-screen displays, such as volume and mute may not be seen or may interfere with Closed Captions.
- Some cable systems and copy protection systems may interfere with the Closed Captioned signal.
- If using an indoor antenna or if TV reception is very poor, the Closed Caption Decoder may not appear or may appear with strange characters or misspelled words. In this case, adjust the antenna for better reception or use an outdoor antenna.

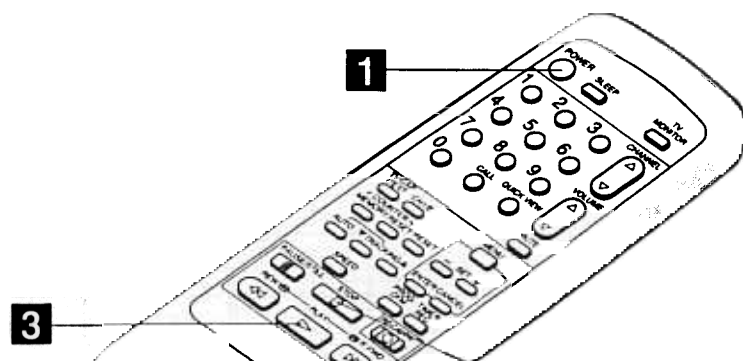
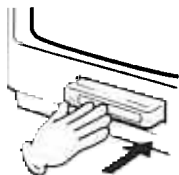
PLAYBACK

To play a prerecorded tape

TO START PLAYBACK

- 1 To turn on the TV/VCR, press the POWER button.
- 2 Load a prerecorded tape. (When loading a cassette tape without the erase prevention tab, playback will start automatically.)

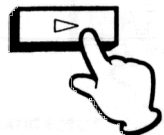
POWER



TO STOP PLAYBACK

- 3 Press the PLAY Button to begin playback. "PLAY" will appear on the screen.

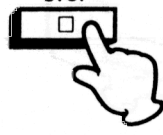
PLAY



PLAY

- 3 Press the STOP Button once. The tape will stop, but remain fully loaded and ready to play.

STOP



STOP

AUTOMATIC MEMORY TUNING

- 1 Press the MENU button.
- 2 Press the SET + or - button to select the CH SET mode, then press the ENTER button.

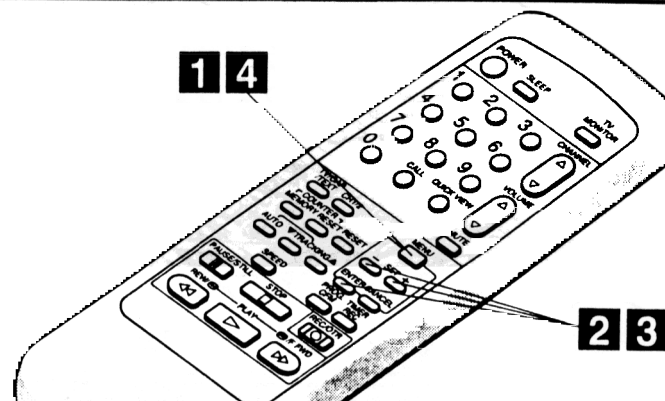
MENU



- SET + ENTER

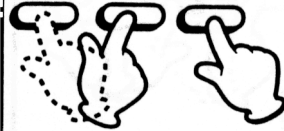


MENU
 0 CLOCK SET
 1 TIMER REC SET
 2 AUTO REPEAT ON/OFF
 3 CH SET
 4 PICTURE
 5 LANGUAGE
 PRESS +/-ENTER/MENU



- 3 Press the SET + or - button to select the AUTO CH MEMORY mode, then press the ENTER button. The TV will begin memorizing all the channels available in your area.

- SET + ENTER



0 TV > CATV
 1 AUTO CH MEMORY
 2 ADD/DELETE
 PRESS +/-ENTER/MENU

- 4 Press the MENU button twice to return to normal TV viewing.

MENU



LOADING AND UNLOADING A VIDEO CASSETTE

Use only video cassette tapes marked **VHS**.

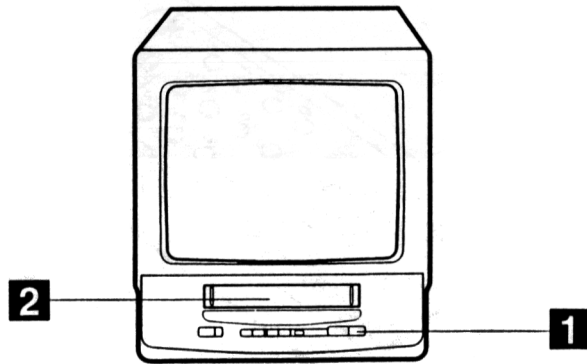
LOADING

Push the center of the tape until it is automatically retracted into the TV/VCR.

AUTOMATIC POWER ON AND PLAY

When loading a cassette tape without the erase prevention tab intact, the TV/VCR will turn on automatically and playback will start immediately.

Insert the cassette with its labeled side facing you.
An inverted video cassette cannot be inserted.



UNLOADING

1 To unload a video cassette, press the Stop/Eject button on the TV/VCR twice. The first press will stop the tape in any mode. The second press will eject the tape.

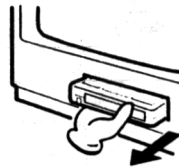
Stop/Eject



AUTOMATIC EJECT

If the TV/VCR automatically rewinds the tape to the beginning (AUTO REWIND FEATURE), the tape will be ejected automatically (see NOTE on page 34).

2 Pull the cassette out.



NOTES:

- Always eject the tape when not in use.
- The cassette tape can be ejected even if the POWER is "OFF".

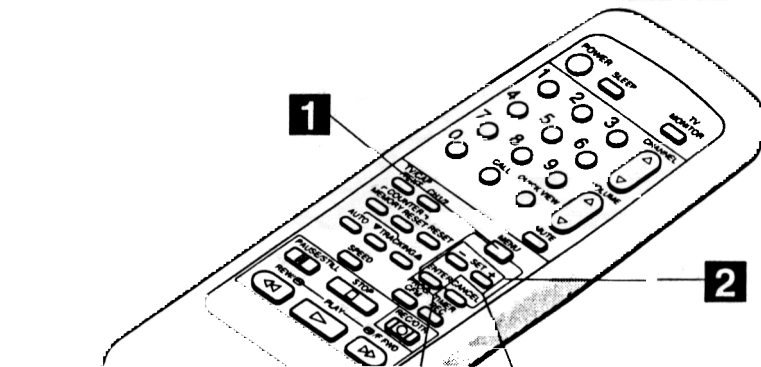
ON-SCREEN PICTURE ADJUSTMENTS

Picture controls are factory preset but you can adjust them individually as follows:

1 To display the picture adjustment screen, press the MENU button.

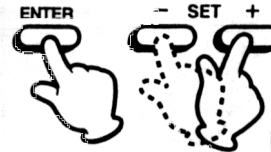
2 Press the SET + or - button to select the PICTURE option, then press the ENTER button.

MENU
 ■ CLOCK SET
 ■ TIMER REC SET
 ■ AUTO REPEAT ON/OFF
 ■ CH SET
 ■ PICTURE
 ■ LANGUAGE
 PRESS +/- ENTER MENU



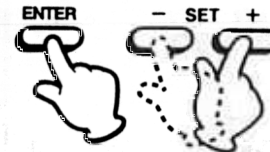
BRIGHTNESS

Press the ENTER button until "BRIGHTNESS" appears on the screen, then press the SET + or - button to adjust the brightness of the picture. When the SET + button is pressed, the darker portions of the picture become lighter.



CONTRAST

Press the ENTER button until "CONTRAST" appears on the screen, then press the SET + or - button to adjust the contrast of the picture. Pictures look sharpest in the daytime (bright light) by increasing the contrast. At night (dim light), the sharpest picture is obtained by reducing the contrast.



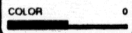
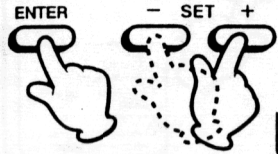
NOTE: The CONTRAST default setting is set to maximum at the factory.

ON-SCREEN PICTURE ADJUSTMENTS

(CONTINUED)

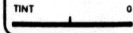
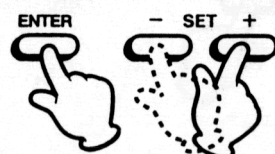
COLOR

Press the ENTER button until "COLOR" appears on the screen, then press the SET SET + or - button to adjust the color intensity of the picture. The control should be set to where colors appear normal in intensity and brilliance.



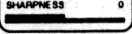
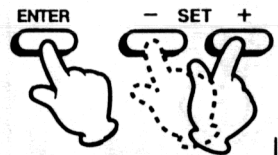
TINT

Press the ENTER button until "TINT" appears on the screen, then press the SET SET + or - button to adjust the tint of the picture. This determines how accurately the colors are reproduced by the TV. Adjusting the tint for natural facial tone is the best method of obtaining accurate color reproduction of the entire picture.



SHARPNESS

Press the ENTER button until "SHARPNESS" appears on the screen, then press the SET + or - button to adjust the sharpness of the picture.



RESET

Pressing the RESET button while making picture adjustments will return all adjustments to the factory preset levels.



NOTE: The On-screen display will disappear one minute after finishing an adjustment or by pressing the MENU button two times. The settings can only be adjusted when they are displayed on the TV screen.

TO SET THE ON-SCREEN CLOCK DISPLAY

Besides displaying the channel number and function symbols on the screen, the TV/VCR displays the present time and the date. Using the remote control, set the present time as follows.

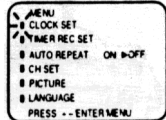
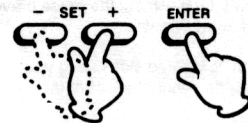
EXAMPLE: Setting the clock to 8:30 AM, October 23 (SAT), 1999.

Press the MENU button.



2

Press the SET + or - button to select the CLOCK SET option, then press the ENTER button.

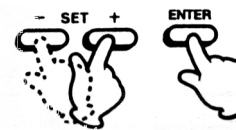


1

2 3 4

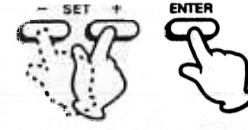
3

Press the SET + or - button to set the month, then press the ENTER button.

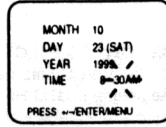


4

Follow step 3 until the clock setting is complete.




After setting the clock, date and time starts functioning automatically.



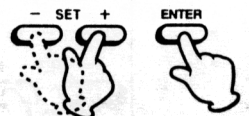
NOTE: After a power failure or disconnection of the power plug, the time display will be lost. In this case, set the present time again.

TO ADD/DELETE CHANNELS

1 Press the MENU button.

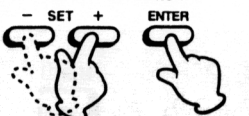


2 Press the SET + or - button to select the CH SET mode, then press the ENTER button.



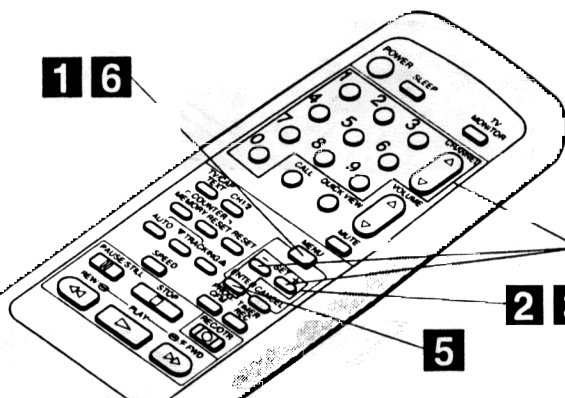
MENU
 ■ CLOCK SET
 ■ TIMER REC SET
 ■ AUTO REPEAT ON/OFF
 ■ CH SET
 ■ PICTURE
 ■ LANGUAGE
 PRESS ∇ /ENTER/MENU

3 Press the SET + or - button to select the ADD/DELETE mode, then press the ENTER button.




■ TV > CATV
 ■ AUTO CH MEMORY
 ■ ADD/DELETE
 PRESS ∇ /ENTER/MENU


1 6



4 Select the desired channel to be memorized or deleted using the Direct Channel Selection buttons (10 keys, 0-9), or CHANNEL \blacktriangle or \blacktriangledown button, or SET + or - button.




5 Press the ENTER button to select the ADD or DELETE. If you select an unmemorized channel, the Channel indication will be red. If you select the ADD mode, the Channel indication changes from red to green and the channel will be memorized. If you select a memorized channel, the Channel indication will be green. If you select the DELETE mode, the Channel indication changes from green to red and the channel will be deleted from the memory.



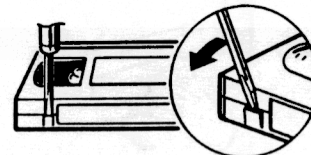
ADD
 CH 123
 PRESS ∇ /ENTER/MENU

6 Press the MENU button three times to return to normal TV viewing.



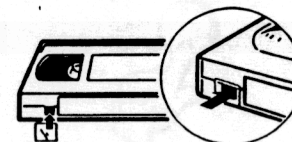
TO PREVENT ACCIDENTAL ERASURE

After recording, break off the erase prevention tab if you do not wish to record over the tape.



TO RECORD AGAIN

Cover the hole with vinyl tape. Be careful the tape does not extend past the edges of the video cassette housing.



TAPE SPEED AND MAXIMUM PLAYBACK/RECORDING TIME


TAPE SPEED	VIDEO CASSETTE TAPE				
	T-160	T-120	T-90	T-60	T-30
SP (Standard Play)	2-2/3 hours	2 hours	1-1/2 hours	1 hour	30 minutes
LP (Long Play)	5-1/3 hours	4 hours	3 hours	2 hours	1 hour
SLP (Super Long Play)	8 hours	6 hours	4-1/2 hours	3 hours	1-1/2 hours

TO MEMORIZE CHANNELS

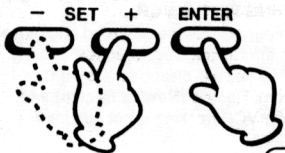
This TV/VCR is equipped with a channel memory feature which allows channels to skip up or down to the next channel set into memory, skipping over unwanted channels. Before selecting channels, they must be programmed into the TV/VCR's memory. In addition to normal VHF and UHF channels, this TV/VCR can receive up to 113 Cable TV channels. To use this TV/VCR with an antenna, set the TV/CATV menu option to the TV mode. When shipped from the factory, this menu option is in the CATV mode.

TV/CATV SELECTION

1 Press the MENU button.



2 Press the SET + or - button to select the CH SET mode, then press the ENTER button.



MENU

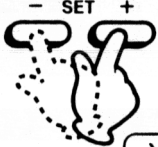
- CLOCK SET
- TIMER REC SET
- AUTO REPEAT ON/OFF
- ON-SET
- PICTURE
- LANGUAGE
- PRESS √/ENTER/MENU

CATV CHART

The chart below is typical of many cable system channel allocations.

Number on this TV/VCR:																14	15	16	17	18	19	20	21	22
Corresponding CATV channel:																A	B	C	D	E	F	G	H	I
23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40							
J	K	L	M	N	O	P	Q	R	S	T	U	V	W	AA	BB	CC	DD							
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58							
EE	FF	GG	HH	II	JJ	KK	LL	MM	NN	OO	PP	QQ	RR	SS	TT	UU	VV							
59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76							
WW	AA	BBB	CCC	DDD	EEE	FFF	GGG	HHH	III	JJJ	KKK	LLL	MMM	NNN	OOO	PPP	QQQ							
77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94							
RRR	SSS	TTT	UUU	VVV	WWW	XXX	YYY	ZZZ	86	87	88	89	90	91	92	93	94							
95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112							
A-5	A-4	A-3	A-2	A-1	100	101	102	103	104	105	106	107	108	109	110	111	112							
113	114	115	116	117	118	119	120	121	122	123	124	125	01											
113	114	115	116	117	118	119	120	121	122	123	124	125	5A											

3 Press the SET + or - button to select the TV/CATV mode.




TV - CATV

- AUTO CH MEMORY
- ADD/DELETE


PRESS √/ENTER/MENU

4 Press the ENTER button to select the TV or CATV mode. The arrow indicates the selected mode.



TV - VHF/UHF channels
CATV - Cable TV channels

5 Press the MENU button twice to return to the normal TV viewing.



TO REWIND OR FORWARD THE TAPE RAPIDLY

Press the REW (Rewind) button in the Stop mode. "REW" will appear on the screen.



REW

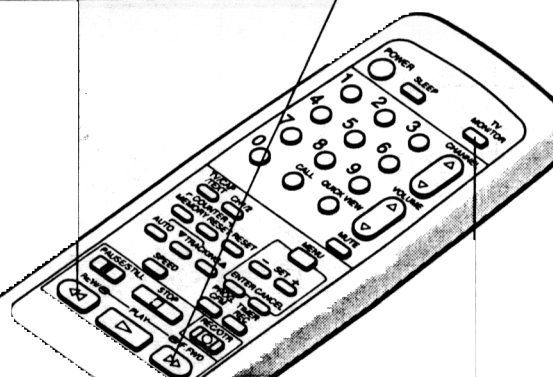
Press the F.FWD (Fast Forward) button in the Stop mode. "FF" will appear on the screen.



FF

FORWARD/REVERSE PICTURE SEARCH

If you want to see the tape during REW (FWD) mode, press the REW (F.FWD) button again. The backward (forward) visual search picture will be seen on the screen. Press again to return to the REW (FWD) mode.



TO MONITOR A TV PROGRAM

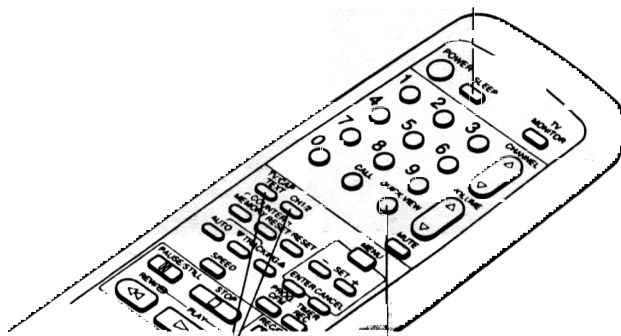
Press the TV MONITOR button while in the playback mode. The video tape will continue to play while the picture switches to the TV channel selected on the TV/VCR. Press the button to return to the playback picture.



SLEEP

To set the TV/VCR to turn off after a preset amount of time, press the SLEEP button on the remote control. The clock will count down 10 minutes for each press of the SLEEP button (120, 110, ... 10, 0). After the sleep time is programmed, the display will appear briefly every ten minutes to remind you that the sleep timer is operating. To confirm the sleep timer setting, press the SLEEP button and the remaining time will be momentarily displayed. To cancel the sleep timer, press the SLEEP button repeatedly until the display turns to 0.

SLEEP

SLEEP
60

TV/CAPTION/TEXT

Press this button to switch between normal TV and the two closed caption modes (captions and full screen text). Closed captioning will display text on the screen for hearing impaired viewers. Press the CH. 1/2 button to select the desired channel in the caption mode. For more information on Closed Captioned Programs, see the following page.

TV/CAP
/TEXT

CH. 1/2



QUICK VIEW

This button allows you to go back to the last channel selected by pressing the QUICK VIEW button. Press this button again to return to the last channel you were watching.

QUICK VIEW



CH 012

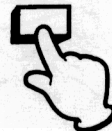
- NOTES:**
- If the station being viewed stops broadcasting, the TV will shut off after 15 minutes.
 - If using an indoor antenna or if TV reception is very poor, the Closed Caption Decoder text may not appear. In this case, adjust the antenna for better reception or use an outdoor antenna.
 - When activating the Closed Captioned Decoder, there will be a short delay before the Closed Captioned text appears on the screen.
 - Closed Captioned TV programs can be recorded and played back on a VCR with the Closed Captioned text intact. The Closed Captioning text will disappear during Cue, Rewind and Pause modes or if the VCR tracking is not adjusted properly.
 - Closed Captioned text is only displayed in locations where it is available.

TO WATCH A TAPE REPEATEDLY

1

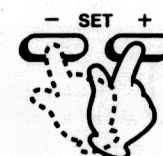
Press the MENU button.

MENU

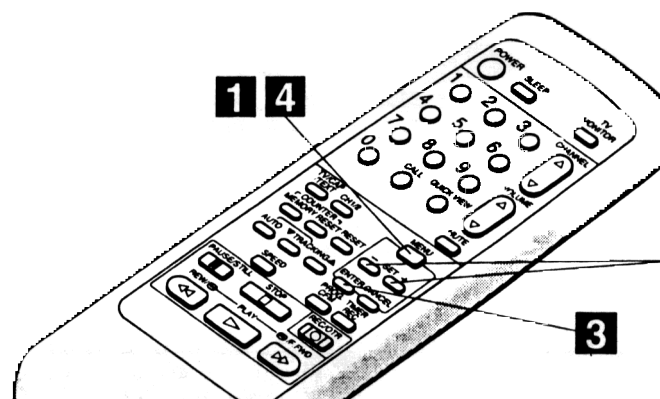


2

Press the SET + or - button to select the AUTO REPEAT option.



MENU
 # CLOCK SET
 # TIMER REC SET
 # AUTO REPEAT ON OFF
 # CH SET
 # PICTURE
 # LANGUAGE
 PRESS ←ENTERMENU



3

Press the ENTER button to select the ON position.

ENTER



MENU
 # CLOCK SET
 # TIMER REC SET
 # AUTO REPEAT ON OFF
 # CH SET
 # PICTURE
 # LANGUAGE
 PRESS ←ENTERMENU

4

Press the MENU button. If you press the PLAY button, the tape will play over and over until the repeat mode is cancelled.


MENU



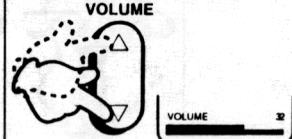
NOTE: To cancel repeat mode, follow above steps 1 and 2, then press the ENTER button to select the OFF position. Press the MENU button to return to the TV.

TV OPERATION

1 To turn on the TV/VCR, press the **POWER** button.

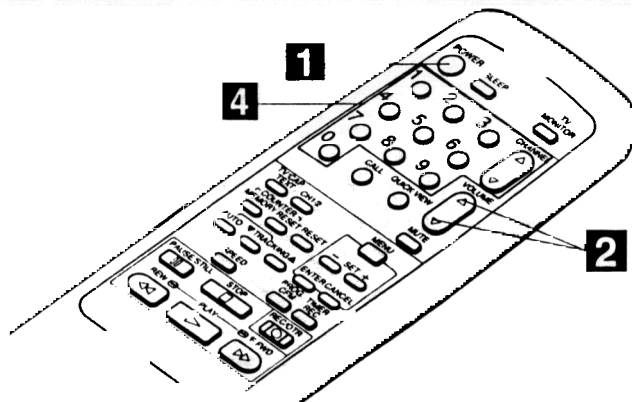


2 Adjust the volume level by pressing the **VOLUME ▲** or **▼** button. The volume level will be indicated on the screen by green bars. As the volume level increases, so do the number of bars. If the volume decreases, the number of green bars also decreases.



3 Set the TV/CATV menu option to the appropriate position. (See page 21)

TV - VHF/UHF channels
 CATV - CABLE TV channels



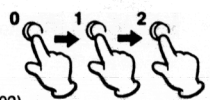
VHF/UHF/CATV CHANNELS

TV	CATV
VHF 2-13	VHF 2-13
UHF 14-69	STD/HRC/IRC 14-36 (A) (W) 37-59 (AA) (WW) 60-85 (AAA) (ZZZ) 86-94 (86) (94) 95-99 (A-5) (A-1) 100-125 (100) (125) 01 (5A)

4 Press the Direct Channel selection buttons to select the channel.

TV mode direct channel selection -
When the TV/CATV menu option is in the TV position, all channels can be instantly selected by using two buttons. (For example, to select channel 2, press "0", then "2". If you press only "2", channel selection will be delayed for a few seconds). For channels 10 and above, press the 2 digits in order.

CATV mode direct channel selection -
When the TV/CATV menu option is in the CATV position, channels can be selected as follows:
TO SELECT CATV CHANNELS:
1-9 Press "0" twice, then 1-9 as needed. (Example, to select channel 2, press 002).
10-19 Press "0", then the remaining 2 digits. (Example, to select channel 12, press 012).
20-99 Press the 2 digits in order. (Example, to select channel 36, press 36).
100-125 Press the 3 digits in order. (Example, to select channel 120, press 120).

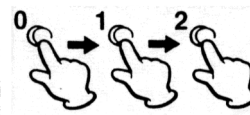


CH 012

NOTE FOR CHANNELS 1-19:
If only 1 or 2 buttons are pressed, the corresponding channel will be selected in 4 seconds.


NOTE: If a channel with no broadcast is selected, the sound will automatically be muted and a blue screen will appear. The VOLUME and MUTE buttons will not operate.

5 Press the Direct Channel Selection buttons or **CHANNEL ▲** or **▼** button to select the channel to be recorded. (Example: Channel 12)

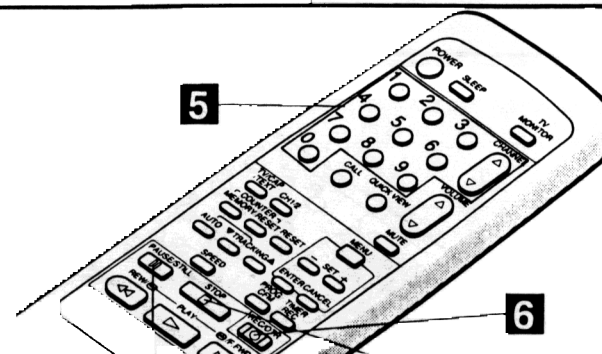


CH 012

6 Press the **REC/OTR** button.



REC CH 012



TO STOP RECORDING TEMPORARILY

Press the **PAUSE/STILL** button to avoid recording unwanted material. "PAUSE" will appear on the screen. Press the **PAUSE/STILL** button or **REC/OTR** button to continue the recording.

PAUSE/STILL



PAUSE

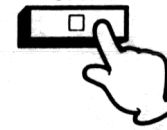
NOTE:

The PAUSE mode will be changed to STOP mode after five minutes to prevent damage to the TV/VCR.

TO STOP RECORDING

Press the **STOP** button to stop recording.

STOP



STOP

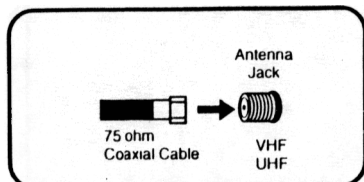
NOTE: AUTO REWIND FEATURE

This TV/VCR will automatically rewind the video cassette when the tape has ended (except during OTR and Timer Record). It will also eject the video cassette.

CABLE TV CONNECTIONS

This TV/VCR has an extended tuning range and can tune most cable channels without using a Cable TV converter box. Some cable companies offer "premium pay channels" in which the signal is scrambled. Descrambling these signals for normal viewing requires the use of a descrambler device which is generally provided by the cable company.

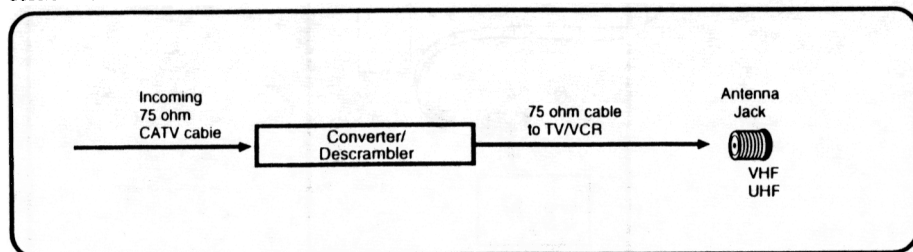
FOR SUBSCRIBERS TO BASIC CABLE TV SERVICE



For basic cable service not requiring a converter/descrambler box, connect the CATV 75 ohm coaxial cable directly to the antenna jack on the back of the TV/VCR.

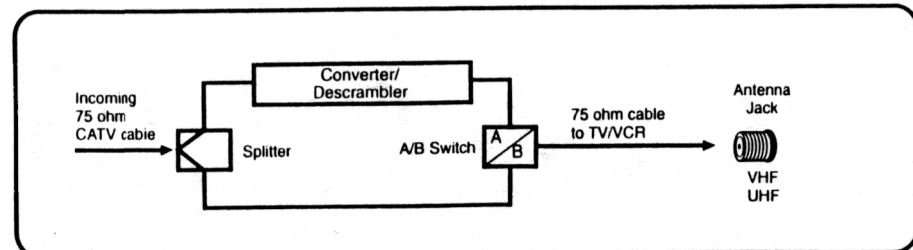
FOR SUBSCRIBERS TO SCRAMBLED CABLE TV SERVICE

If you subscribe to a cable TV service which requires the use of a converter/descrambler box, connect the incoming 75 ohm coaxial cable to the converter/descrambler box. Using another 75 ohm coaxial cable, connect the output jack of the converter/descrambler box to the antenna jack on the TV/VCR. Follow the connections shown below. Set the TV/VCR to the output channel of the converter/descrambler box (usually channel 3 or 4) and use the converter/descrambler box to select channels.



FOR SUBSCRIBERS TO UNSCRAMBLED BASIC CABLE TV SERVICE WITH SCRAMBLED PREMIUM CHANNELS

If you subscribe to a cable TV service in which basic channels are unscrambled and premium channels require the use of a converter/descrambler box, you may wish to use a signal splitter and an A/B switch box (available from the Cable company or an electronics supply store). Follow the connections shown below. With the switch in the "B" position, you can directly tune any nonscrambled channels on your TV/VCR. With the switch in the "A" position, tune your TV/VCR to the output of the converter/descrambler box (usually channel 3 or 4) and use the converter/descrambler box to tune scrambled channels.



5 Press the SET + or - button to select the date, then press the ENTER button.

6 Set the start time (hours and minutes), the end time (hours and minutes) and the channel in the same way as in the step 5.

7 To set the timer for another program, press the SET + or - button until the number of the second program blinks, then press the ENTER button. Repeat steps 4 to 6 to set the second program.

8 Press the TIMER REC button. The Timer is programmed, when the programmed time is reached, the recording is automatically started.

To cancel timer recording, press the button again and Timer rec indicator will go out.

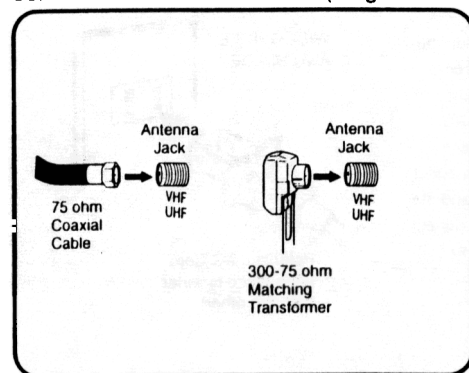
NOTES:

- The VCR of the TV/VCR cannot be used while the Timer rec indicator is lit.
- After a power failure or disconnection of the power plug, all programmed recording settings and time display will be lost upon resumption of power. In this case, reset the clock (see page 26) and reprogram any timer recordings.

ANTENNA CONNECTIONS

If you are using an indoor or outdoor antenna (outdoor antenna not included) follow the instructions below that correspond to your antenna system. If you are using a cable TV service (CATV), see page 15 for Cable TV connections.

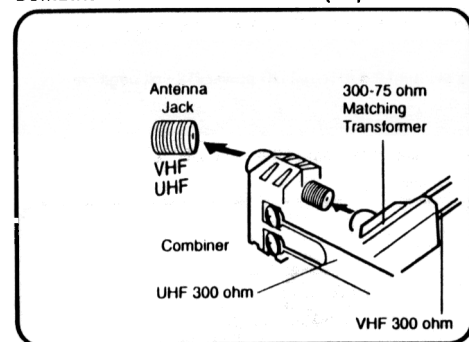
Combination VHF/UHF Antenna (Single 75 ohm cable or 300 ohm twin-lead wire)



Connect the 75 ohm cable from the combination VHF/UHF antenna to the antenna jack.

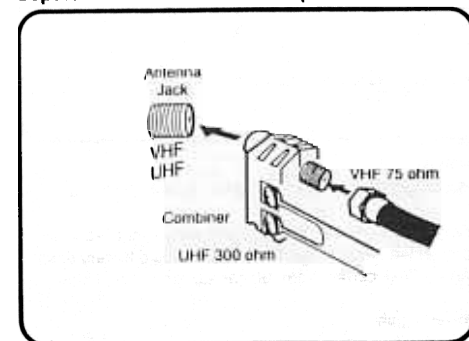
If your combination VHF/UHF antenna has a 300 ohm twin-lead wire, the use of the 300-75 ohm matching transformer may be necessary.

Combination VHF/UHF Antenna (Separate VHF and UHF 300 ohm twin-lead wires)



Connect the UHF 300 ohm twin-lead wire to the combiner (not supplied). Connect the VHF 300 ohm twin-lead wire to the 300-75 ohm matching transformer. Attach the transformer to the combiner, then attach the combiner to the antenna jack.

Separate VHF/UHF Antennas (75 ohm VHF cable and 300 ohm UHF twin-lead wires)

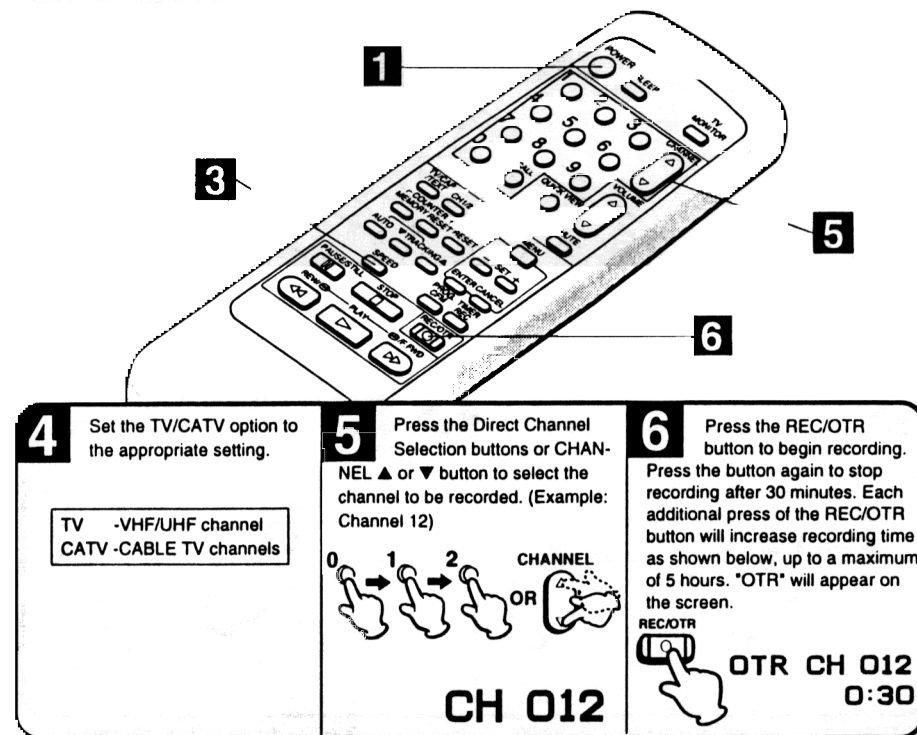
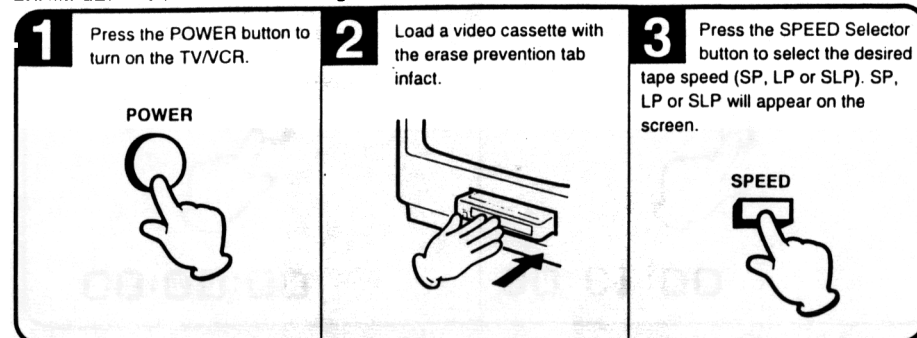


Connect the VHF 75 ohm cable and UHF 300 ohm twin-lead wire to the combiner. Attach the combiner to the antenna jack.

ONE-TOUCH TIMER RECORDING (OTR)

The One-touch Timer Recording feature provides a simple and convenient way to make a timed recording.

EXAMPLE: One-touch timer recording for 30 minutes.



NOTES: • Press the REC/OTR Button to increase the time needed for recording. (See the chart below.)

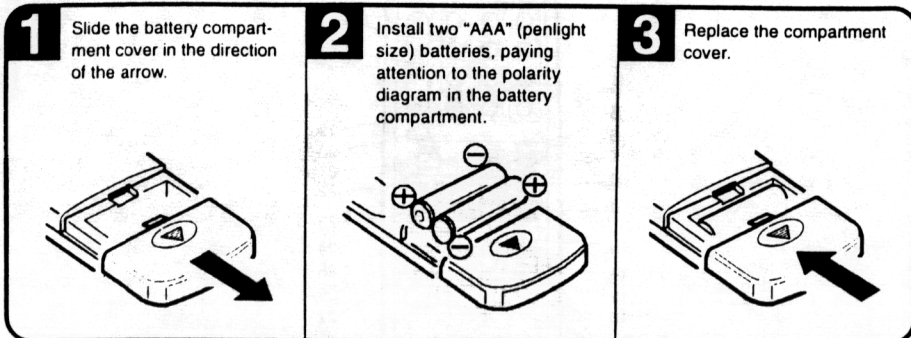
Press	once	twice	3 times	4 times	5 times	6 times	7 times	8 times	9 times
Recording time	NORMAL REC	0:30	1:00	1:30	2:00	3:00	4:00	5:00	NORMAL REC

• To cancel OTR, press the STOP button.

• The TV/VCR channel cannot be changed during recording.

ENGLISH

BATTERY INSTALLATION

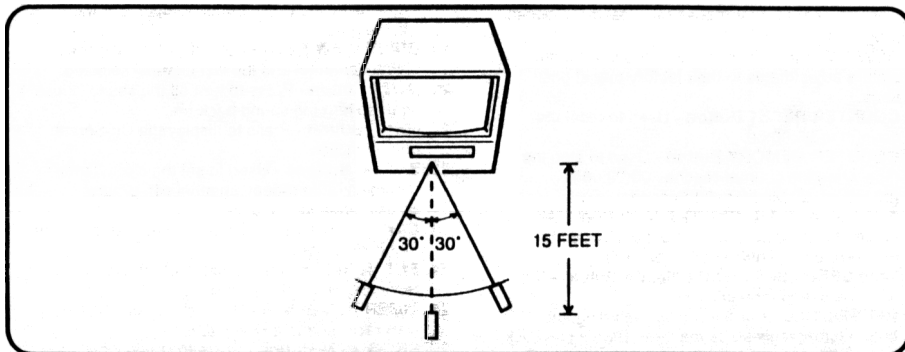


BATTERY PRECAUTIONS

The precautions below should be followed when using batteries in this device:

1. Use only the size and type of batteries specified.
2. Be sure to follow the correct polarity when installing the batteries as indicated in the battery compartment. Reversed batteries may cause damage to the device.
3. Do not mix different types of batteries together (e.g. Alkaline and Carbon-zinc) or old batteries with fresh ones.
4. If the device is not to be used for a long period of time, remove the batteries to prevent damage or injury from possible battery leakage.
5. Do not try to recharge batteries not intended to be recharged; they can overheat and rupture. (Follow battery manufacturer's directions).

EFFECTIVE DISTANCE OF THE REMOTE CONTROL TRANSMITTER

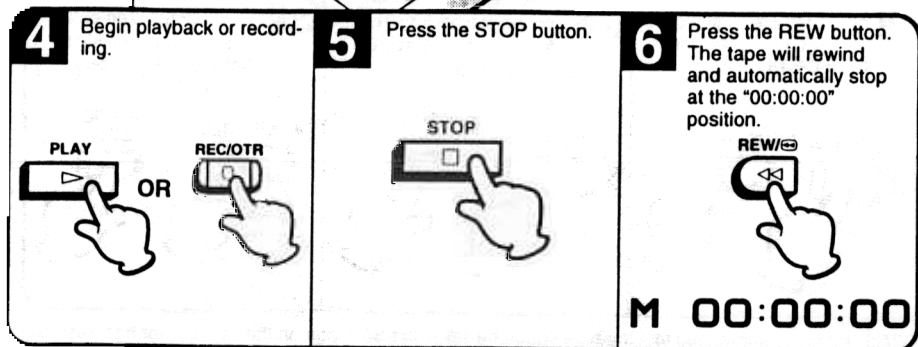
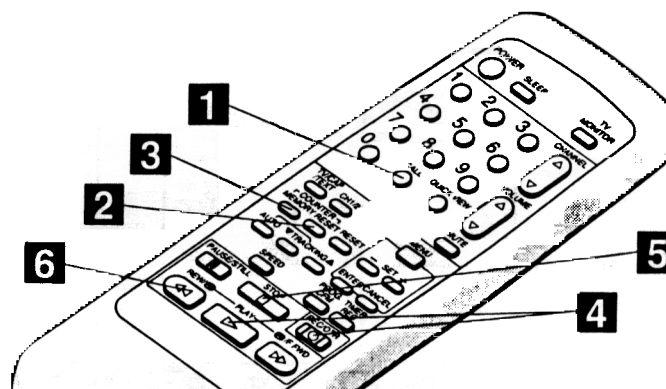
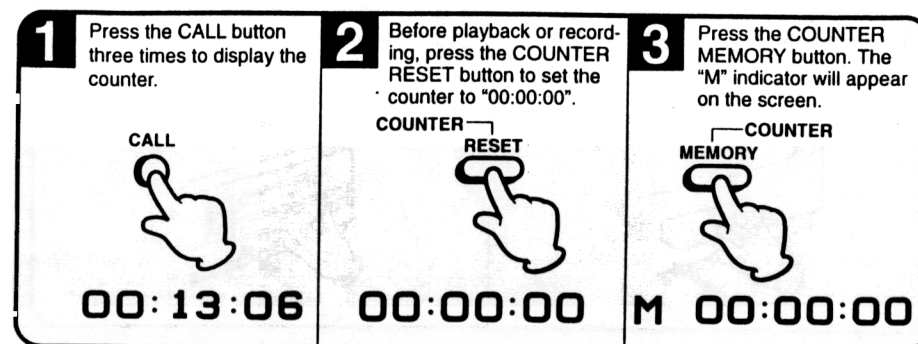


NOTES:

- When there is an obstacle between the TV/VCR and the transmitter, the transmitter may not operate.
- When direct sunlight, an incandescent lamp, fluorescent lamp or any other strong light shines on the Remote Sensor of the TV/VCR, the remote operation may be unstable.

USING THE COUNTER MEMORY

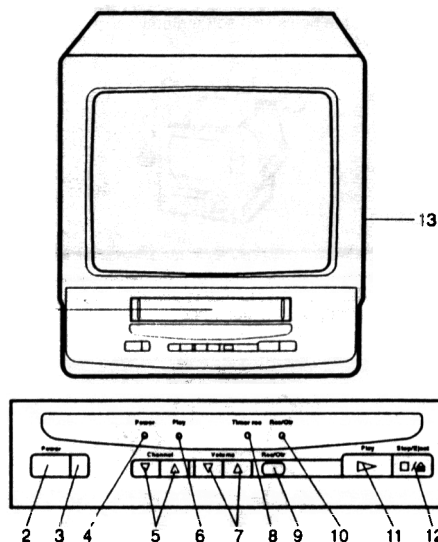
The memory function provides a convenient method of rapidly returning to the starting point of recording or playback. The starting point can be indexed for any location on the tape by pressing the COUNTER RESET button and COUNTER MEMORY button.



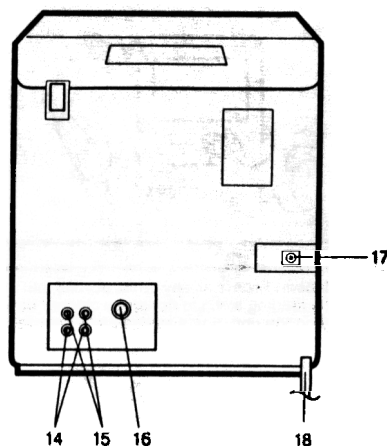
NOTE: To cancel memory, press the COUNTER MEMORY button again.

LOCATION OF CONTROLS

FRONT



REAR



DESCRIPTION OF CONTROLS

FRONT:

1. **Cassette Loading Slot** - To insert or remove a video tape.
2. **Power Button** - Press to turn the TV/VCR on or off. Press this button a few times to demagnetize the TV picture tube and restore color purity.
3. **Remote sensor** - Signals from the Remote Control are received here.
4. **Power Indicator** - Lights when the power is turned on.
5. **Channel ▲/▼ Buttons** - Press to select a channel for viewing or recording.
6. **Play Indicator** - Lights when the TV/VCR is playing a cassette. When moisture condenses on the TV/VCR, the PLAY indicator will flash on and off.
7. **Volume ▲/▼ Buttons** - Press to raise or lower the volume of the sound.
8. **Timer rec Indicator** - This lights when the TIMER REC button is pressed.
9. **Rec/Otr Button** - Press once to start normal recording. Additional presses activate One-Touch Timer Recording.
10. **Rec/Otr Indicator** - Lights when the TV/VCR is recording.

11. **Play Button** - Press to play a prerecorded tape.
12. **Stop/Eject Button** - Press once to stop the tape in any mode. Press again to eject the tape.
13. **Earphone Jack** - Plug an earphone or monaural headphones with an 1/8" miniplug into this jack for private listening.

REAR:

14. **VIDEO/AUDIO IN Jacks** - Audio and video signals cables from an external source can be connected here.
15. **VIDEO/AUDIO OUT Jacks** - Used to output audio and video signals to a TV, amplifier or VCR.
16. **VHF/UHF Antenna Jack** - Connect the 75 ohm coaxial cable from the antenna or Cable TV service to this jack.
17. **DC Input Jack** - Connect the 12V DC car cord (supplied) here for DC operation.
18. **AC Power Cord** - Connect to a 120V, 60Hz outlet.

RECEPTION DISTURBANCES

Most types of television interference can be remedied by adjusting the height and position of the VHF/UHF antenna. Outdoor antennas are recommended for best results. The most common types of television interference are shown below. If one of these symptoms appear when the TV/VCR is connected to a Cable TV system, the disturbance may be caused by the local Cable TV company broadcast.

IGNITION

Black spots or horizontal streaks may appear, the picture may flutter or drift. Usually caused by interference from automobile ignition systems, neon lamps or AC powered tools and appliances such as drills or hair dryers.



GHOSTS

Ghosts are caused by the television signal following two paths. One is the direct path and the other is reflected by tall buildings, hills or other large objects. Changing the direction or position of the antenna may improve the reception.



SNOW

If the TV/VCR is located far from the TV station, in a fringe reception area where the signal is weak, small dots may appear in the picture. If the signal is extremely weak, the installation of a larger external antenna may be necessary.



RADIO FREQUENCY INTERFERENCE (RFI)

Caused by two-way radios, this type of interference produces moving ripples or diagonal streaks in the picture. Some cases may cause a loss of contrast in the picture. Changing the direction and position of the antenna or installing an RFI filter may improve the picture.



PICTURE SIZE VARIATION

A slight picture size variation is normal when you adjust the CONTRAST or BRIGHTNESS settings.



CARE AND MAINTENANCE

To prevent fire or shock hazard, disconnect the TV/VCR from the AC or DC power source before cleaning. The finish on the cabinet may be cleaned with mild soap and a soft, damp cloth and cared for as other furniture. Use caution when cleaning or wiping the plastic parts.

PRECAUTIONS

MOISTURE CONDENSATION

DO NOT OPERATE ANY FUNCTIONS ON THIS UNIT FOR AT LEAST TWO OR THREE HOURS WHEN MOISTURE IN THE AIR CONDENSES ON IT. LET THE UNIT STAND WITH POWER ON (SEE BELOW).

■ WHAT IS MOISTURE CONDENSATION?

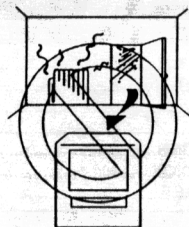
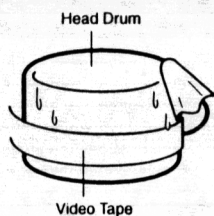
When a cold liquid is poured into a glass, for example, water vapor in the air will condense on the surface of the glass. This is called moisture condensation.

■ MOISTURE WILL CONDENSE ON THE UNIT IN THE FOLLOWING CASES;

- When you move the unit from a cold to a warm place.
- After heating a cold room or under extremely humid conditions.

■ WHEN YOU EXPERIENCE THE ABOVE CONDITIONS,

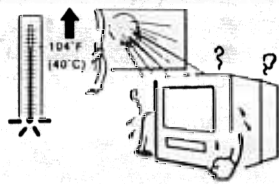
The PLAY indicator will flash on and off and all the function buttons except the STOP/EJECT button are made non-operational to protect the video heads. In this case, eject the video cassette, leave the TV/VCR turned on and let it remain at room temperature until moisture condensation disappears. Depending on the surrounding conditions, this may take two or three hours.



If you cause a static discharge when touching the unit, and the unit fails to function, simply unplug the unit from the wall outlet, wait a few minutes, and plug it back in. The unit should return to normal operation.



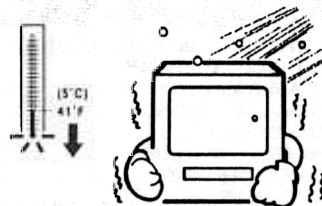
Avoid extreme heat.



Do not place the unit on or near appliances which may cause electromagnetic interference (e.g. speakers, etc). Doing so may cause erratic operation of the unit including picture and/or sound distortion or noise.



Avoid extreme cold.



MATCHING TRANSFORMER - An adapter used to convert 75 Ohm cable to 300 Ohm twin-lead wire, or 300 Ohm to 75 Ohm.



MTS (Multi-channel TV Sound) - A stereo broadcast sound system used for transmitting stereo sound signals on TV, usually broadcast with another channel (SAP).

REAL TIME TAPE COUNTER - A real-time counter that displays the elapsed time during recording or playback in hours, minutes and seconds. The counter does not function on nonrecorded (blank) sections of tape.

RF CONVERTER - A device built into VCRs and converter/descramblers which converts all signals into the video channel (either 3 or 4) for viewing on a TV.

SAP (Separate Audio Program) - A third audio channel under the MTS system frequently used for bilingual broadcasts.

SPLITTER - A device used to divide an incoming antenna wire or coaxial cable into two or more wires or cables.



TWIN-LEAD WIRE (300 OHM) - A two conductor flat wire used for connecting an antenna to a TV set or VCR.



UHF (Ultra High Frequency) - The band of frequencies used for UHF channels 14-69. (Cable companies sometimes transmit UHF channels on other bands.)

VHF (Very High Frequency) - The band of frequencies used to transmit VHF channels 2-13. Also used by cable companies to transmit their own channels.

VHS (Video Home System) - The video tape format most commonly used in the U.S.

VHS-C - A popular video cassette format used in many video camcorders. VHS-C cassettes can be loaded into a video cassette adapter which makes the tape fully compatible with the standard VHS format.

VHS HI-FI - A superior method of recording stereo audio signals on video tape, resulting in very high quality audio recording.

VIDEO CHANNEL - The TV broadcast channel (usually 3 or 4) used to output signals from a VCR or cable box.

VIDEO INPUTS/OUTPUTS - RCA type jacks in back of the VCR used for dubbing or providing audio or video signals from other sources.

FEATURES

Color TV With Video Cassette Recorder - Unique space saving design combines a 13" color TV and a video cassette recorder.

High Quality Picture Technology - This TV/VCR marked "HQ" incorporates VHS High Quality technology. A built-in detail enhancer is used to boost the recorded signal and provide maximum picture quality during playback. It is compatible with other VHS video cassette recorders.

120V AC or 12V DC Operation - This TV/VCR is designed to operate from household AC current or from a 12V DC car cigarette lighter socket.

Frequency Synthesized Tuner - Electronically locks in and memorizes all available channels for perfect reception with the touch of a button.

181 Channel Tuner - Receives standard VHF and UHF broadcast channels and up to 113 cable channels. The actual number of channels received depends upon channel reception in your area or your cable system.

Closed Caption Decoder With Full Text Mode - Displays text captions or full screen text on the screen for hearing impaired viewers.

7-Programs/1-Month Programmable Timer With Everyday/Every Week Capability - The built-in timer allows automatic absentee recording of up to 7 TV programs within 1 month. It is also possible to record a program which is broadcast at the same time everyday or every week.

On-Screen TV Display And VCR Programming - When you select a channel or make other changes, the TV will show an indicator on the screen for a few seconds. Timer recording can be programmed and confirmed on the screen.

Picture Adjustments Using The Remote Control - The On-Screen display allows precise remote control adjustment of BRIGHTNESS, CONTRAST, COLOR, TINT and SHARPNESS.

Automatic Playback/Rewind-Stop-Eject - When loading a cassette tape without the erase prevention tab, this TV/VCR will automatically play back the cassette tape at the correct speed. When a tape reaches its end during playback, recording (except during OTR and Timer Record) and fast forward, it will automatically stop, rewind, stop and eject the tape.

Programmable TV Sleep Timer - Operable from the remote control, the TV can be programmed up to 120 minutes to turn off automatically.

Full Load Tape Transport - Permits rapid access between modes

Automatic Repeat Play System - When Auto Repeat option is turned on, the TV/VCR will automatically play back the same cassette tape repeatedly.

One-Touch Timer Recording (OTR) - Simply by pressing the REC/OTR button, the TV/VCR can be programmed for up to 5 hours of recording with an immediate start.

Audio/Video Input/Output Jacks - A VCR or other video device may be hooked up to this TV/VCR for dubbing or playback purposes.

2 Speed Picture Search - 3 or 5 times normal speed in SP mode (7X or 9X in LP and 9X or 15X in SLP).

3 Speed Record/Playback - Records and plays three tape speeds (SP, LP, SLP).

Real Time Tape Counter with Memory - The counter displays the elapsed time in hours, minutes and seconds and can be used to locate programs. The memory can be used to return the tape to a preselected position (00:00:00).

Digital Auto Tracking - Automatically adjusts tracking during playback for the best possible picture.

On-Screen 3 Language Display - You can select one of 3 languages, English, Spanish or French for on-screen programming.

TV Monitor - When the TV MONITOR button on the remote control is pressed during playback, the TV channel selected on the VCR can be viewed.

SYMPTOMS	CAUSE	POSSIBLE SOLUTIONS	PAGE
TV shut off.	TV station stopped broadcasting.	Tune new channel.	18
	Sleep timer is set.	Set Sleep Timer to "0".	19
Closed caption is not activated.	TV station experiencing problems or program tuned is not closed captions.	Try another channel.	17,18
	TV signal is weak.	Check CATV connection of VHF/UHF antenna, reposition or rotate antenna.	13,15
	The TV/CAP/TEXT button is not depressed.	Press the TV/CAP/TEXT button to turn on the closed caption.	19,20
RECORDING			
TV recording does not work.	The video cassette's erase prevention tab is broken off.	Place a piece of vinyl tape over the hole.	28
Timer recording does not work.	The time is not set correctly.	Reset the present time.	26
	The recording start/end time is not set correctly.	Reset the start/end time.	35,36
	The TIMER REC button has not been pressed (the Timer rec indicator is not lit).	Press the TIMER REC button (the Timer rec indicator is lit).	36
PLAYBACK			
Noise bars appear on the screen.	Tape is old or worn.	Replace the tape.	-
	Tracking adjustment is beyond range of automatic tracking circuit.	Adjust tracking manually using the TRACKING ▲ and ▼ buttons on the remote control.	31
	Video heads are dirty.	Clean the video heads.	47
REMOTE CONTROL			
Remote control does not operate.	The remote control is not aimed at the sensor.	Aim the remote control at the remote sensor.	11
	Distance is too far or too much light in the room.	Operate within 15 feet or reduce the light of the room.	11
	There is an obstacle in the path of the beam.	Clear the path of the beam.	11
	The batteries are weak.	Replace the batteries.	11
	The batteries are not inserted correctly.	Insert correctly.	11

IMPORTANT SAFEGUARDS (CONTINUED)

12. POWER-CORD PROTECTION

Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

13. LIGHTNING

To protect your unit from 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 unit due to lightning and power line surges.

14. POWER LINES

An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into 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 as contact with them might be fatal.

15. OVERLOADING

Do not overload wall outlets and extension cords as this can result in a risk of fire or electric shock.

16. OBJECT AND LIQUID ENTRY

Do not push objects through any openings in this unit as they may touch dangerous voltage points or short out parts that could result in fire or electric shock. Never spill or spray any type of liquid into the unit.

17. OUTDOOR ANTENNA GROUNDING

If an outside antenna or cable system is connected to the unit, be sure the antenna or cable system is grounded so as 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, 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.

18. SERVICING

Do not attempt to service this unit yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

19. DAMAGE REQUIRING SERVICE

Unplug this unit from the wall outlet and refer servicing to qualified service personnel under the following conditions:

- When the power-supply cord or plug is damaged.
- If liquid has been spilled, or objects have fallen into the unit.
- If the unit has been exposed to rain or water.
- If the unit does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions, as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the unit to its normal operation.
- If the unit has been dropped or the cabinet has been damaged.
- When the unit exhibits a distinct change in performance, this indicates a need for service.

20. REPLACEMENT PARTS

When replacement parts are required, be sure the service technician uses replacement parts specified by the

SPECIFICATIONS

TELEVISION

Picture Tube:	13" (measured diagonally)
Tuner Type:	Quartz PLL Frequency Synthesized
Receiving Channels:	VHF 2-13
	UHF 14-69
	CATV 14-36 (A)-(W)
	37-59 (AA)-(WW)
	60-85 (AAA)-(ZZZ)
	86-94 (86)-(94)
	95-99 (A-5)-(A-1)
	100-125 (100)-(125)
	01 (5A)
Antenna Input:	VHF/UHF In 75 ohms coaxial
Speaker:	3", 8 ohms
Audio Output Power:	1.0 W

VCR


Video System:	VHS, 2 Rotary Heads Helical Scanning System.
Video Signal:	NTSC Color
Cassette Tape:	VHS
Audio Track:	1 Track
Tape Speed:	SP: 33.35 mm/sec
	LP: 16.67 mm/sec
	SLP: 11.12 mm/sec
F.FWD/REW Time:	Approx. 2 minutes and 30 seconds (T-120 Cassette)
Speed Search:	SP 3 & 5 x Normal Speed
	LP 7 & 9 x Normal Speed
	SLP 9 & 15 x Normal Speed

GENERAL


Power Source:	AC 120V 60Hz
	DC 12V
Power Consumption:	88 Watts (AC 120V), 54 Watts (DC 12V)
Dimensions:	W 14-3/8" x D 14-9/16" x H 15-1/16"
Weight:	27.6 lbs
Inputs/Outputs:	Video: In (RCA) 1Vp-p 75 ohm
	Out (RCA) 1Vp-p 75 ohm
	Audio: In (RCA) 300mV/50K ohm
	Out (RCA) 390mV/1K ohm
Storage Temperature:	-20°C to 60°C (-4°F to 140°F)
Operating Temperature:	5°C to 40°C (41°F to 104°F)
Remote Control:	Infrared, Direct Access
	2 x AAA batteries
Accessories:	300/75 ohm matching transformer
	Twin-lead telescopic Antenna
	12V DC Car Cord
	Remote Control

Specifications are subject to change without notice.

ENGLISH



CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN



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



The lightning 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 PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION: TO PREVENT ELECTRIC SHOCK DO NOT USE THIS POLARIZED PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

WARNING: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try correcting the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
 - Increase the separation between the equipment and receiver.
 - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CAUTION: Changes or modifications not expressly approved by the party responsible for compliance with the FCC Rules could void the user's authority to operate this equipment.

MEMO
