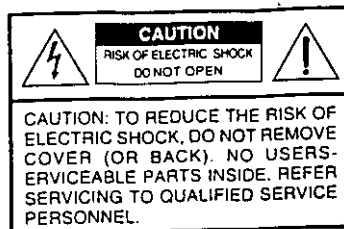


OWNER'S MANUAL

VHS 4 HEAD Hi-Fi VIDEO CASSETTE RECORDER
WITH REMOTE CONTROL

VRK6AANAY

SAFETY PRECAUTIONS



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.

CAUTION: TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.

USER-INSTALLER CAUTION: YOUR AUTHORITY TO OPERATE THIS FCC CERTIFIED EQUIPMENT COULD BE VOIDED IF YOU MAKE CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THIS PARTY RESPONSIBLE FOR COMPLIANCE TO PART 15 OF THE FCC RULES.

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.

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.

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.

Avoid Volatile Liquid

Do not use volatile liquids, such as an insect spray, near the unit.
Do not leave rubber or plastic products touching the unit for a long time. They will mar the finish.

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, one of its most crucial internal parts. To prevent the VCR from possible damage, do not use the unit for at least 2 hours when there is an extreme or sudden change in temperature.

Compatibility

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

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

Model No. _____

Serial No. _____

Retain this information for future reference.

IMPORTANT SAFETY INSTRUCTIONS

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

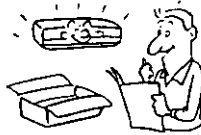
This set has been designed and manufactured to assure personal safety. Improper use can result in electric shock or fire hazard. The safeguards incorporated in this unit will protect you if you observe the following procedures for installation, use and servicing. This unit is fully transistorized and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

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

INTRODUCTION

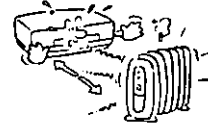
1. Read owner's manual

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



5. Heat

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



2. Power Sources

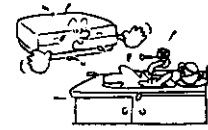
This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company.

For products intended to operate from battery power, or other sources, refer to the operating instructions.



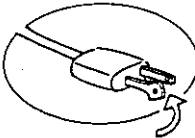
6. Water and Moisture

Do not use this product near water—for example, near a bath tub, wash bowl, kitchen sink, or laundry tub; in a wet basement; or near a swimming pool and the like.



3. Grounding or Polarization

This product may be 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.



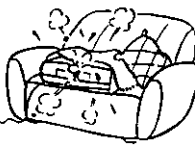
7. Cleaning

Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.



4. Ventilation

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



8. 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 product.



9. Overloading

Do not overload wall outlets; extension cords, or integral convenience receptacles as this can result in a risk of fire or electric shock.

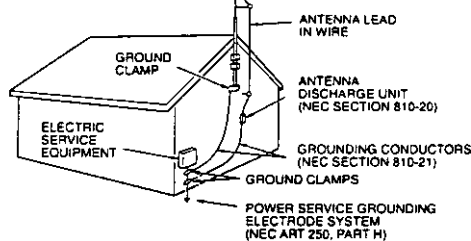


IMPORTANT SAFETY INSTRUCTIONS

10. Outdoor Antenna Grounding

If an outside antenna or cable system is connected to the product, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electrical Code, ANSI/NFPA 70, provides information with regard 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.

EXAMPLE OF ANTENNA GROUNDING AS PER NATIONAL ELECTRICAL CODE



NEC - NATIONAL ELECTRICAL CODE
S2898A

11. 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.

12. Lightning

For added protection for this product during 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 product due to lightning and power-line surges.



13. Object and Liquid Entry

Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.



14. Attachments

Do not use attachments not recommended by the product manufacturer as they may cause hazards.

15. Accessories

Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the product. Any mounting of the product should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.



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

16. Damage Requiring Service

Unplug this product 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 product.
- If the product has been exposed to rain or water.
- If the product 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 product to its normal operation.
- If the product has been dropped or damaged in any way.
- When the product exhibits a distinct change in performance-this indicates a need for service.

17. Servicing

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



18. Replacement Parts

When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.

19. Safety Check

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



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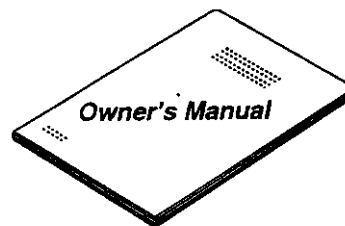
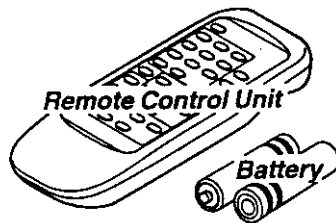
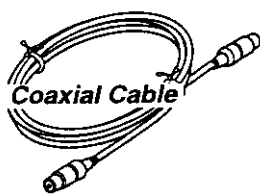
This Owner's Manual explains how to use your VCR and, in particular, using the remote control unit keys to control the VCR. There is an "Identification of Controls" illustration on page 8 and 9.

ENGLISH

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ACCESSORIES

Before installing your VCR, please check you have the following items.



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. If the VCR is operated as it is, the tape may stick to the tape head and cause damage to the tape and/or the deck. Under these circumstances, do not operate the VCR for about 2 hours. Leave the power cord connected so that the VCR can dry out.

IMPORTANT SAFEGUARDS

1. READ INSTRUCTIONS

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

2. RETAIN INSTRUCTIONS

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

3. HEED WARNINGS

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

4. FOLLOW INSTRUCTIONS

All operating and instructions for use should be followed.

5. CLEANING

Unplug this video product from the wall outlet before cleaning. Do not use liquid or aerosol cleaners. Use a damp cloth for cleaning.

6. ATTACHMENTS

Do not use attachments not recommended by the video product manufacturer as they may cause hazards.

7. WATER AND MOISTURE

Do not use this video product near water—for example, near a bath tub, wash bowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool, and the like.

8. ACCESSORIES

Do not place this video product on an unstable cart, stand, tripod, bracket, or table. The video product may fall, causing serious injury to a child or adult, and serious damage to the appliance. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the video product. Any mounting of the appliance should follow the manufacturer's instructions, and should use a mounting accessory 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.



9. VENTILATION

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

10. POWER SOURCES

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

11. GROUNDING or POLARIZATION

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

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

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

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

Never push objects of any kind into this video product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the video product.

17. SERVICING

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

ENGLISH

18. DAMAGE REQUIRING SERVICE

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

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

19. REPLACEMENT PARTS

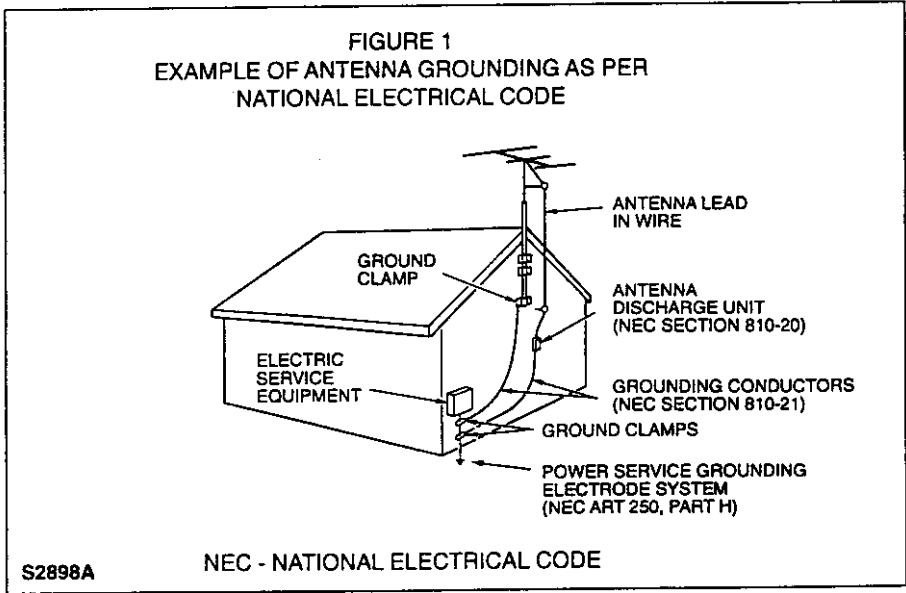
When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazard.

20. SAFETY CHECK

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

21. OUTDOOR ANTENNA GROUNDING

If an outside antenna or cable system is connected to the video product, 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 Electric Code, ANSI/NFPA No. 70, provides information with regard 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. See Figure 1.



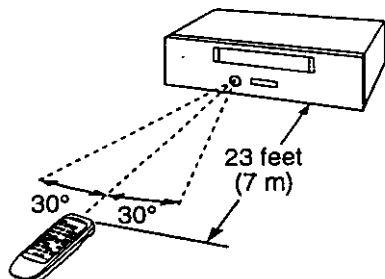
NOTE TO CATV SYSTEM INSTALLER:

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,

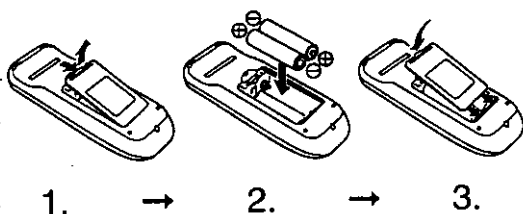
SPECIFIES THAT THE CABLE GROUND SHALL BE CONNECTED TO THE GROUNDING SYSTEM OF THE BUILDING, AS CLOSE TO THE POINT OF CABLE ENTRY AS PRACTICAL.

PREPARATION

Remote Control Operation



Battery Installation



! NOTE

- Install two size "AA" batteries into the battery compartment.
- Do not mix a new battery with an old one.
- Do not heat, disassemble, short or throw used batteries into a fire.

Precautions on Use

- Do not place the remote control unit in an area where it may become wet and very hot.
- Dropping the remote control unit on a hard surface may result in damage.
- Do not use benzene, thinner or other petroleum based solvent to clean the remote control unit. To clean, wipe a soft cloth slightly moistened with a mild detergent, and then wipe dry with a soft cloth.

Video Cassette Tape

Only video cassette tapes marked with **VHS** can be used in this VCR.

Tape Speeds and Maximum Recording Playback Time

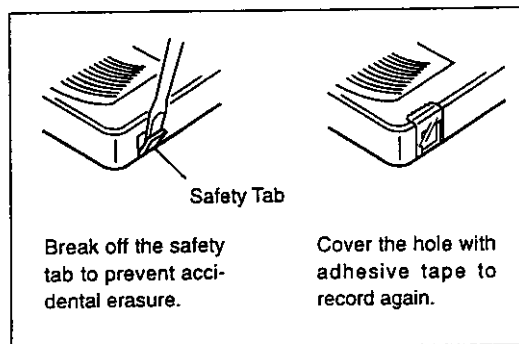
Video Cassette Record Mode	T-160	T-120	T-60	T-30
EP	480 min	360 min	180 min	90 min
LP	320 min	240 min	120 min	60 min
SP	160 min	120 min	60 min	30 min

- SP: Suitable for a general recording with better picture and sound quality.
- EP: Suitable for doubling recording time, but with less picture quality and sound than using the SP mode.
- LP mode is only available during playback.

Care of the Video Cassette Tape

- Avoid violent vibration or shock.
- Do not place in a location where strong magnetic fields exist (near a motor, transformer or magnet).
- Place the video cassette in the cassette case and store vertically.
- Never place or store video cassette tape in dusty places, direct sunlight and/or a humid location.

Safety tab



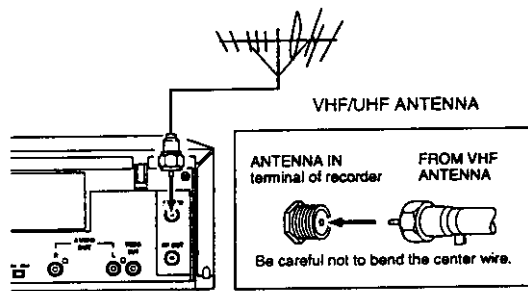
Installation

TV Antenna and VCR

If a single antenna for both VHF and UHF is used: Disconnect the VHF/UHF antenna from the TV and connect it to the ANTENNA IN JACK on the rear panel of the VCR.

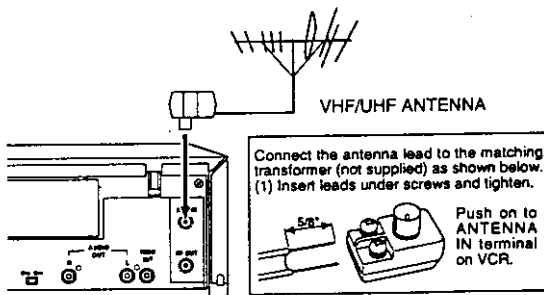
1. VHF/UHF connection with 75-OHM coaxial (round) cable

Connect as shown to the ANTENNA IN JACK on the rear of the VCR.



2. VHF/UHF antenna connection with 300-OHM flat twin lead

Connect as shown to the ANTENNA IN JACK on the rear of the VCR using a matching transformer (not supplied).

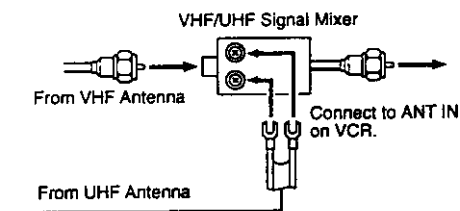


If separate VHF and UHF antennas are used:

Disconnect the antenna leads from the TV and connect them to the ANTENNA IN JACK on the rear panel of the VCR using a VHF/UHF signal mixer (not supplied).

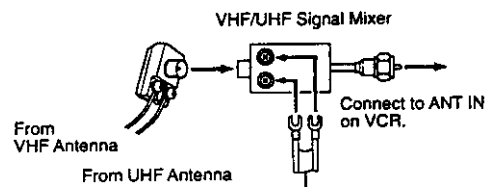
1. VHF/UHF antenna connection with 75-OHM coaxial (round) cable and 300-OHM flat twin lead

Connect as shown to the ANTENNA IN JACK on the rear of the VCR using a VHF/UHF Signal mixer.



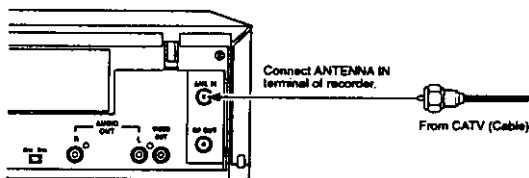
2. VHF/UHF antenna connection with 300-OHM flat twin leads

Connect as shown to the ANTENNA IN JACK on the rear of the VCR using a matching transformer and a VHF/UHF Signal mixer.



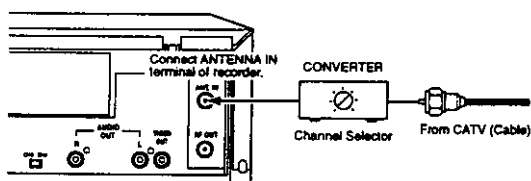
VCR and CATV

If a CATV cable is directly connected to the TV:
Connect the CATV cable to the ANTENNA IN terminal of the VCR.



If a CATV cable with a converter or a decoder is used:

Connect the cable from the converter or decoder box to the ANTENNA IN terminal of the VCR.



! NOTE

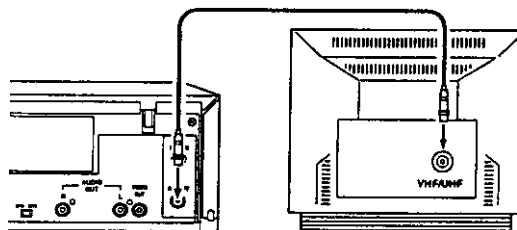
- Adjust the channel selector of the VCR to the output channel of the converter.
- The VCR must always be set to the converter channel for timer recording.
- When the VCR is used with a converter or a decoder, recording a program while watching another channel cannot be done since all cable channels are selected with the converter.

VCR and TV

Connection to the TV antenna terminals:

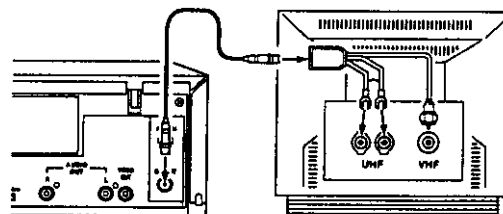
1. TV equipped with a single VHF/UHF ANTENNA TERMINAL

Attach the coaxial cable (supplied) to the VCR and then connect the other end to the antenna terminal.



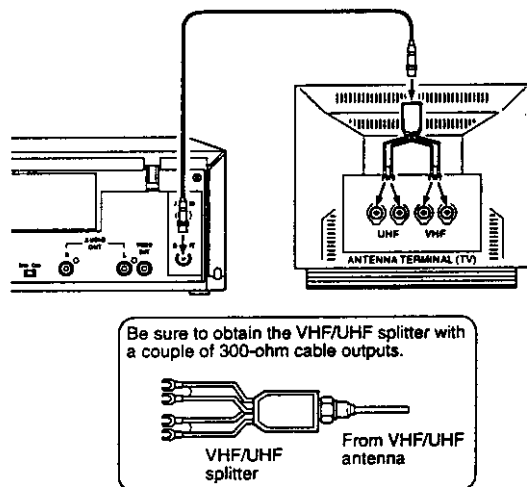
2. TV equipped with 75-OHM VHF ANTENNA TERMINAL and 300-OHM UHF ANTENNA TERMINAL

Attach the coaxial cable to the VCR and then connect the other end to each of the VHF and UHF terminals of the TV using a VHF/UHF splitter (not supplied).



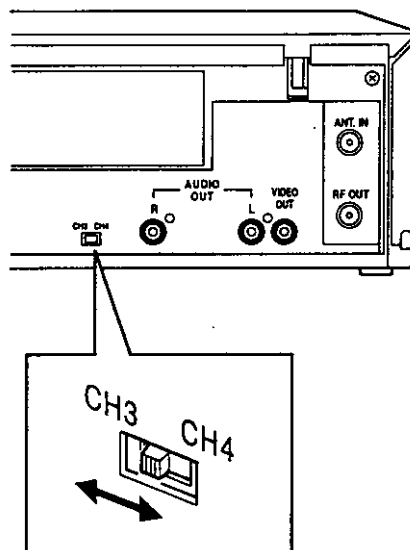
3. TV equipped with 300-OHM ANTENNA TERMINALS for both VHF and UHF

Connect the coaxial cable (supplied) as shown below using a VHF/UHF splitter (not supplied).



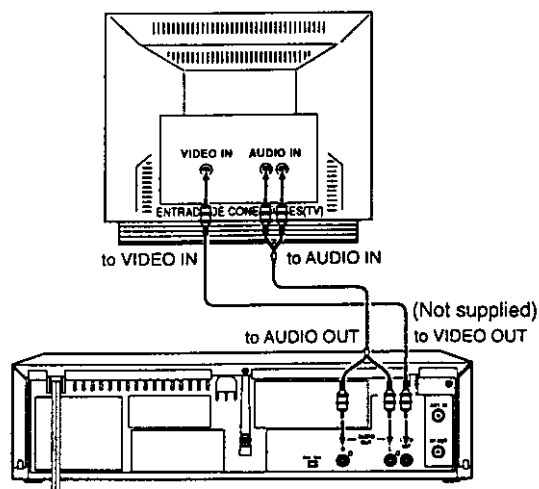
Setting the VCR Output Channel

Set the Output channel selector (3 ↔ 4) on the rear panel to the vacant channel in your area (3 or 4).



Connection to the TV with "VIDEO IN" and "AUDIO IN" connectors:

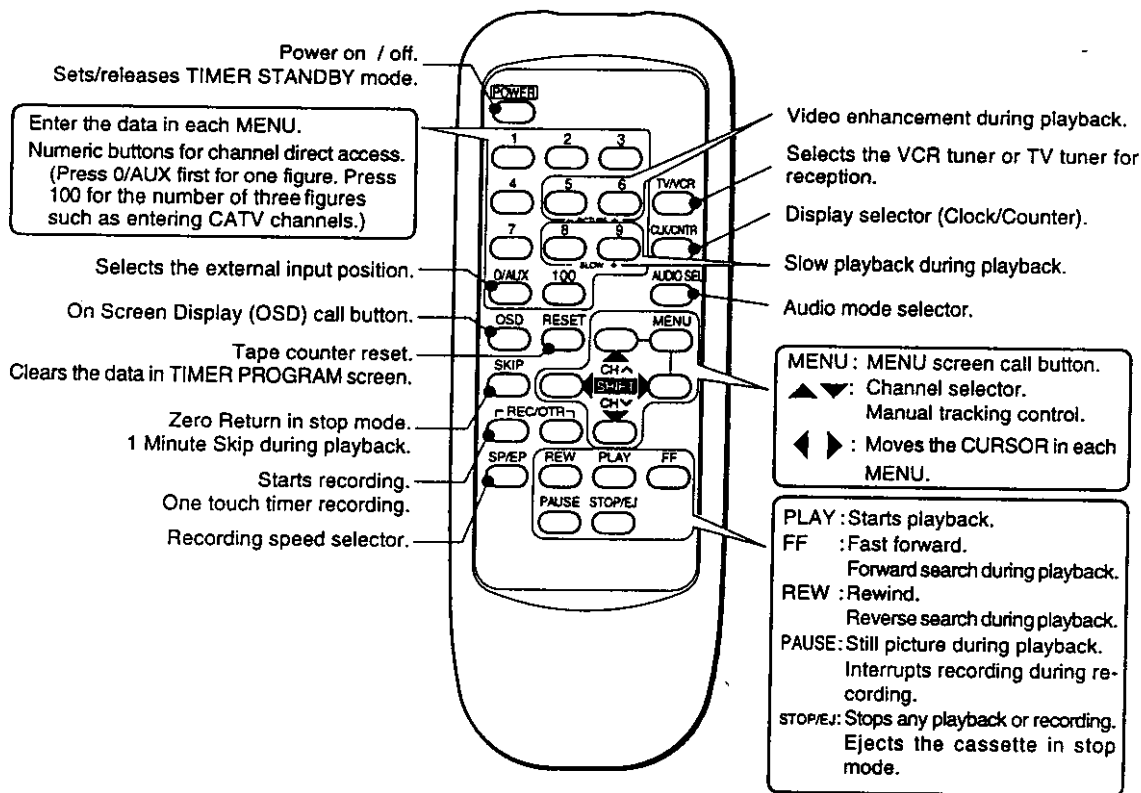
In this case select the A/V mode specified on your TV, instead of VHF channel 3 or 4 for video viewing.



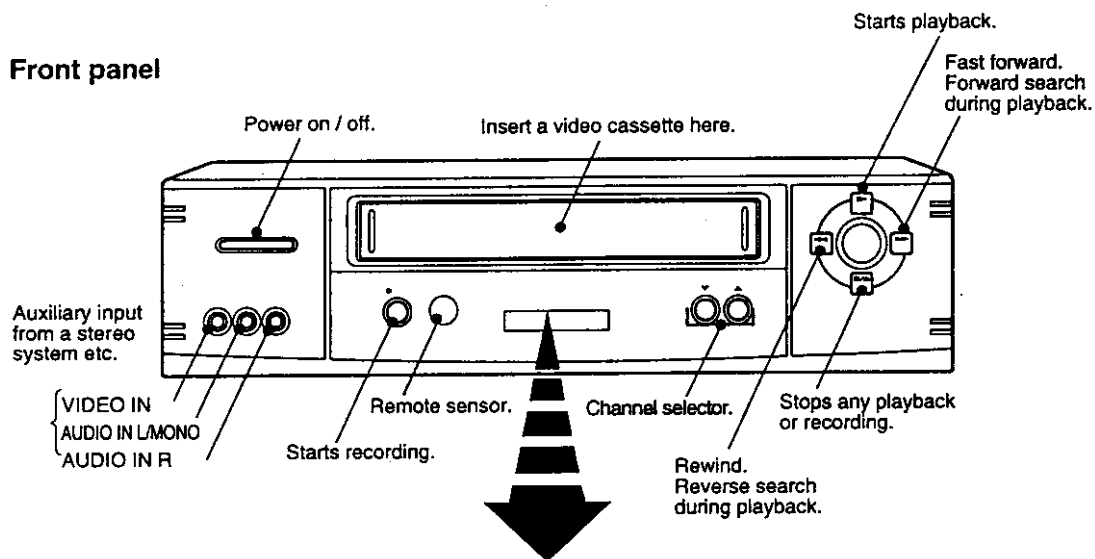
ENGLISH

Identification of Controls

Remote control unit



Front panel



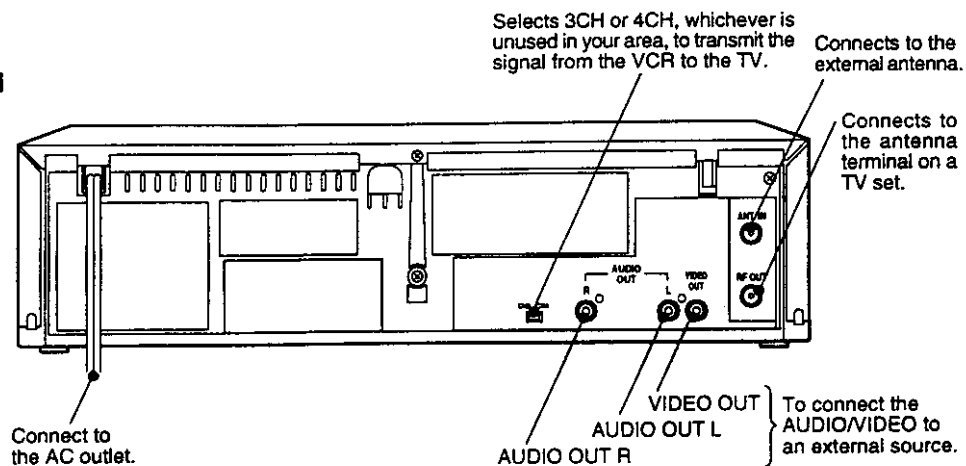
Multi-display



- L : OTR/Timer set indicator.
- DT : Digital tracking indicator.
- : REC indicator.
- AUTO : Auto scan indicator.
- SEP : Tape speed indicator.

- 8888 : Clock/Status indicator.
- L R : Audio output indicator.
- VCR : Video mode indicator.
- : Power indicator.
- APM : AM/PM indicator.

Rear panel



ENGLISH

Presetting the Language

IMPORTANT:

- It is necessary to preset the LANGUAGE you want to use for the on-screen display before making any setting such as clock setting or channel memory.
- LANGUAGE setting is required when "12 : 00 AM" blinks in the multi-display after the VCR is first connected to an AC power source or after a power failure has occurred.

1. Turn on the TV.

2.  to turn on the VCR.

3.  to display the LANGUAGE screen.

ENGLISH =SELECT (1)
ESPAÑOL =ELECTR (2)
FRANÇAIS=SELECT (3)

END=(MENU)
FIN=(MENU)

4.  to select a language for OSD.

English   

M E N U
1: TIMER PROGRAM
2: CLOCK SET

Español  

M E N U
1: PROGRAMA TEMPORIZADOR
2: AJUSTE DE HORA

Français  

M E N U
1: TIMER DE PROGRAMM
2: HORL REGLAGE

5.  to return to the normal TV screen.

! NOTE

- If the **MENU** button is pressed at the LANGUAGE screen in step 3, the language is automatically set to English and the VCR returns to the MENU screen.

Using the Menu

1.  to display the MENU screen.

M E N U
1: TIMER PROGRAM
2: CLOCK SET
3: CH MEMORY
4: LANGUAGE
5: AUTO ANTENNA (YES)
6: SAP (NO)

SELECT=(1-6) END=(MENU)

2.  to select menu items.

See page 18 for details.

TIMER PROGRAM

If the clock has not been set, the CLOCK SET screen appears. Follow the procedure on the following page to set the clock.

See page 11 for details.

CLOCK SET

See page 13 for details.

CH MEMORY

See left column for step 4.

ENGLISH =SELECT (1)
ESPAÑOL =ELECTR (2)

See page 12 for details.

5: AUTO ANTENNA (YES)
6: SAP (NO)

See page 21 for details.

5: AUTO ANTENNA (YES)
6: SAP (NO)

3.  to quit each MENU.

  again to return to the normal TV screen.

! NOTE

4: LANGUAGE
5: AUTO ANTENNA (YES)
6: SAP (NO)
NOT AVAILABLE NOW
SELECT=(1-6) END=(MENU)

When AUX (auxiliary input) position is selected, or during playback or recording, the CH MEMORY screen cannot be selected. This message will appear, and the normal TV screen will be restored.

Setting VCR Clock

After installing the VCR, you must set the date and time before setting a timer program.

EXAMPLE

Setting to
June 5, 1998, 8:30 PM

Basic key functions

: Move the CURSOR
 1 - 9 : Set the data
 : Quit the MENU

ENGLISH

1. to display the MENU screen.

M E N U
 1 TIMER PROGRAM
 2 CLOCK SET

2. to display the CLOCK SET screen.

CLOCK SET
 TIME ---:-- AM
 MONTH --
 DAY ---
 YEAR ----
 DATA = (0-9) END = (MENU)

3. 8 to set the TIME.

CLOCK SET
 TIME 8:30 AM AM=1 PM=2
 MONTH --
 DAY ---
 YEAR ----
 SHIFT = (-) DATA = (0-9) END = (MENU)

4. to select PM.

CLOCK SET
 TIME 8:30 PM
 MONTH --
 DAY ---
 YEAR ----
 SHIFT = (-) DATA = (0-9) END = (MENU)

5. 6 5 to set the MONTH and DAY.

CLOCK SET
 TIME 8:30 PM
 MONTH 6
 DAY 5
 YEAR ----
 SHIFT = (-) DATA = (0-9) END = (MENU)

6. to set the YEAR.

CLOCK SET
 TIME 08:30 PM
 MONTH 6
 DAY 5 THU
 YEAR 1998
 SHIFT = (-) DATA = (0-9) END = (MENU)

7. TWICE to start the clock and exit this mode.

◆ HINTS ON CLOCK SETTING ◆

- To set the time exactly to the second, press the **MENU** button at the exact time corresponding with a time signal from an accurate clock, radio, telephone and so on in step 7 above.
- With the memory backup circuitry incorporated in this unit, the programming data for the clock and timer recording can be retained securely when a power failure of approximately 1 minute or less occurs.

Using the TV/VCR Button on the Remote Control

TV mode (using the TV Tuner)

1. If the VCR power is OFF, simply turn your TV set ON. There is no need to turn the VCR ON.
2. Select the channel you want to watch by using the channel select buttons of the TV set.

! NOTE

If the VCR is ON and the VCR indicator "VCR" is lit on the multi-display, press the **TV/VCR** button so that the "VCR" indicator is OFF.

VCR mode (using the VCR Tuner)

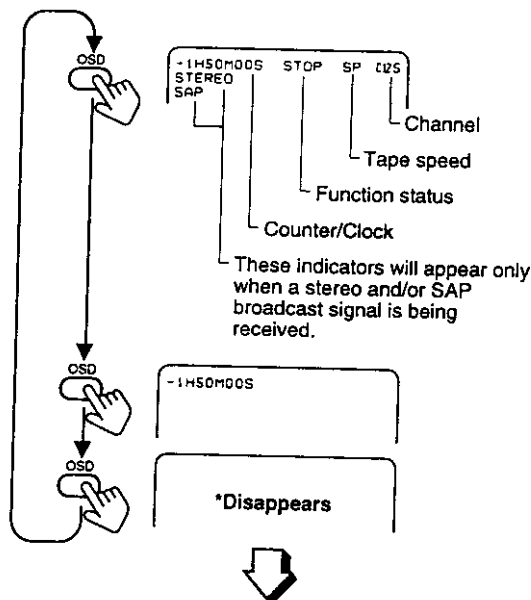
1. Turn your TV set ON. Set your TV to the same channel as the VCR output channel selector (3 or 4).
2.  to turn on the VCR.
3.  to select VCR mode. The "VCR" indicator light will illuminate on the VCR multi-display.
4.  to choose the channel you want to watch and/or record. The program on that channel will be shown on your TV screen.

! NOTE

- If you have cable TV, choose either channel 3 or 4, whichever 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).

On Screen Display (OSD)

You can display the on-screen information which tells you the VCR status and channel.



Whenever a function button is pressed (PLAY, STOP, etc.) or the channel is selected, within a few seconds OSD will appear.

Auto Antenna

If your TV has Audio/Video terminals and the VCR is connected to them, set AUTO ANTENNA to "NO" at step 2 below.

1.  to display the MENU screen.
2.  to set "NO".

4	LANGUAGE
5	AUTO ANTENNA (NO)
6	SAP (NO)
3.  to return to the normal TV screen.

! NOTE

- When the unit and TV are connected only by the antenna cable:
Leave the setting as "YES". Switching between the TV and VCR will be performed automatically. If the TV is set to the channel designated for the VCR (3 or 4), it is possible to watch a video.
- When the unit and TV are connected by a video and audio cable (not supplied):
Set the setting to "NO". When the TV is switched to VCR input, it is possible to watch a video.

CHANNEL TUNING

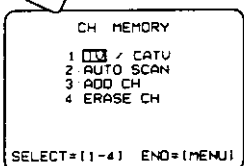
Setting the CATV Mode

This VCR is designed to select CATV signals (STD/HRC/IRC) automatically.

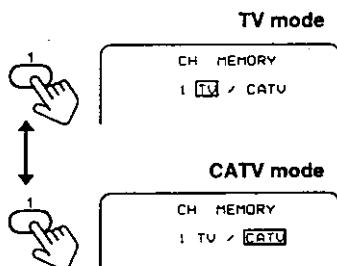
1.  to display the MENU screen.



2.  to display the CH MEMORY screen.



3.  to select TV or CATV.



4.  TWICE to return to the normal TV screen.

Channel Select

1. Using the   buttons

Front panel / Remote control

Press or hold down  to move →

Press or hold down  to move ←

TV mode

2 ⇌ 3 ⇌ 4 ⇌ ⇌ 68 ⇌ 69 ⇌ AUX

CATV mode

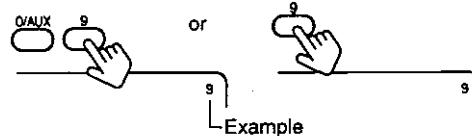
1 ⇌ 2 ⇌ 3 ⇌ ⇌ 124 ⇌ 125 ⇌ AUX

2. Using the ,  ...   buttons

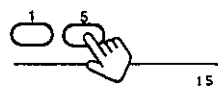
This way, it is also possible to call the channel number.

Remote control only

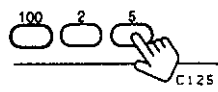
- One-digit channel (2-9)



- Two-digit channel [10-69, 70-99 (CATV)]



- Three-digit channel [100-125 (CATV)]



Selecting AUX Position

-  TWICE to select the AUX position.



Multi-display

ENGLISH

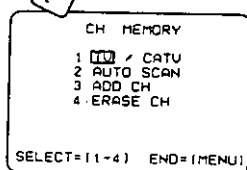
Auto Channel Scanning

This operation allows you to automatically store all channels that can be received in your area.

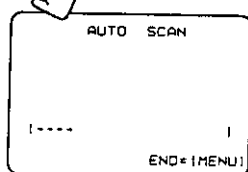
1.  to display the MENU screen.



2.  to display the CH MEMORY screen.



3.  to start scanning.



When the VCR completes scanning all the receivable channels, the normal TV screen will be restored.

- *  to force quit while scanning.

Blue Screen Function

If an empty channel is selected or a blank section of tape is encountered in Play mode, the TV screen automatically changes to a solid blue color. The screen will remain blue until an active channel is selected or a recorded signal is again detected.

Erasing/Adding the Channel Position

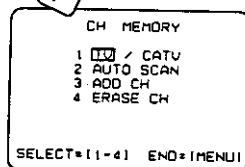
1.  -   to select the channel to be erased/restored (Added).



2.  to display the MENU screen.

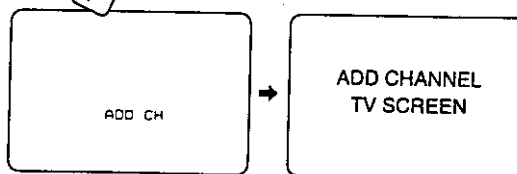


3.  to display the CH MEMORY screen.



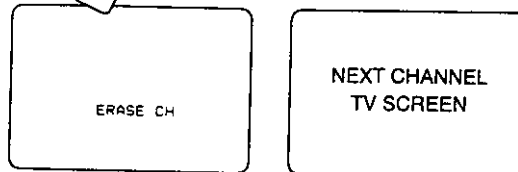
4. Adding the Channel Position

-  to ADD.



Erasing the Channel Position

-  to ERASE.



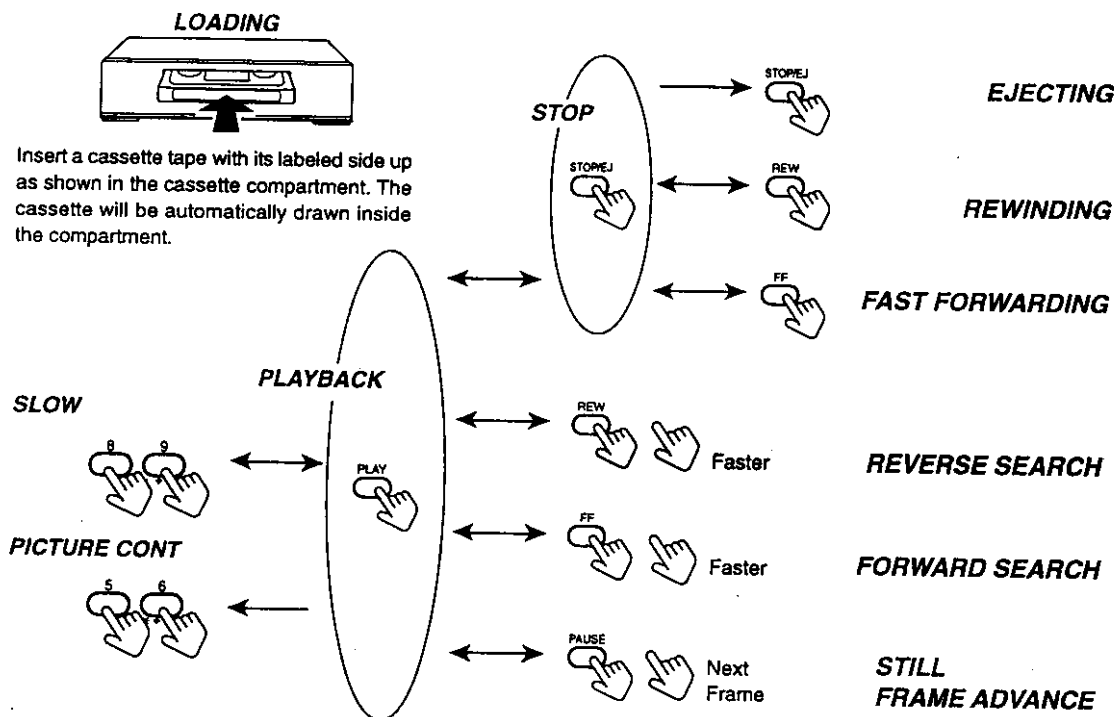
! NOTE

Erased channels can also be selected with the **NUMBER** buttons.

BASIC OPERATION

Playback a Video Cassette

ENGLISH



Slow Playback

Press these buttons to start Slow Playback at 1/6 speed during PLAYBACK. Each press of in this mode changes the playback speed in 5 steps. Pressing in this mode changes the speed back to the previous slow playback speed.

Picture Control

Press these buttons to obtain the desired picture enhancement. This function is also available in Slow Playback and Still Frame modes.

Frame Advance

Press this to advance the picture one frame during playback.

! NOTE

- During SLOW PLAYBACK, use the buttons to move the noise bars up or down.
- During STILL FRAME, use the buttons to eliminate the shake of the picture screen.
- The audio output is muted except during normal PLAYBACK.
- Noise bars appear on the picture during picture search. This is not a defect in the unit.
- If the VCR is left in Still mode for more than 5 minutes, it will automatically return to playback mode to prevent damage to the tape.
- A tape recorded in LP mode can be played back, but special playback functions such as still and slow playback is not assured.

Digital Tracking Control

Auto tracking

When playback starts or playback speed is changed during playback, the VCR enters Auto tracking mode. At this time, the indication "DT" blinks on the multi-display for a few seconds.

Manual tracking

If noise still appears (picture and sound) :

 or  during PLAYBACK until the best picture is obtained.

 2 SECONDS to return to the Auto tracking mode.

! NOTE

The noise on the screen may not be completely removed depending on the tape used, especially when the tape has been recorded on another VCR.

1 Minute Skip

With this feature you can skip over one minute's worth of commercials recorded on a tape.

-  during PLAYBACK.
The VCR will search forward 60 seconds, then resume playback.
- ↳  to resume playback.
- ↳  to stop.

Zero Return

1.  during RECORDING or PLAYBACK to set the counter to 0:00:00 at a scene you wish to watch again.
2.  in STOP mode.
The VCR will go into FF or REW mode until the counter setting is 0:00:00.

CLOCK/COUNTER Display Switching

(Make sure to insert the cassette tape)

-  to change the display.

! NOTE

- The counter display automatically reverts to the clock display when the unit is turned off or a cassette tape is ejected.
- The counter function does not operate during unrecorded sections of the tape.

Auto Operation Functions

Full Auto Playback (With VCR power OFF)

1. Insert the video cassette without safety tab.
2. The VCR is turned on and the tape starts to playback.
3. The tape is rewound to the beginning when it reaches the end.
4. The tape is ejected and the VCR is turned off.

Auto Playback (With VCR power ON)

1. Insert the video cassette without safety tab.
2. The tape starts to playback.
3. The tape is rewound to the beginning when it reaches the end. The VCR is not turned off.

! NOTE

The Auto Playback or Full Auto Playback mode will be released if one of the tape related buttons (FF, REW, PAUSE, STOP/EJECT, PLAY or POWER) is pressed.

Auto Turn on

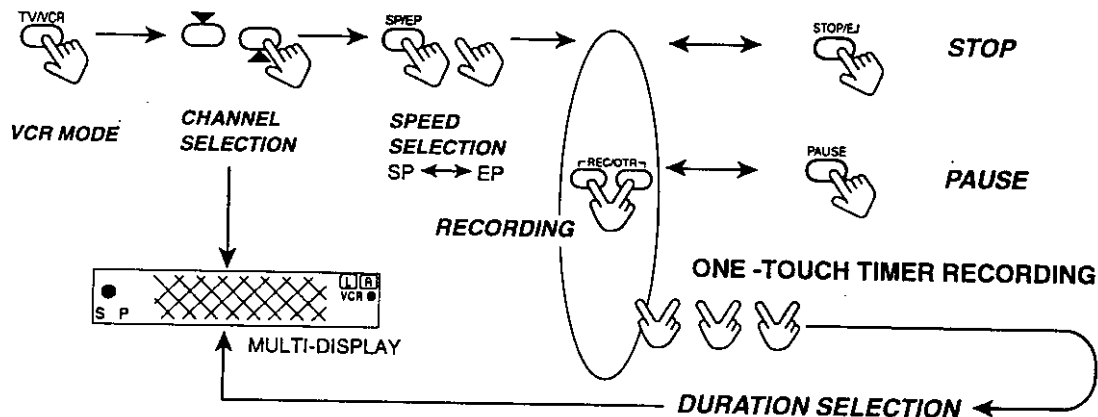
When a cassette tape with a safety tab is inserted with the VCR turned off, the VCR will be automatically turned on.

Auto Rewind

When a tape reaches its end, (except programmable timer recording), it will automatically be rewound to its beginning and the unit will switch to the stop mode.

RECORDING

Recording TV Programs

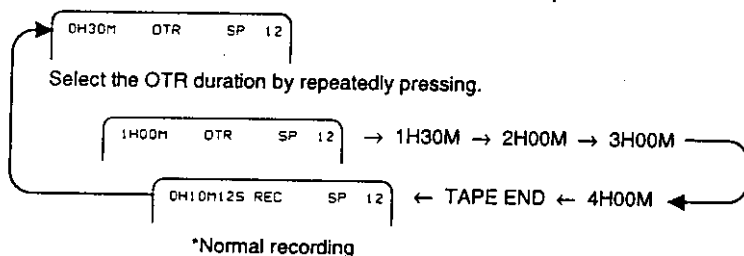


ENGLISH

One-touch Timer Recording (OTR)

This allows you to record for up to 4 hours with automatic turning off of the VCR.

1. during RECORDING.
2. to stop OTR.



! NOTE

- To watch another TV program while recording, press the **TV/VCR** button to clear the VCR indication, then tune the TV to the channel you want to watch.
- If the VCR is left paused for more than 5 minutes, it will automatically return to stop mode to prevent damage to the tape.
- The recorded pictures on the tape may be distorted near where the **PAUSE** button is used. This is not a defect in the unit.
- In Pause mode during normal recording, it is possible to change the channel and/or tape speed.
- When a recorded tape is played back, noise bars may appear where the tape was paused, or stopped, during recording. This is normal and is not a malfunction.
- When OTR recording has finished, the VCR will automatically switch to Timer Recording Standby mode if there is any Timer program data.
- The **PAUSE** button and **SP/EP** button cannot be used when OTR is being executed.

PROGRAMMABLE TIMER RECORDING

The programmable timer recording allows you to record up to 8 different programs within a period of 1 month. This function is convenient when you are away from home or when you are busy.

PREPARATION

- Check that the current time is correct.
- Insert a cassette with the safety tab.

EXAMPLE

Current time ...
August 20, 1998, 10:20 AM
To program ...
August 23, 1998, 7:30 PM-8:25 PM CH 45, SP mode on data set line 2.

Basic key functions

- : Select the data of each position (blinking position)
- : Move the CURSOR
- : Press to clear all data during programming.

Program procedure

1. →

TIMER PROGRAM						
P	CH	DATE	START	STOP	S	
1						
2						

2. →

P	CH	DATE	START	STOP	S	
1						
2	45					
3						
4						

ONCE ☒ WEEKLY ☐ DAILY ☒

DATA SET LINE
CHANNEL

3. →

P	CH	DATE	START	STOP	S	
1						
2	45	23				

EXECUTION MODE
RECORDING DATE

4. →

P	CH	DATE	START	STOP	S	
1						
2	45	23	7:30	8:25	PM	

START TIME
AM or PM

5. →

P	CH	DATE	START	STOP	S	
1						
2	45	23	7:30	8:25	PM	
3						
4						

SP=1 MP=2

END TIME
AM or PM

6.

TIMER PROGRAM						
P	CH	DATE	START	STOP	S	
1						
2	45	23	7:30	8:25	PM	

RECORDING SPEED

7. 2 to 4 seconds (until Timer set indicator illuminates) to set the TIMER STANDBY.



To release

2 to 4 seconds (until Timer set indicator disappears) to release the TIMER STANDBY.

Disappears



In step 3, select the desired mode as follows.

ONCE : On a particular day.

→ →

Example

DAILY : At the same time Monday to Friday.

→

WEEKLY : At the same time on the same day of the week.

→

→

Example

Confirming the Data

• During Standby mode

 to display the PROGRAM screen.
Press again to resume.

• During EXECUTION

 →  to display the PROGRAM screen.
Press again to resume.

Clearing the Data

1.  2 to 4 seconds (until Timer set indicator disappears) to release the TIMER STANDBY.

2.  to turn on the POWER.

3.  →  to select the PROGRAM screen.

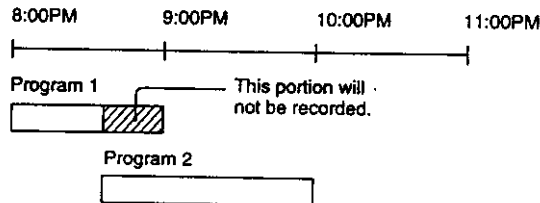
4.  -  to select the DATA SET LINE to be cleared.

5.  to clear all DATA.

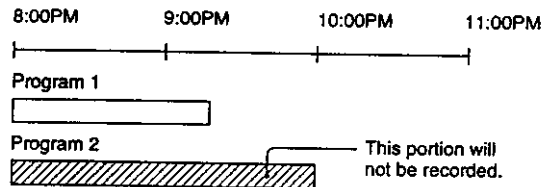
Notes on Timer Settings

Program priority

- When two or more recording schedules overlap:



- When the start time for two or more recording schedules are the same:



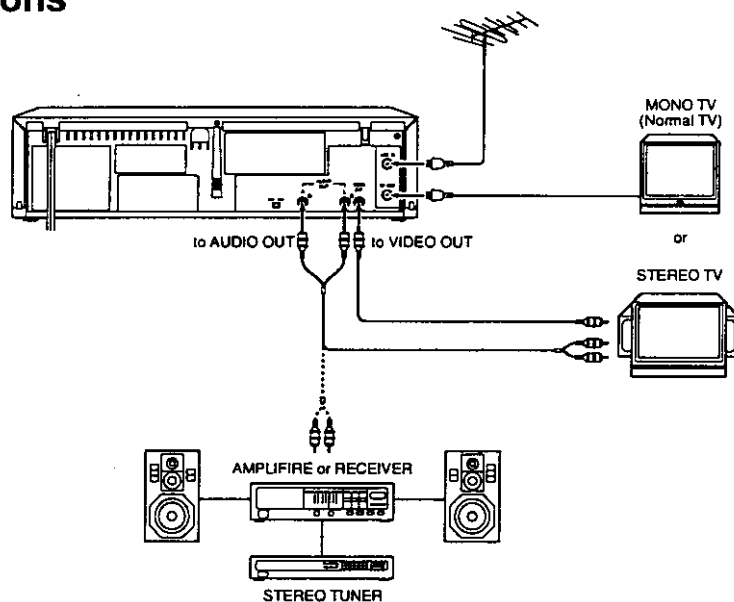
! NOTE

- If you want to quit programmable timer recording during execution, press the **POWER** button for more than 3 seconds until the recording is finished.
- With the end of tape (include OTR), it is ejected.

ENGLISH

MTS BROADCAST/VHS Hi-Fi AUDIO

Connections



VHS Hi-Fi VCRs record and playback two kinds of audio tracks: Hi-Fi stereo tracks (left and right) and a normal (linear) audio track.

- The Hi-Fi tracks contain two separate signals (for example, the left and right channels of a stereo program or the main and second SAP* signals).
- The normal (linear) track is recorded and played back monaurally.

This VCR allows multichannel sound broadcasts (stereo and SAP* programs) to be received and recorded, as well as regular, non-stereo TV programs.

* MTS broadcasts may contain an optional SAP (Second Audio Program) soundtrack. The SAP portion of a broadcast can be used for a second language soundtrack that is related to the main program sound or another soundtrack that is not related to the video portion of the program.

MTS: Multi-channel Television Sound broadcast. A SAP (second audio program) broadcast may be received at the same time.

SAP: Second Audio Program broadcast.
A separate audio program, usually broadcast in a second language as well as the main language.

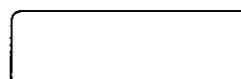
Hi-Fi: Stereo sound recorded on the Left and Right audio tracks on the video portion of a tape.

MONO: Normal sound recorded on the linear, monaural track in addition to the left and right Hi-Fi tracks.

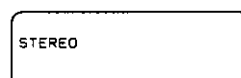
MTS Indicators

The following are possible combinations of broadcasts with their accompanying on-screen displays.

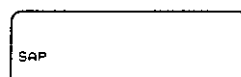
MONO broadcast



MTS Stereo broadcast



SAP broadcast



MTS Stereo + SAP broadcast



Selecting Audio Mode for Recording

According to your setting of "SAP" on the MENU screen, the sound is recorded onto different tracks of the tape as below. Set "SAP" to "YES" or "NO" appropriately.

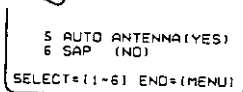
1.  to display the MENU screen.

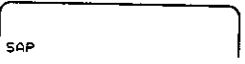


3.  to return to the normal TV screen.

4. Make a recording.

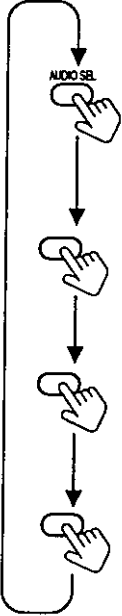
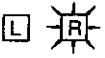
2.  to select SAP [YES] or SAP [NO].



Type of receiving broadcast	Setting of "SAP" on the MENU screen. 5 AUTO ANTENNA (YES) 6 SAP (NO) SELECT=11-61 END=(MENU)	On-screen display	Contents of recorded sound		
			Normal sound track (Mono)	Hi-Fi sound track	
				L	R
MONO	[YES] or [NO]		MONO	MONO	MONO
Stereo	[YES] or [NO]		MONO (Mixed)	STEREO	
MONO + SAP	[YES]		MONO	MONO	SAP
	[NO]		MONO	MONO	MONO
Stereo + SAP	[YES]		MONO	MONO	SAP
	[NO]		MONO (Mixed)	STEREO	

Audio Output Mode

- 
 during playback or while monitoring a TV broadcast to select the desired audio output mode.

	Multi-display	
		The left channel sound is heard from the left speaker and the right channel sound is heard from the right speaker. Use this setting to hear a stereo program or tape in stereo.
		Left channel sound is heard from both speakers. Use this setting to hear the left channel of a stereo program or the main audio of a program that contains an SAP soundtrack.
		Right channel sound is heard from both speakers. Use this setting to hear the right channel of a stereo program or the SAP soundtrack (if available).
		The sound from the normal audio track (mono or second audio) is heard from both speakers.

! NOTE

 button is invalid while monitoring a mono TV program or playing back a tape recorded in mono.

COPYING

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.

ENGLISH

Copying a VCR Recording

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

WARNING

Tapes can be copied and used only in accordance with the 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.

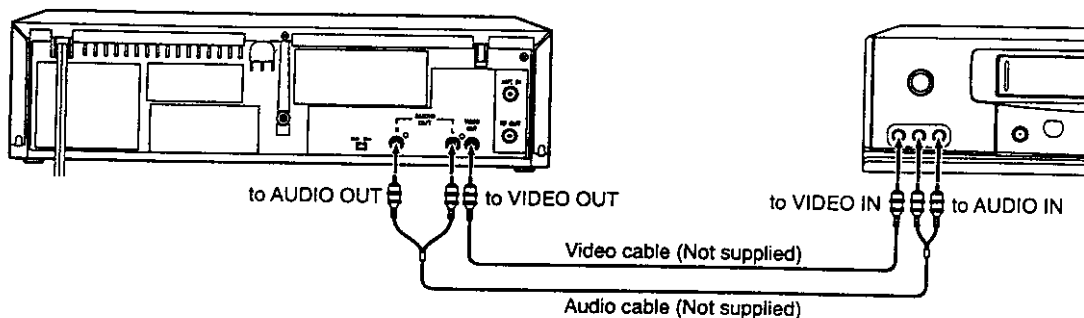
Using this VCR for Playback

1. **Recording VCR:** Press the record button, then the pause button to enter the recording pause mode.
2. **PLAY** to start playback.
3. **Recording VCR:** Cancel the recording pause mode to start recording.
4. **Both VCRs:** **STOP/REJ** of each VCR to stop recording. Copying is completed.

Using this VCR for Recording

1. **Q/AUX** TWICE.
2. **REC/OTR** → **PAUSE** to enter the recording pause mode.
3. **Playback VCR:** Press the **PLAY** button to start playback.
4. **PAUSE** again to cancel the recording pause mode and to start recording.

Connection



! NOTE

- When you use two of these VCRs for recording and playback, keep the VCRs away from each other so that both are not operated simultaneously by the remote control unit.
- In general, the picture quality deteriorates slightly in the dubbed tapes. It is best to use the SP mode.
- When monaural audio equipment is connected only to L/MONO of the AUDIO IN jack, the same sound is recorded on both L and R on the Hi-Fi track.

TROUBLESHOOTING GUIDE

Before Calling Service Personnel

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

SYMPTOM	REMEDY
No power supply to the VCR.	Connect the AC mains cord to the wall outlet.
Power is on but the VCR does not operate.	Dew condensation inside the VCR. Leave the VCR for about 2 hours with the AC mains cord connected.
Picture does not appear on the TV screen.	- 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. - Adjust antenna direction or use an optional antenna booster. - Check connections between the TV and the VCR and connect them correctly.
Poor picture or no picture on TV during playback or recording.	- Check the connection between TV and VCR, then connect them properly. - Have the video heads cleaned. - Adjust the manual tracking using the VCHA buttons. - The cassette tape is old and/or defective. - Make sure that "VCR" is selected in the multi-display and that the TV channel is set to 3 or 4.
Poor picture/playback from the VCR.	This is normal on Still/Picture Search/Slow playback mode and is not a fault condition.
The desired sound is not correct.	Set the AUDIO SEL button on the remote control unit.
The recording does not operate/complete.	- The safety tab of the cassette tape is removed. Cover the hole with adhesive tape. - The tape has run out during recording. Replace with another one with sufficient length. - More than one program has been preset within the same period. Reprogram the information.
No timer recording.	- The VCR is not ready for timer standby. Press the POWER button for 2 seconds to display the timer set indicator. - Set the clock to the current time. - Reprogram data correctly. - Make sure a cassette is in the VCR. - If the cassette does not have its safety tab, you must use another cassette or cover the hole with adhesive tape. - There has been a power failure. Reset the clock to the correct time if the time indication shows "12:00AM". Reprogram the timer. - The active channel is not tuned with the built-in tuner of the VCR. Select the channel on which the TV/CATV program is aired.
No remote control unit operation.	- The VCR is in timer standby mode. Press the POWER button for 2 seconds to clear the timer set indicator. - Use the remote control unit within the operation range. - Remove any obstacle between the remote control unit and the VCR. - Replace batteries with new ones. Insert them correctly.
The cassette is ejected immediately after it is loaded.	Remove the cassette and reload it carefully.
Correct indication does not appear in the multi-display.	Reinsert the power plug into the outlet after about one minute has elapsed since it was disconnected.

Specifications

ENGLISH

Power supply:	120 V AC, 60 Hz
Power consumption:	15 W
External dimensions:	370 x 95.5 x 271 mm (W.H.D)
Weight:	3.1 kg
Channels received:	VHF: Channels 1-13, UHF: Channels 14-69, CATV: Channels A7 - A1, A - CCC and 66 - 125
Antenna input/output terminals:	UHF/VHF: 75 Ω F type connector
Signal system:	Standard NTSC
Video Recording System:	2 rotary heads helical scanning system
Number of Video Heads:	4 heads
Audio Track:	1 track (Normal)
Recording/Playback Cassette:	2 channels (Hi-Fi Audio Sound)
	Recording: VHS VHS format (SP, EP)
	Playback: VHS VHS format (SP, LP, EP)
	Video cassette with VHS mark
Tape speed:	EP: 1.11 cm/s., SP: 3.34 cm/s., LP: 1.67 cm/s.
Video record/playback time:	EP: 480 min., SP: 160 min., LP: 320 min. (When T-160 video cassette is used)
Fast forward/rewind time:	Approx. 3 min. (when T-120 video cassette is used)
Video input:	1 V(p-p), 75 Ω , unbalanced, negative sync, pin jack
Video output:	1 V(p-p), 75 Ω , unbalanced, negative sync, pin jack
Audio input:	Line input: -8 dBV, more than 50 k Ω , pin jack
Audio output:	Line output: -8 dBV, less than 1 k Ω , pin jack
Audio frequency range (Hi-Fi):	20Hz-20kHz
Audio dynamic range (Hi-Fi):	85dB
Utilization conditions:	Temperature: 40°F to 106°F (5 to 40°C)
	Operating Humidity: 35% to 80% RH
VHF output:	Channel 3 or 4

Design and specifications are subject to change without notice.



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