

TOSHIBA


VHS Hi-Fi

Video Cassette Recorder

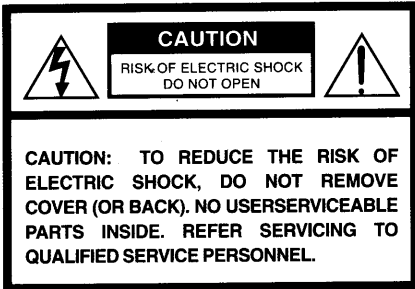
M-650

OWNER'S MANUAL



 This publication is printed on 100% recycled paper

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, 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.

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.

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 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.

ACCESSORIES

Antenna cable (1)
Remote control unit (1)
Batteries (AAA) (2)

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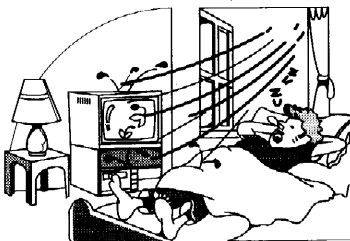
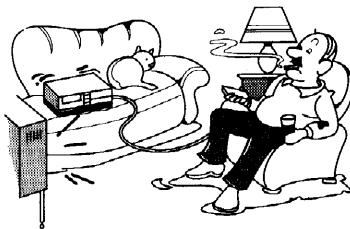
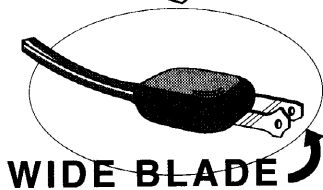
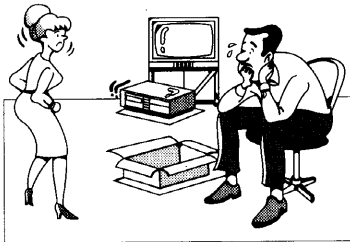
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IMPORTANT SAFEGUARDS

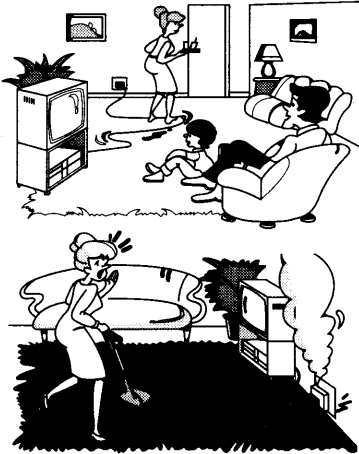
CAUTION: PLEASE READ AND OBSERVE ALL WARNINGS AND INSTRUCTIONS GIVEN IN THIS OWNER'S MANUAL AND THOSE MARKED ON THE UNIT. RETAIN THIS BOOKLET FOR FUTURE REFERENCE.

This set has been designed and manufactured to assure personal safety. However, improper use can result in 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 VOLTAGES. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



1. After unpacking this video product, read the owner's manual carefully, and follow all the operating and other instructions.
2. This video product should be operated only from the type of power source indicated on the marking labels. If you are not sure of the type of power supply to your home, consult your sales person or your local power company. For video products intended to operate from battery power, or other sources, refer to the operating instructions.
3. This video product is equipped with a polarized alternating current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
4. Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the video product and to protect it from overheating, 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.
5. Do not expose this video product to rain or use 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.
6. Unplug the video product from wall outlet before cleaning. Use only a soft damp cloth and never use benzene, thinner or other solvents for cleaning.

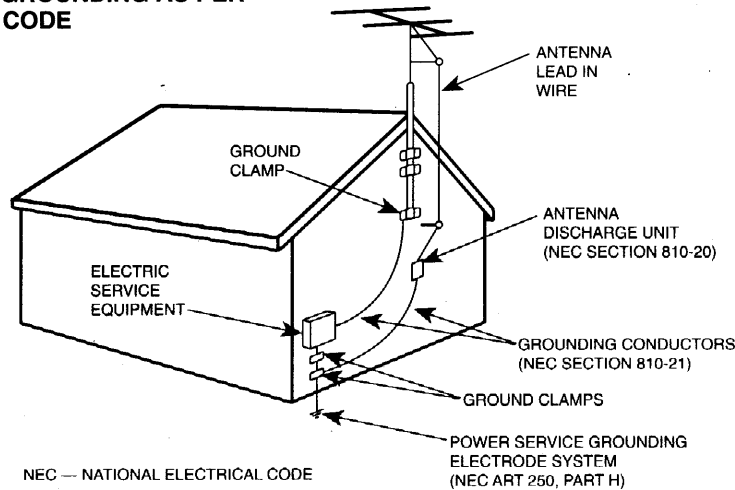


7. Do not allow anything to rest on the power cord. Do not locate this video product where the cord will be walked on.

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

9. 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 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.
- Use No. 10 AWG (5.3 mm²) copper, No. 8 AWG (8.4 mm²) aluminum, No. 17 AWG (1.0 mm²) copper-clad steel or bronze wire, or larger, as a ground wire.
 - Secure antenna lead-in and ground wires to house with stand-off insulators spaced from 1.22-1.83m (4-6 feet) apart.
 - Mount antenna discharge unit as close as possible to where lead-in enters house.
 - Use jumper wire not smaller than No. 6 AWG (13.3 mm²) copper, or the equivalent, when a separate antenna-grounding electrode is used. See NEC section 810-21 (j).

EXAMPLE OF ANTENNA GROUNDING AS PER NATIONAL ELECTRICAL CODE



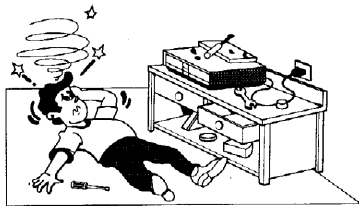
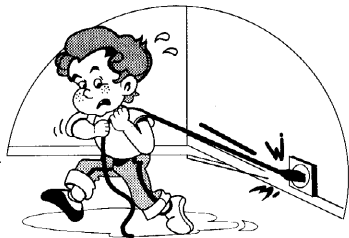
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10. An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system; extreme care should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



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

IMPORTANT SAFEGUARDS



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

13. Never push objects of any kind into this video product through openings 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.

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

15. Do not place this video product on an unstable cart, stand, tripod, bracket, or table. The video product may fall, causing serious injury 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.

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

- A. When the power-supply cord or plug is damaged.
- B. If liquid has been spilled, or objects have fallen into the video product.
- C. If the video product has been exposed to rain or water.
- D. If the video product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions 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.

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.

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

FEATURES

High Quality Picture

The HQ (High Quality) system produces superior VHS pictures.

High Quality Sound

- Hi-Fi sound with more than 90 dB dynamic range is produced by this VCR. You can also use this VCR as an audio deck.
- Stereo broadcast and MTS (Multichannel TV Sound) can be recorded on to a video tape.

Convenient Function

On-Screen Programming (OSP)

- The clock and timer recording programs can be easily set by the on-screen programming, using the remote control unit and the on-screen display.
- Up to 6 programs within a month can be preset for normal timer recording.
- The normal timer recording programs can be checked on the TV screen.

Auto Search Function (on-screen display)

You can easily locate a desired scene.

Index search: Plays back the tape during fast-forward or rewind for about 5 seconds at each section where the index signal has been registered.

Counter Function (on-screen display)

The tape counter indicates the elapsed or remaining time on the tape.

Linear time counter function: Shows the elapsed time on the tape in real time during recording, playback, etc.

Tape remain display function: Shows the remaining time on the tape in real time.

Auto Play

When a cassette without the safety tab is loaded, the following operations automatically start.

Auto playback: Plays back the tape automatically.

Auto rewind: Rewinds the tape automatically when the tape is played to the end.

Auto Speed Select

If the tape speed is set to AUTO in the timer program mode, the VCR checks the tape remaining time and the recording time that is programmed in the timer recording. If the tape remaining time is not long enough to record the program to the end, the VCR automatically changes the tape speed from the SP mode to the SLP mode.

Special Effects

Picture Search

Scans the programs in the fast forward or rewind mode, enabling you to monitor the picture.

Accel. Search

You can locate a desired scene much more quickly.

Still Frame

Freezes the picture temporarily during playback.

Frame Advance

Plays back the tape frame by frame.

Slow Playback

Plays back the tape at 1/7th or 1/15th of the normal playback speed.

Double-speed play back

Plays back the tape at twice the normal playback speed.

Simulcast Recording

Simultaneously records a TV program and its FM sound received through audio equipment connected to the VCR on the sound track of the tape.

Other Features

- **181 Channel Receivable FS (Frequency Synthesized) Tuner**
The FS tuner automatically selects all receivable channels such as those for UHF, VHF and CATV.
- **Multi-Brand Compatible Remote Control Unit**
The remote control supplied with your VCR is compatible with about 50 TV brands (ex. RCA, Magnavox, etc.). You can easily operate your TV with this remote control. However, it may not be compatible with some models depending on models.
- **High Speed Rewind/Fast Forward**

TV ANTENNA AND VCR CONNECTIONS

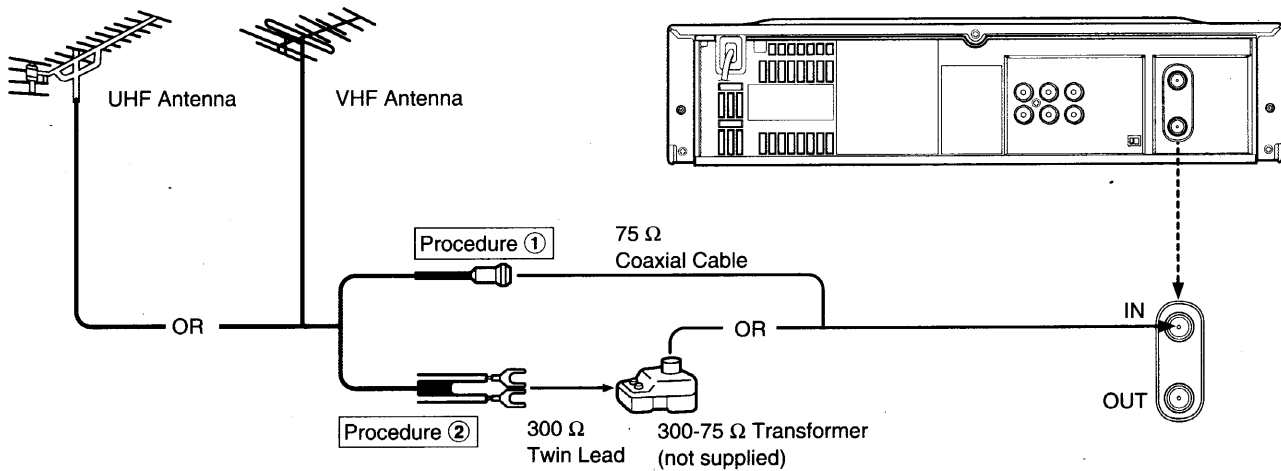
To connect the VCR to a VHF or UHF antenna (Fig. A-1), follow the steps below.

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

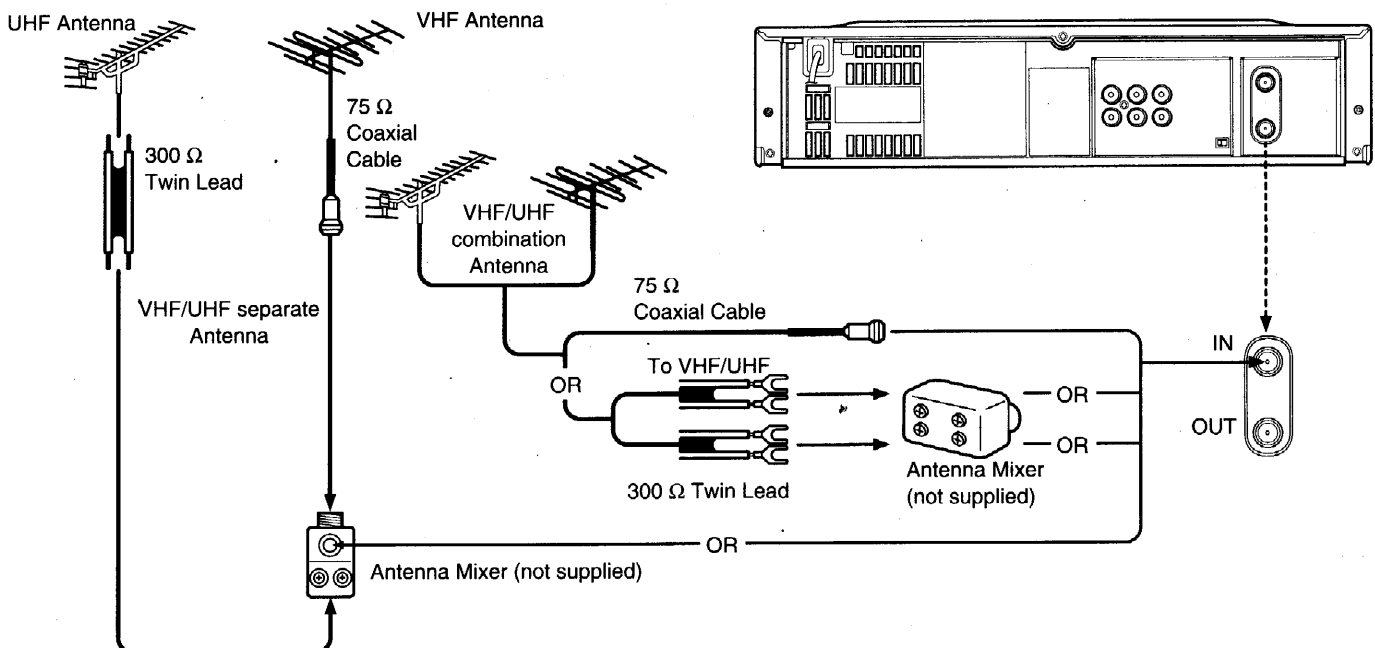
Note

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

[A-1] VHF or UHF Reception Areas



[A-2] Combined VHF/UHF Reception Areas (Using a VHF/UHF separate or combination Antenna)

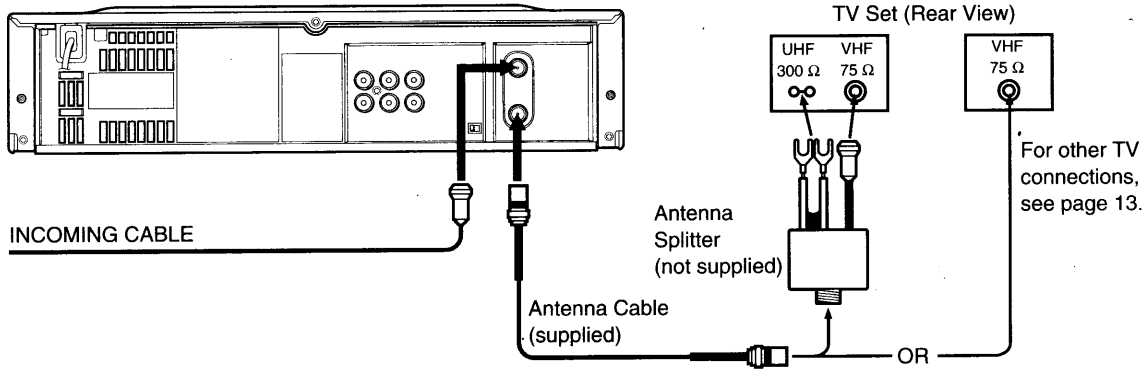


CABLE AND VCR CONNECTIONS

[B] When a Cable Box is not Required

[B-1] To record and watch the same unscrambled channel

You can connect a cable-compatible or normal TV.



This set-up will enable you to:

- record unscrambled cable channels
- record and watch the same unscrambled channel
- record an unscrambled channel while watching another (only when you connect a cable-compatible TV)

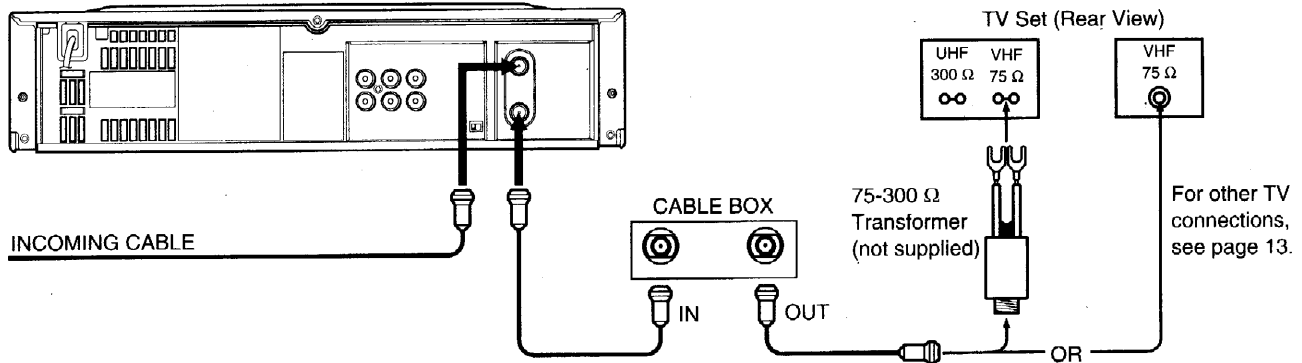
Notes

- Set the channel selector on the TV to the output channel of the VCR (channel 3 or 4). See page 21.
- To record one channel and watch another, press the TV/VCR button to turn off the VCR indicator and select the channel you want to watch on the TV (only when your TV is cable-compatible).

[B-2] To record an unscrambled channel and watch another channel (scrambled or unscrambled)

You need a cable box.

You can connect a cable-compatible or normal TV.



This set-up will enable you to:

- record unscrambled cable channels
- record and watch the same unscrambled channel
- record an unscrambled channel while watching another channel (scrambled or unscrambled)

Notes

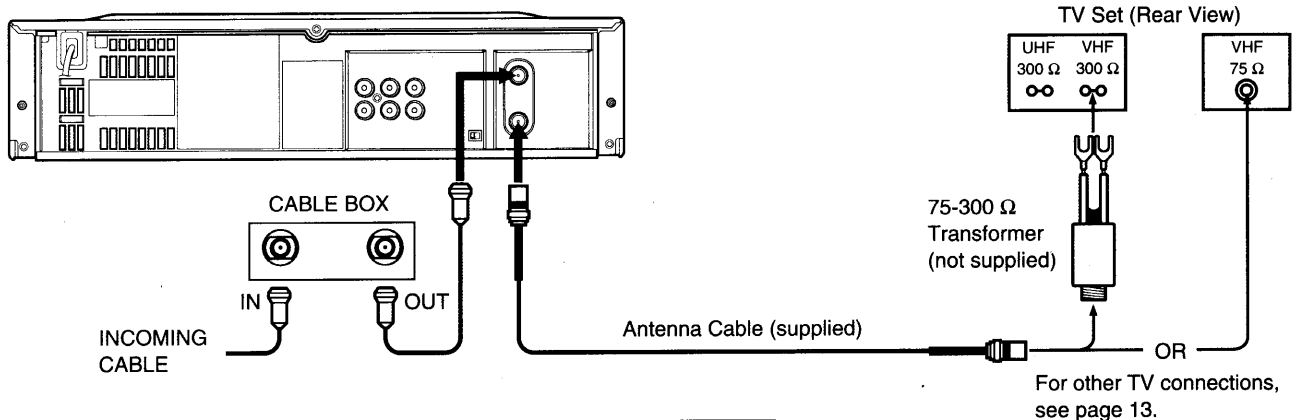
- This set-up does not allow you to record scrambled channels.
- The cable box must be ON and be set to the output channel of the VCR (channel 3 or 4). See page 21.
- Set the channel selector on the TV to the output channel of the cable box.
- To record an unscrambled channel and watch another channel, press the **TV/VCR** button to turn off the VCR indicator and select the channel you want to watch on the cable box.

CABLE AND VCR CONNECTIONS

[C] When a Cable Box is Required for All Channels

[C-1] To record and watch the same channel (unscrambled or scrambled)

You can connect a cable-compatible or normal TV.



This set-up will enable you to:

- record and watch the same cable channel (unscrambled or scrambled)
- record all cable channels through the cable box

Notes

- Set the channel selector on the VCR to the output channel of the cable box and select channels on the cable box. Set the channel selector on the TV to the output channel of the VCR (channel 3 or 4). See page 21.
- When the VCR is turned off or the VCR indicator is not lit on the multidisplay, set the channel selector on the TV to the output channel of the cable box.

Technical Terms

“Unscrambled” Cable Channels

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

“Scrambled” Channels

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

Cable Box (supplied by Cable Company)

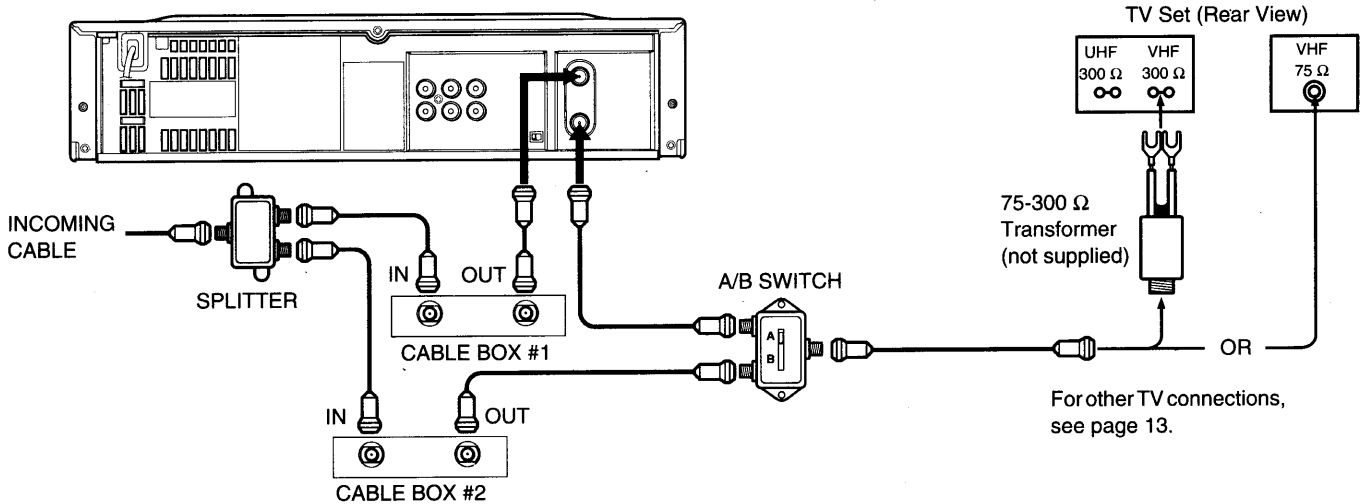
Until recently, all television and VCR receivers have been equipped with a 68 channel tuner capable of tuning in the 12 standard VHF channels (2-13) and the 56 UHF channels (14-69). Since cable television systems do not use the UHF band, once they began expanding beyond 12 channel capacity (some cable companies transmit up to 100 channels) some form of cable box became necessary to enable their subscribers to tune in the additional channels. This “cable box” rebroadcasts the programs to your TV set or VCR on one designated channel, usually Channel 2, 3, or 4. When you use a cable box, you will normally change channels using the channel selector on the box. Some cable boxes have a built-in decoder that translate “scrambled” pay TV channels (i.e.HBO) so they can be used by your TV set.

Frequency Conversion

This simply means the ability to change one frequency to another (e.g. when Channel 7 is selected, the cable box takes the Channel 7 information and outputs this on the Channel 3 frequency; when channel 11 is selected, channel 11 information is output on the Channel 3 frequency.) The cable box and the VCR both use this principle of frequency conversion.

[C-2] To record a scrambled or unscrambled channel and watch another

You need two cable boxes, a splitter and an A/B switch.
You can connect a cable-compatible or normal TV.



This set-up will enable you to:

- record all scrambled or unscrambled cable channels through the cable box
- record one channel while watching another channel (scrambled or unscrambled)

Notes

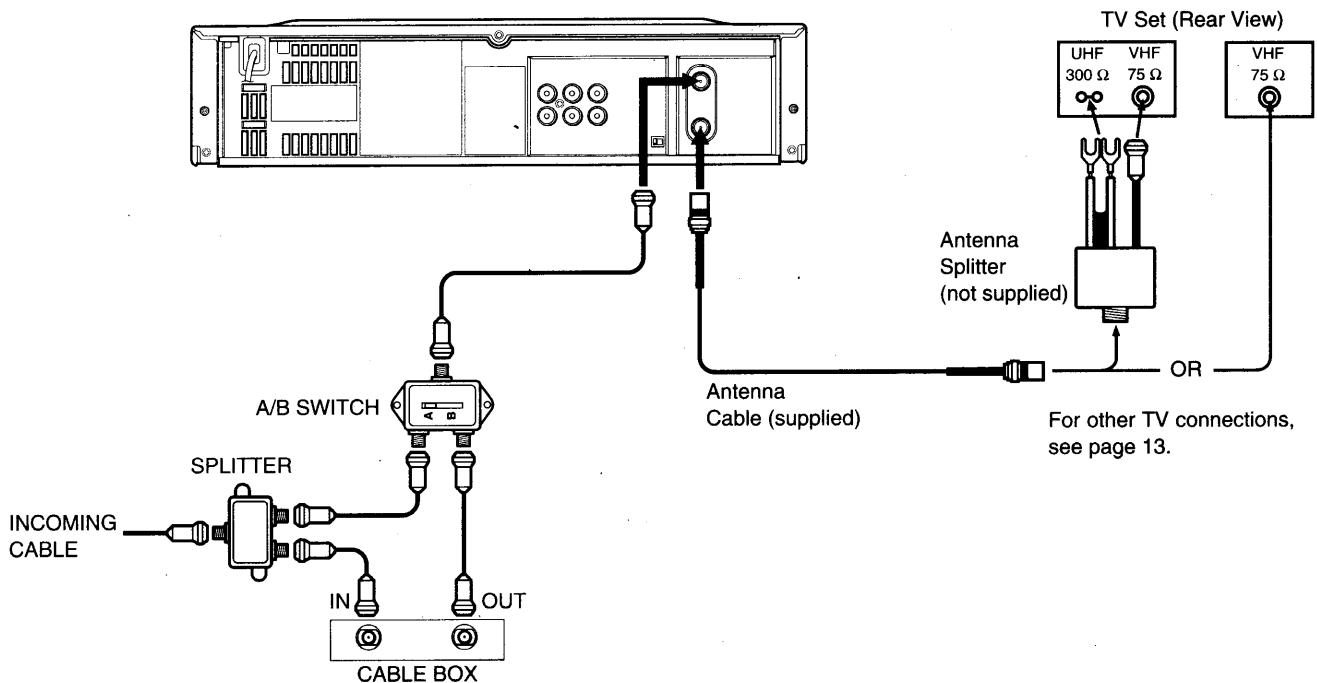
- The cable boxes must be ON.
- To record, set the channel selector on the VCR to the output channel of cable box #1 and select the channel on cable box #1.
- To watch the same channel on the TV, set the A/B switch to A and set the channel selector on the TV to the output channel of the VCR (channel 3 or 4). See page 21.
- To record one channel and watch another, set the A/B switch to B and select the channel you want to watch on cable box #2. Set the channel selector on the TV to the output channel on cable box #2.
- When the VCR is turned off or the VCR indicator is not lit on the multidisplay, you can set the channel selector on the TV to the output channel of cable box #1.

CABLE AND VCR CONNECTIONS

[D] When a Cable Box is Required Only for Some Channels

**[D-1] To record a scrambled or unscrambled channel and watch the same channel
To record an unscrambled channel and watch another**

You need a cable box, a splitter and A/B switch.
You can connect a cable-compatible or normal TV.



This set-up will enable you to:

- record and watch scrambled or unscrambled cable channels
- record an unscrambled channel while watching another unscrambled channel (only when you connect a cable-compatible TV)

To record and watch scrambled or unscrambled channels through the cable box

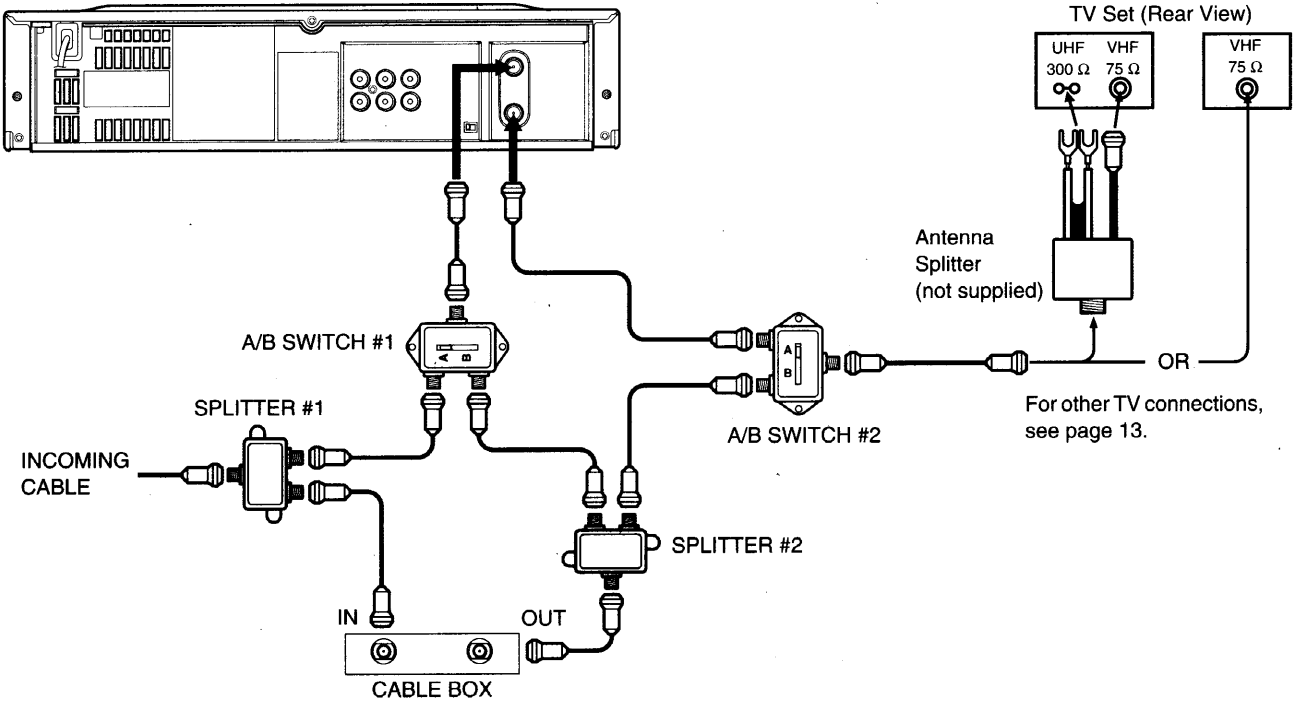
- Turn on the cable box and set the A/B switch to B.
- Set the channel selector on the VCR to the output channel of the cable box and select channels on the cable box.
- To watch the same channel on the TV, set the channel selector on the TV to the output channel of the VCR (channel 3 or 4). See page 21.

To record and watch unscrambled channels without passing through the cable box

- Set the A/B switch to A and select channels on the VCR.
- Set the channel selector on the TV to the output channel of the VCR (channel 3 or 4). See page 21.
- To record one channel and watch another, press the TV/VCR button to turn off the VCR indicator and select the channel you want to watch on the TV (only when your TV is cable-compatible).

**[D-2] To record a scrambled or unscrambled channel and watch the same channel
To record an unscrambled channel and watch another scrambled or unscrambled channel**

You need a cable box, two splitters and two A/B switches.
You can connect a cable-compatible or normal TV.



This set-up will enable you to:

- record and watch scrambled or unscrambled cable channels
- record an unscrambled channel while watching another scrambled or unscrambled channel

To record and watch scrambled or unscrambled channels through the cable box

- Turn on the cable box and set the A/B switch #1 to B.
- Set the channel selector on the VCR to the output channel of the cable box and select channels on the cable box.
- To watch the same channel on the TV, set A/B switch #2 to A and set the channel selector on the TV to the output channel of the VCR (channel 3 or 4). See page 21.

To record and watch unscrambled channels without passing through the cable box

- Set A/B switch #1 to A and select channels on the VCR.
- To watch the same channel on the TV, set A/B switch #2 to A and set the channel selector on the TV to the output channel of the VCR (channel 3 or 4). See page 21.
- To record one channel and watch another, press the TV/VCR button to turn off the VCR indicator, set A/B switch #2 to A and select the channel you want to watch on the TV (only when your TV is cable-compatible).

To record an unscrambled channel while watching another scrambled or unscrambled channel

- Set A/B switch #1 to A and select the channel you want to record on the VCR.
- To watch another channel on the TV, set A/B switch #2 to B and select the channel you want to watch on the cable box. Set the channel selector on the TV to the output channel of the cable box.

VCR AND TV CONNECTIONS

Connection to TV antenna terminals

Fig.1 VHF (75 Ω or 300 Ω) terminal connection

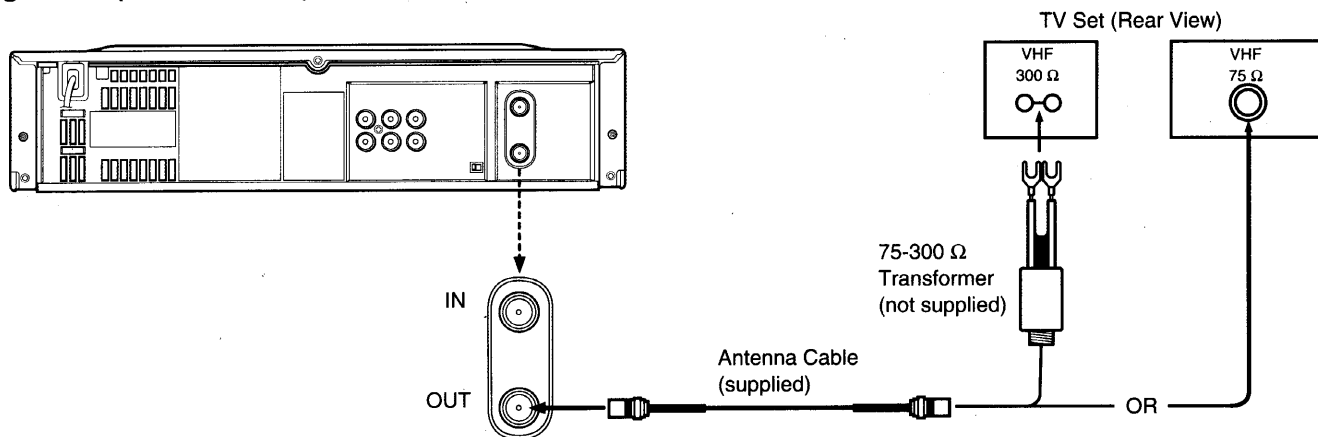
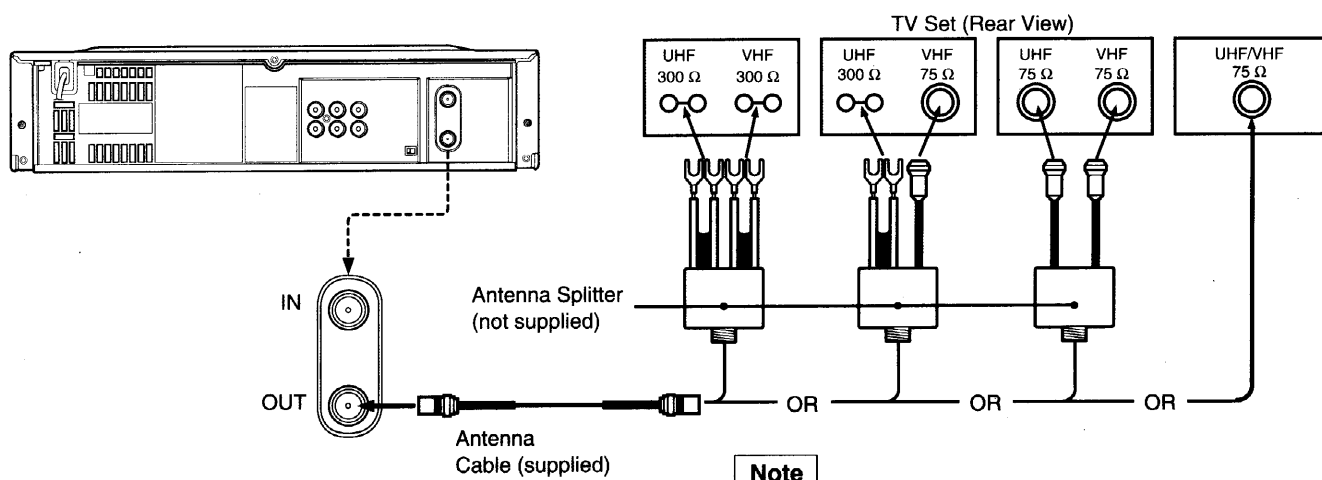


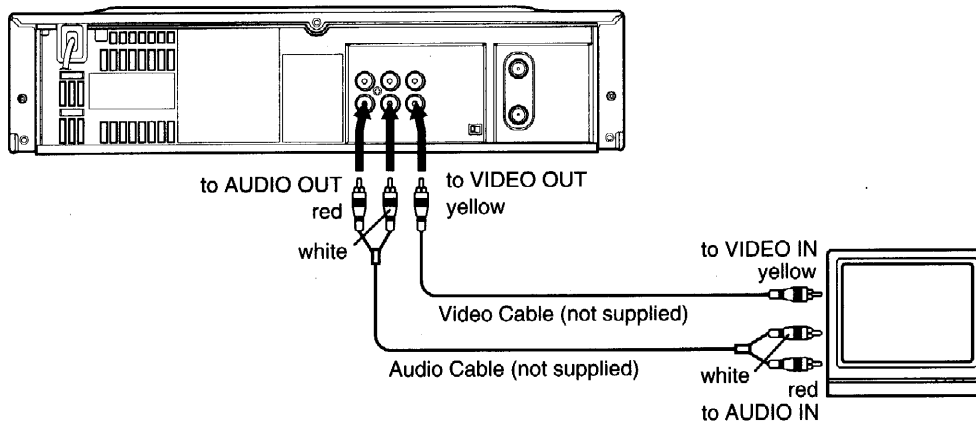
Fig.2 VHF/UHF (75 Ω/300 Ω or 300 Ω/300 Ω) or VHF/UHF (75 Ω) terminal connection



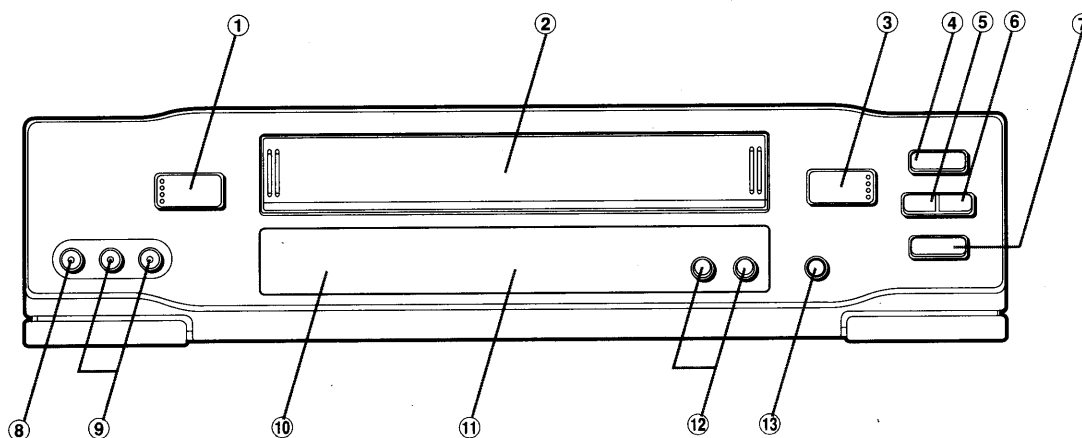
Note

An antenna splitter/mixer (VHF/UHF) is available from your local electronics store.

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



FRONT PANEL



① POWER button and indicators

To turn the unit on/off.

When the power is on, four indicators light.

The power is automatically turned on when a cassette is inserted into the compartment (Auto Power On).

② Cassette compartment

When a cassette is loaded, the power is automatically turned on.

When a pre-recorded cassette (without safety tab) is loaded, the power is automatically turned on to start playback (Auto Play function).

③ EJECT button (▲)

To eject the cassette, press this button in the stop mode.

④ PLAY button (▶)

- To start playback.
- To move the picture at twice the normal speed during playback.
- In the still mode to operate the frame advance function. Keep this button pressed in the still mode to playback at the 1/30 times normal speed.

⑤ REW button (◀◀)

- To rewind the tape during the stop, fast-forward or reverse picture search mode.
- To operate the reverse picture search during the playback, slow, still or forward picture search mode.

⑥ FF button (▶▶)

- To fast forward the tape during the stop, rewind or forward picture search mode.
- To operate the forward picture search during the playback, slow, still or reverse picture search mode.

⑦ STOP button (■)

Press this button to stop the tape.

⑧ VIDEO IN 2 jack

To record from an external video source, connect to the video output jack of an external video source such as a VCP, VCR or camcorder.

⑨ AUDIO IN 2 jacks (L/MONO, R)

To record from an external audio source, connect to the audio output jacks of an external audio source such as audio equipment, or a VCR, VCP, or camcorder.

⑩ Infrared remote control receiver

Picks up infrared light commands from the remote control unit.

⑪ Multidisplay

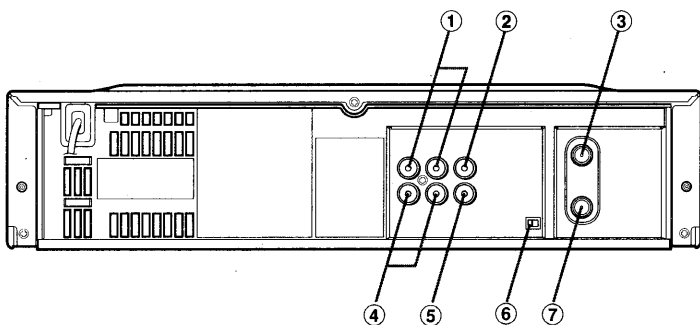
⑫ CHANNEL buttons (∇/∧)

- Press the ∇ button for sequential selection in the lower direction.
- Press the ∧ button for sequential selection in the upper direction.
- In the play or the slow mode, press these buttons to adjust the tracking manually.
- In the still mode, press these buttons to stabilize the picture manually.

⑬ REC button (●)

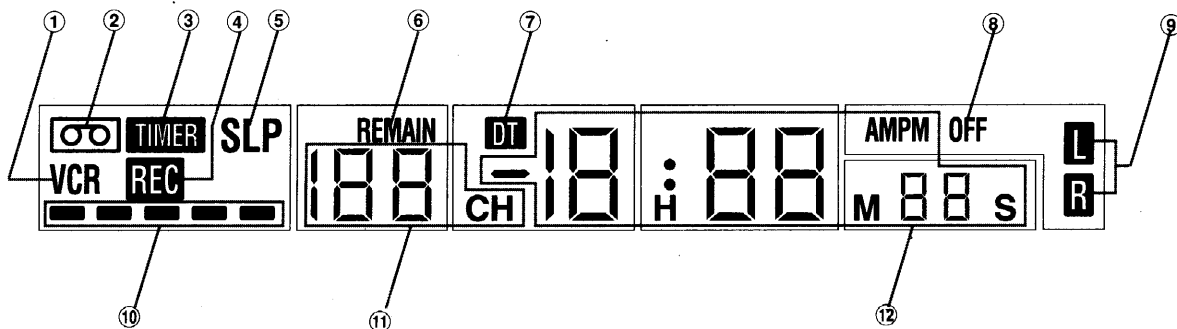
- To start recording.
- Press this button during recording to set the recording off time. (One Touch Recording)

REAR PANEL



- ① **AUDIO IN 1 jacks (R, L (MONO))**
To record from an external audio source, connect to the audio output jack of an external audio source such as an audio equipment, a VCR or a VCP.
- ② **VIDEO IN 1 jack**
To record from an external video source, connect to the video output jack of an external video source such as a VCR or a VCP.
- ③ **RF IN terminal**
Connect to the VHF antenna, UHF antenna or cable TV terminal.
- ④ **AUDIO OUT jacks (R, L)**
Connect to the audio input jacks of a TV or external audio equipment.
- ⑤ **VIDEO OUT jack**
Connect to the video input jack of a VCR or TV set.
- ⑥ **Output channel selector**
Select 3CH or 4CH, whichever is unused in your area, to transmit the signal from the VCR to the TV.
- ⑦ **RF OUT terminal**
Connect to the VHF or VHF/UHF input terminal of a TV.

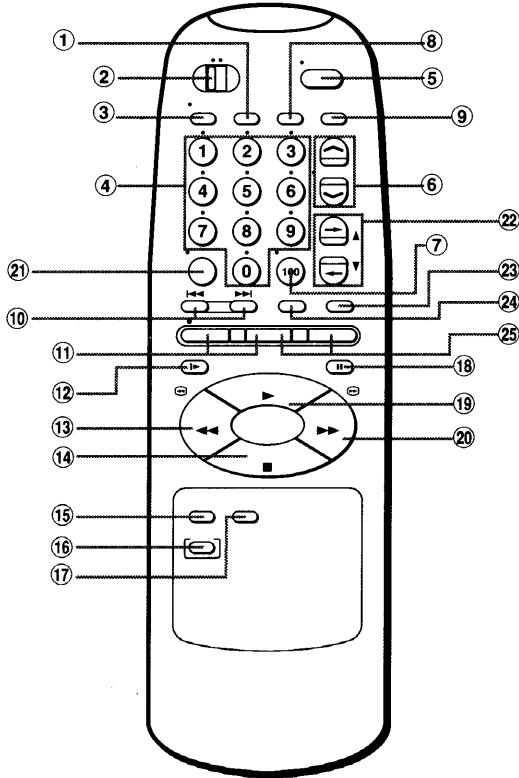
MULTIDISPLAY



- ① **VCR indicator**
Lights when the VCR mode is selected with the TV/VCR button on the remote control unit.
- ② **Cassette indicator**
Lights when a cassette is loaded, even when the power is off.
Blinks when a cassette is being inserted or ejected.
- ③ **TIMER indicator**
Lights when the **TIMER** buttons on the remote control unit are pressed.
- ④ **REC indicator**
Lights in the recording mode.
- ⑤ **Tape speed indicator (SP/SLP)**
SP: Lights in the SP mode.
SLP: Lights in the SLP mode.
- ⑥ **REMAIN indicator**
Lights when the tape remaining time is displayed.
- ⑦ **DT (digital tracking) indicator**
Lights in the auto tracking mode.
- ⑧ **OFF indicator**
Indicates the recording off time when you activate the One Touch Recording.
- ⑨ **L/R (left/right channel) indicator**
Lights when the **A. SELECT** button on the remote control unit is pressed.
- ⑩ **TAPE DIRECTION/SPEED indicators**
Indicates the direction and speed of the tape.
- ⑪ **Channel indicator**
Indicates the channel number currently being watched or recorded.
- ⑫ **Multifunctional indicator**
Indicates the clock, tape remaining time and linear counter display.

REMOTE CONTROL UNIT

The buttons that are not followed by explanations have the same functions as the buttons similarly marked on the VCR.



VCR Control Buttons

To operate this VCR, be sure to set the VCR/TV selector ② to VCR.

Preparation Controls

① TV/VCR button

To select the VCR tuner or TV tuner for reception. Set to VCR (the VCR indicator on the multidisplay lit) to watch the program being recorded.

Set to TV (the VCR indicator not lit) to watch normal TV programs or to watch a TV program while recording another program with the VCR.

② VCR/TV selector

To select the equipment to be controlled by this remote control unit.

- Set to VCR to control this VCR.
- Set to TV to control a TV (see page 19).

③ INPUT SELECT button

To select an input source to be recorded.

④ Number buttons (0 – 9)

- To select the channels. When selecting channels 1 through 9, press the 0 button and then the desired channel number button.
- Used for setting the clock or the programs in the OSP mode.
- Used to select one of the about 50 TV brand remote control codes (see page 19).

⑤ POWER button

⑥ CH/TRK (\wedge / \vee) buttons

- Used for sequential channel selection in the upper or lower direction.
- Used to adjust the tracking manually in the playback or the slow mode.
- Used to stabilize the picture manually in the still mode.

⑦ 100 button

- To select channel 100 or higher (see page 25).
- For channels 101 to 125, press this button and then the 0 – 9 buttons.
- Used for ENTER key.

REMOTE CONTROL UNIT

Playback and Recording Controls

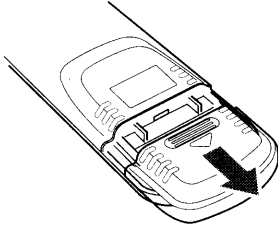
- ⑧ **COUNTER RESET button**
To reset the tape counter to zero.
- ⑨ **REMAIN/COUNTER button**
To select the clock, tape counter or tape remaining time indicator.
- ⑩ **INDEX (I◀◀/▶▶I) buttons**
 - To activate index search.
 - To mark an index signal.
- ⑪ **REC button (●)**
- ⑫ **SLOW button (I▶)**
To slow the picture to 1/7th or 1/15th of its normal playback speed. The two speeds alternate each time the button is pressed.
- ⑬ **REW button (◀◀)**
- ⑭ **STOP button (■)**
- ⑮ **SP/SLP button**
To select the recording tape speed, SP or SLP.
- ⑯ **EJECT button**
To eject a cassette.
- ⑰ **A. (AUDIO) SELECT button**
To select an audio source.
- ⑱ **PAUSE/STILL button (II)**
- ⑲ **PLAY/×2 button (▶)**
- ⑳ **FF button (▶▶)**

OSP Controls

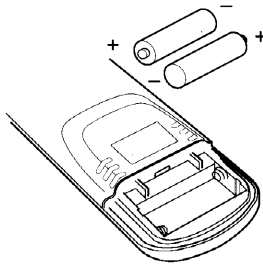
- ㉑ **DISPLAY button**
To turn on/off the on-screen display (tape operation mode, clock, counter, channel number, etc.).
- ㉒ **SHIFT/VOL buttons**
To shift the blinking cursor to the item you want to set when setting the channel, date, tape speed or recording ON/OFF time.
- ㉓ **PROG. button**
 - To switch the OSP mode on and off.
 - Used to select one of the about 50 TV brand remote control codes. (See page 19.)
- ㉔ **CANCEL button**
To cancel a timer recording.
- ㉕ **TIMER buttons**
Used for the last step when setting programs using the timer.

Battery Installation

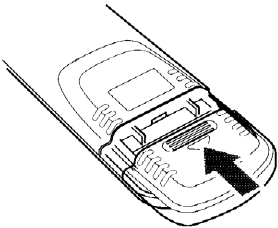
- 1 Remove the battery compartment lid on the rear of the unit.



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



- 3 Close the battery compartment lid.



Notes

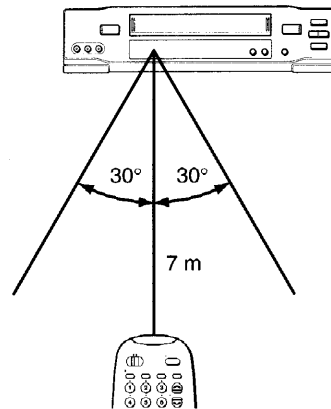
- Battery life is about 1 year. (The life depends on the conditions of use.)
- Replace both batteries when an operation is unstable or disabled.
- Remove the batteries when the remote control unit will not be used for a long time to safeguard against leaking battery acid.
- Do not dispose of the batteries by incineration.

When Handling the Unit

- For correct operation, press the buttons on the remote control unit at intervals of at least 1 second.
- Keep the unit away from heat and humidity and sources of electrical shock.
- Be careful not to drop or hit the remote control unit.
- Be careful not to spill water on the remote control unit or to place it on anything wet.
- Do not take the remote control unit apart.

Operating Range

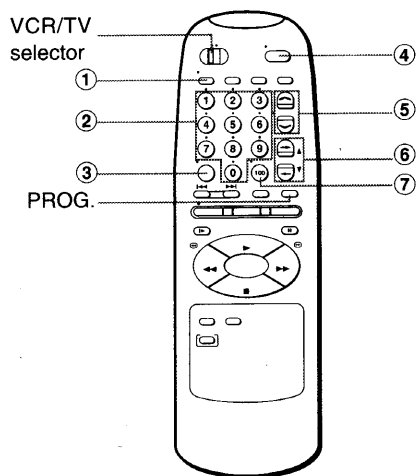
The remote control unit must have a "line of sight" to the infrared remote sensor on the front of the VCR. It must be within an angle of 30° on either side of a line perpendicular to the front panel. When you use the remote control unit while aiming it at the front of the VCR, the maximum operating distance is about 7m (within 30° of either side of the center, the effective operating distance is approximately 5m).



OPERATING A TV

The remote control unit can be used with up to about 50 TV brands (including TOSHIBA, RCA, GE, SONY, etc.). Remote control codes for a variety of TV brands have been programmed in this remote control unit. The TOSHIBA code has initially been set in the unit.

If your TV is not a TOSHIBA, you must first select a TV code for your brand of TV, referring to the "Table of TV codes" on next page.



Preparation

- Set the **VCR/TV** selector to TV.
- The table on next page shows the remote control code for each TV brand. Find the code number for your TV brand.

Selecting the TV code

While holding down the **PROG.** button, enter the two-digit code number which corresponds to your TV brand with the number buttons, as found in the table.

Example:

To select the code for an RCA TV

While holding down the **PROG.** button, press buttons **0** and **2** in sequence. The RCA TV is ready to be operated with the TV control buttons on the remote control unit.

Note

When the batteries are replaced, the remote control code switches back to the original code for a TOSHIBA TV. You will need to reset the code.

TV Control Buttons

Once the TV code is selected, you can operate your TV with this remote control by using the following buttons. Set the **VCR/TV** selector to TV when operating the TV.

- ① **INPUT SELECT button**
To select an external source, such as a VCR.
- ② **Number buttons (0 – 9)**
To select the channels.
When selecting channels 1 through 9, press the **0** button and then the desired channel number.
- ③ **DISPLAY button**
To turn on/off the TV's on-screen displays.
- ④ **POWER button**
To turn the TV on or off.
- ⑤ **CH/TRK (\wedge/\vee) buttons**
Used for sequential channel selection in the upper or lower direction.
- ⑥ **SHIFT/VOL buttons**
To adjust the sound level.
- ⑦ **100 button**
Used for ENTER or 100 channel key.

Notes

- Buttons marked with an orange dot are compatible with a TV.
- Depending on the TV you use, this function may not be compatible with your set. In this case, use the remote control unit that comes with your TV.

Table of TV codes

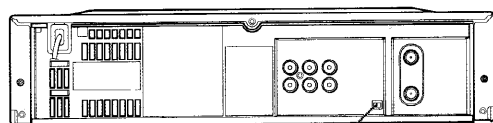
BRAND NAME OF YOUR TV	BRAND TYPE NUMBER (S)	BRAND NAME OF YUR TV	BRAND TYPE NUMBER (S)
BELL & HOWELL	09	PENNY	01
CARVER	10	PHILCO	10
CITIZEN	12	PHILIPS	03, 10
CURTIS MATHES	12	PROTON	11
EMERSON	11	PULSER	14
FISHER	09	QUASAR	07
FORTRESS	08	RADIO SHACK	13
GE	02, 07, 11	RCA	02
GOLDSTAR	11	REALISTIC	09
HALLMARK	11	RUNCO	14
HITACHI	06	SAMSUNG	12
INFINITY	10	SANYO	09
JBL	10	SEARS	01, 02, 09, 10, 11
JVC (VICTOR)	05	SHARP	08, 13
LXI	01, 02, 09, 10	SONY	03
MAGNAVOX	10	SOUNDESIGN	11
MARANITZ	10	SYLVANIA	10
MEMOREX	09,11	TANDY	08
MGA	04, 11	TECHNICS	07
MITSUBISHI	04, 11	TEKNIKA	04, 12
MTC	12	TMK	11
NAD	01	TOSHIBA	01, 09, 12
OPTONIGA	08, 13	VIDTECH	11
PANASONIC (NATIONAL)	07, 10	WARDS	10, 11, 13
PENNEY	02, 12	ZENITH	14

PARTS IDENTIFICATION

SETTING THE VCR OUTPUT CHANNEL

Set the output channel selector on the rear panel to the vacant channel in your area, 3CH or 4CH.

Slide the output channel selector to 3CH or 4CH.



Output channel selector

Notes

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

USING THE TV/VCR BUTTON (on the remote control unit)

Use this button to select the TV mode or VCR mode

TV Mode (using the TV tuner)

- 1 Turn on the TV. There is no need to turn on the VCR.
- 2 Select the desired channel using the channel select buttons on the TV.

Note

If the VCR is on and the "VCR" indicator lights on the multidisplay, press the **TV/VCR** button so that the indicator goes off.

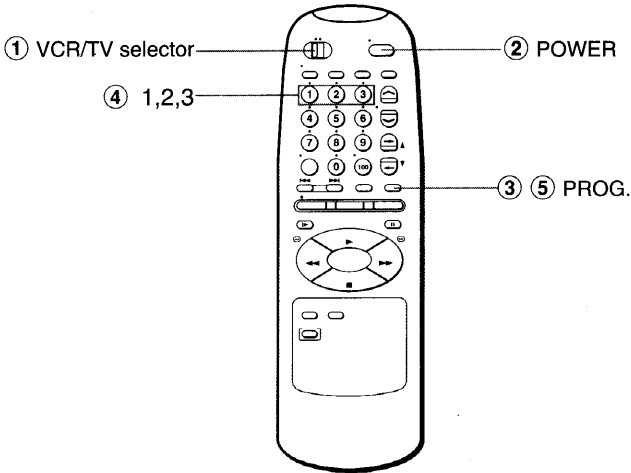
VCR Mode (using the VCR tuner)

- 1 Turn on the TV and select the VCR output channel, 3CH or 4CH.
- 2 Set the **VCR/TV** selector on the remote control unit to VCR.
- 3 Turn on the VCR.
The power indicators light up.
- 4 Set the VCR to the VCR mode with the **TV/VCR** button.
The "VCR" indicator will light on the multidisplay.
- 5 Select the desired channel with the **CHANNEL** ∇/\wedge buttons on the VCR or the number buttons on the remote control unit.
The program of the selected channel will appear on the TV screen.

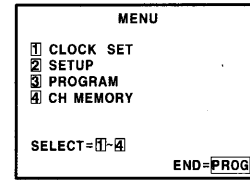
PRESETTING THE LANGUAGE

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, setup setting etc. LANGUAGE setting is required when 12:00 blinks in the multidisplay after the VCR is first connected to an AC power source or after a power failure has occurred.



- To set the language to ENGLISH, press the 1 button. The display changes to the MENU screen.



Now the language setting is completed. The MENU screen is used in the following cases. For details, see the corresponding page.

- 1 CLOCK SET : see page 24.
- 2 SETUP : see page 23.
- 3 PROGRAM : see page 36.
- 4 CH MEMORY : see page 25.

- To return to the normal TV screen, press the **PROG.** button.

Note

To change the language setting, see "SETUP screen" on page 23.

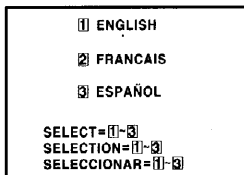
Example: To set the LANGUAGE to ENGLISH.

Preparation

Turn on your TV.

Operation

- Set the **VCR/TV** selector to VCR.
- Press the **POWER** button to turn the VCR on. The normal TV screen appears.
- Press the **PROG.** button to enter the presetting mode. The LANGUAGE screen appears.



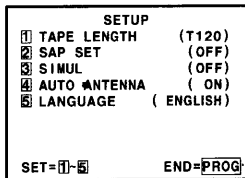
If the MENU screen appears instead of the LANGUAGE screen, the language presetting has been already programmed. You may skip this page.

SETUP SCREEN

The SETUP screen is used for setting TAPE LENGTH, SAP SET, SIMUL, AUTO ANTENNA and LANGUAGE.

To display the SETUP screen, perform the following steps.

- 1 Press the **PROG.** button on the remote control unit to display the MENU screen.
- 2 Press the **2** button on the remote control unit to display the SETUP screen.



- 3 Set the following items in the order given.

- | | | |
|---|--------------|-----------------------|
| 1 | TAPE LENGTH | : see page 32. |
| 2 | SAP SET | : see page 40. |
| 3 | SIMUL | : see page 42. |
| 4 | AUTO ANTENNA | : see below. |
| 5 | LANGUAGE | : see the note below. |

Note

To change the language setting mode, press the **5** button. Each time the button is pressed the language setting mode changes as follows:

ENGLISH → FRANCAIS → ESPAÑOL
↑

- 4 Press the **PROG.** button twice after setting to return to the normal TV screen.

AUTO ANTENNA

To watch TV programs via the TV tuner after playback, set the VCR to the TV mode using the **TV/VCR** button.

Auto Antenna Setting

- 1 Set the **VCR/TV** selector on the remote control unit to VCR.
- 2 Turn on the VCR.
- 3 Press the **PROG.** button on the remote control unit so that the MENU screen appears.
- 4 Press the **2** button so that the SETUP screen appears.

- 5 Press the **4** button to set AUTO ANTENNA to "ON" to receive a TV broadcast via the TV tuner after playback. If the "VCR" indicator lights on the multidisplay, press the **TV/VCR** button to turn off the indicator.

Now the auto antenna setting is completed.

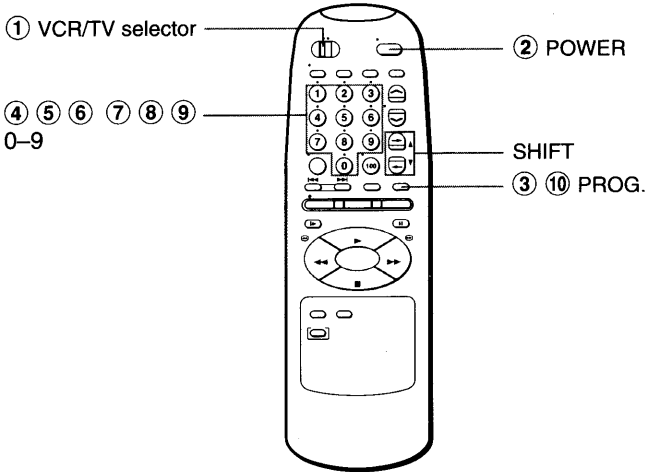
- 6 Press the **PROG.** button twice to return the TV to the normal screen.

Note

If your TV has audio/video terminals and the VCR is connected to them, set AUTO ANTENNA to "OFF" at step 5.

SETTING THE CLOCK

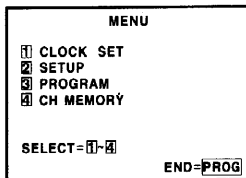
Clock setting is a simple operation. If 12:00 blinks on the multidisplay when the VCR is first connected to an AC power source or after a power failure, clock setting is necessary.



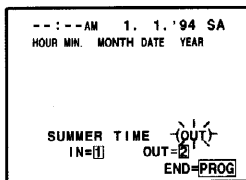
Example:

To set the clock to 8:30PM on October 8 (summer time), 1994

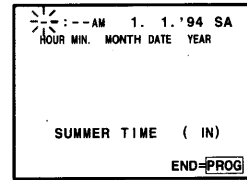
- ① Set the **VCR/TV** selector to VCR.
- ② Press the **POWER** button.
- ③ Press the **PROG.** button.
The MENU screen appears on the TV screen.



- ④ To select the **CLOCK SET** screen, press the **1** button.

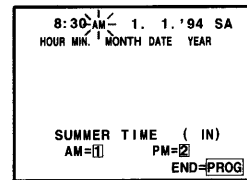


- ⑤ To set it for summer (daylight saving) time, press the **1** button to select "SUMMER TIME IN".



- To set it for regular time, select "OUT" with the **2** button.

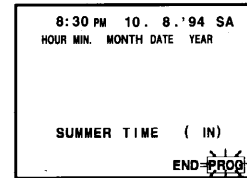
- ⑥ To set the hour and minutes, press the **0, 8, 3** and **0** buttons. (Pressing **0** is necessary.)



- ⑦ To select **PM**, press the **2** button. (To select "AM", press the **1** button.)

- ⑧ To set the month and day, press the **1, 0, 0** and **8** buttons.

- ⑨ To set the year, press the **9** and **4** buttons.



Now the clock setting is completed.

- The day of the week is automatically set according to the built-in calendar.

- ⑩ Press the **PROG.** button.
Now the clock starts.
The TV screen returns to the MENU screen.

To return to the normal TV screen, press the **PROG.** button again.

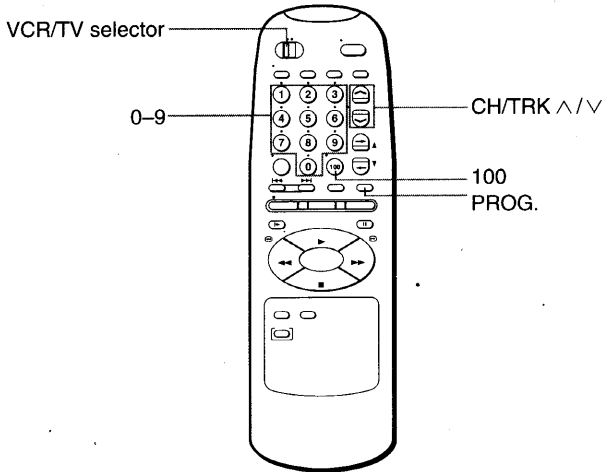
Notes

- When correcting during clock setting, use the **SHIFT** buttons so that the item to be corrected blinks. Then correct the blinking item using the **0** to **9** buttons.
- Each time the summer time period starts and ends, reset the "SUMMER TIME ()" column in step ⑤.
- When correcting the clock after setting, select **CLOCK SET** from the MENU screen and perform steps ⑤ to ⑩.

OPERATING THE FS TUNER

This VCR has an FS (Frequency Synthesized) tuner and is designed to receive TV and CATV signals.

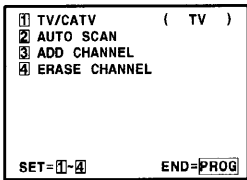
Before operation, make sure that the **VCR/TV** selector on the remote control unit is set to VCR.



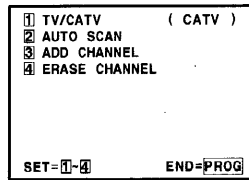
Selecting the TV/CATV Mode

- 1 Press the **PROG.** button.
The MENU screen appears on the TV screen.
- 2 Press the **4** button to select CH MEMORY.
- 3 Press the **1** button to select TV or CATV.

When TV is selected



When CATV is selected



- 4 Press the **PROG.** button twice to return the TV to the normal screen.

Selecting Channels

Using the number buttons (0 – 9)

Example 1: to select channel 4

- Press the **4** button. Channel 4 will be selected after approx. 2 seconds.
- Press the **0** and **4** buttons. Channel 4 will be selected immediately.

Example 2: to select channel 35

Press the **3** button, and within 2 seconds press the **5** button.

Example 3: to select channel 125

Press the **100** button, then the **2** and **5** buttons within 2 seconds.

Using the CH/TRK ^/v buttons

Press the **CH/TRK ^** button to select the upper channels or the **CH/TRK v** button to select the lower channels.

In the TV mode, channels 2 to 69 are selected each time the button is pressed.

In the CATV mode, channels 1 to 125 are selected each time the button is pressed.

The channel steps up or down and stops at the next active channel. It will not stop at inactive channels.

Presetting Active Channels into the Channel Memory

Using the auto scan function, the VCR scans through all receivable channels and stores only the active channels in your area into the memory. Once the active channels are preset, you can select a desired channel easily by using the **CH/TRK ^/v** buttons.

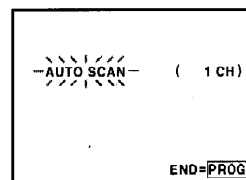
Important

The channel presetting procedure varies depending on the antenna/cable and VCR connections. Check your connections if you are using a cable converter box and/or A/B switch. The connection types are classified by A, B, C or D on pages 7–12.

- **For connection C:** You CANNOT preset the channels with auto scanning, since any channel comes in the VCR after it is converted into the output channel of the cable box. Select the channels on the cable box.
- **For connection D:** Before auto scanning, set the A/B switch to A (the position which is not connected to the cable box).

Auto scanning

- 1 Press the **PROG.** button.
The MENU screen appears on the TV screen.
- 2 Press the **4** button to select CH MEMORY.
- 3 Press the **1** button to select TV or CATV.
- 4 Press the **2** button to select AUTO SCAN.



"AUTO SCAN" is displayed on the TV screen and the VCR automatically scans channels 2-69 for TV or 1-125 for CATV. The VCR stores the active channels only into the memory. Scanning will stop when the VCR has scanned through all the channels and the channel memory screen will return.

- 5 When auto scanning is completed, press the **PROG.** button twice.

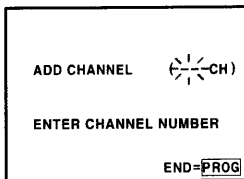
To cancel auto scanning midway

Press the **PROG.** button. The channel memory screen will return.

Adding a channel in the memory

An active channel may not be preset with the auto scan function because its signal is weak or it was not broadcasted during auto scanning. You can add the channel into the memory.

- 1 Press the **PROG.** button.
The MENU screen appears on the TV screen.
- 2 Press the **4** button to select CH MEMORY.
- 3 Press the **1** button to select TV or CATV.
- 4 Press the **3** button to select ADD CHANNEL.
ADD CHANNEL "--" blinks on the TV screen.



- 5 Select the channel you want to add using the **100** and **0** to **9** buttons.
The selected channel is added into the memory and the display will return to the channel memory screen.

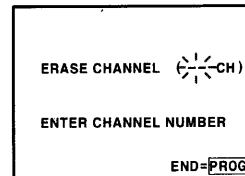
Note

When you select a one-digit channel number, input "0" before inputting the number.

Erasing a channel from the memory

An inactive channel may be preset with the auto scan function because there was noise on that channel during auto scanning. You can erase the channel from the memory.

- 1 Press the **PROG.** button.
The MENU screen appears on the TV screen.
- 2 Press the **4** button to select CH MEMORY.
- 3 Press the **1** button to select TV or CATV.
- 4 Press the **4** button to select ERASE CHANNEL.
ERASE CHANNEL "--" blinks on the screen.



- 5 Select the channel you want to erase using the **100** and **0** to **9** buttons.
The selected channel is erased from the memory and the display will return to the channel memory screen.

Note

When you select a one-digit channel number, input "0" before inputting the number.

Channel reference chart

Number on the VCR		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Corresponding channel number	TV	-	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	CATV STD (HRC/IRC)	1(A-8)	2	3	4	5 (A-7)	6 (A-6)	7	8	9	10	11	12	13	A	B	C

17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	AA	BB	CC	DD	EE	FF	GG	HH	II

46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71		93	94
46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	-	-		-	-
JJ	KK	LL	MM	NN	OO	PP	QQ	RR	SS	TT	UU	VV	WW	XX	YY	ZZ	AAA	BBB	65	66	67	68	69	70	71		93	94

95	96	97	98	99	100	101	102	103		121	122	123	124	125
-	-	-	-	-	-	-	-	-		-	-	-	-	-
A-5	A-4	A-3	A-2	A-1	100	101	102	103		121	122	123	124	125

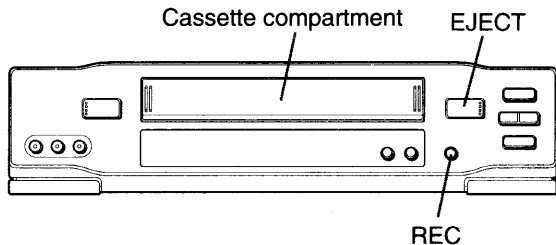
CATV signals

- STD (standard) cable TV signals
- HRC (Harmonic Related Carriers) cable TV signals
- IRC (Incremental Related Carriers) cable TV signals
IRC is also called ICC (Incremental Coherent Carriers).
- PHRC (Pivoted Harmonically Related Carriers) cable TV signals
- MPC (Multi Pivoted Carriers) cable TV signals

VIDEO CASSETTE USE

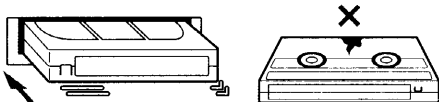
Only video cassettes with the **VHS** mark can be used with this VCR.


Unlike audio cassettes, only one side of a video cassette can be recorded on.



Loading a Cassette

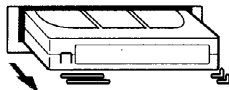
Insert a cassette into the cassette compartment with the window side facing upward. Push until the cassette is pulled into place. The power is automatically turned on when the cassette is inserted. (Auto Power On function)



- When the cassette indicator  lights up on the multidisplay, loading is completed.

Unloading a Cassette

Press the **EJECT** button when the tape is in the stop mode. The cassette will be ejected.



Notes

- The cassette indicator lights whenever a cassette is inside the compartment, even if the power is turned off.
- The cassette indicator flashes when a cassette is being loaded or removed.

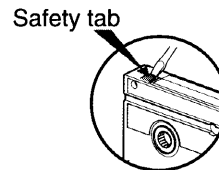
Warning

Do not insert your hand or any foreign object into the compartment. This may result in injury or damage. Take special care with children to avoid accidents.

Safety Tab

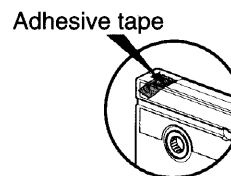
Preventing erasure of the recorded program

If the safety tab is removed from the cassette, recording cannot be performed even if the **REC** button is pressed. To prevent accidental erasure, remove the safety tab with a screwdriver.



Recording on the tape without the safety tab

Cover the tab hole with adhesive tape.



Tape Speed

Recording

The tape can be recorded at two different speeds, SP (Standard Play recorded at 33.4mm/s) or SLP (Super Long Play recorded at 11.1mm/s).

The SLP mode is more economical than the SP mode because its recording time is three times longer.

The SP mode, however, allows you to record or play back a tape with better quality than in the SLP mode.

Recording time

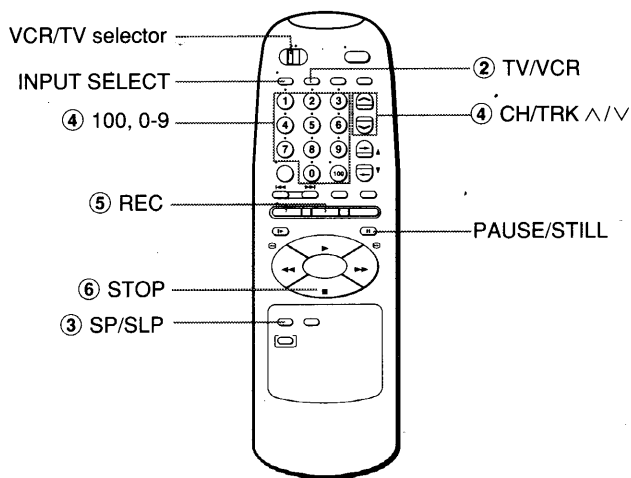
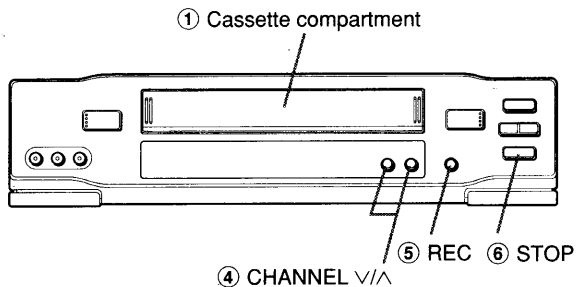
Video cassette / Recording mode	T-180	T-160	T-120	T-60	T-30
	SLP	540 min	480 min	360 min	180 min
SP	180 min	160 min	120 min	60 min	30 min

Playback

There are three possible speeds for playback, SP, LP and SLP. The appropriate speed will be automatically selected by the VCR.

RECORDING

Basic Manual Recording



Preparation

- Set the **VCR/TV** selector to VCR.
- Press the **INPUT SELECT** button to receive a TV channel. Each press of this button changes the source selection as follows:

TV (channel number) → line 1 (L1) → line 2 (L2)

when the source is selected, the multidisplay displays the source type as in the parenthesis above.

- Make sure you select TV or CATV mode on the "channel memory" screen program (see page 25).
- If you use a cable box, turn it on.

Operation

- ① Load a cassette with the safety tab. The VCR is automatically turned on.
- ② Press the **TV/VCR** button so that the VCR indicator lights up.
- ③ Press the **SP/SLP** button to select the recording tape speed.
- ④ Press the **CHANNEL** V/Δ buttons on the VCR (the **CH/TRK** Δ/V buttons on the remote control unit) or the number buttons to select the desired channel.
 - If you use a cable box, select the cable box output channel instead. Then on the box, select the channel you record.
- ⑤ Press the **REC** button on the VCR, or simultaneously press the **REC** buttons on the remote control unit.
- ⑥ Press the **STOP** button on the VCR or the remote control unit to stop recording.

Notes

- If you press the **REC** button on the VCR unit during recording, the unit will enter the OTR (One Touch Recording) mode. See page 29.
- Basic manual recording is possible only in the SP or SLP mode.
- If the VCR is in the pause mode for more than 10 minutes, it automatically enters the stop mode to protect the tape.
- To change the TV channels during recording, press the **PAUSE/STILL** button first.
- The pictures may be distorted around where the **PAUSE/STILL** button is used. This is not a malfunction.

Watching Another TV Program While Recording

- ① Press the **TV/VCR** button on the remote control unit to select the TV mode. The VCR indicator will go out.
- ② Select the desired channel using the channel select buttons on the TV.
- ③ Press the **TV/VCR** button when the TV program is finished. The VCR indicator will light up.
- ④ Set the TV channel to 3 or 4 according to the setting of the output channel selector.

Note

For connections see pages 7, 8, 10, 11 and 12.

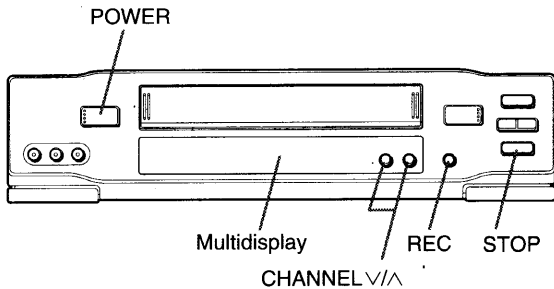
Skipping Unnecessary Scenes or Editing a Tape

To stop recording momentarily, press the **PAUSE/STILL** button on the remote control unit.
To resume recording, press the **PAUSE/STILL** button again.

RECORDING

One Touch Recording

One touch recording (OTR) function allows you to program the VCR to record TV programs. This function is convenient when you want to begin recording immediately up to 4 hours in 30 minutes increments.

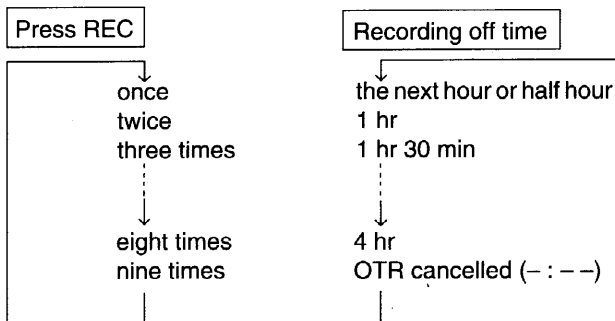


Preparation

Check that the current time is correct (see page 24).

Operation

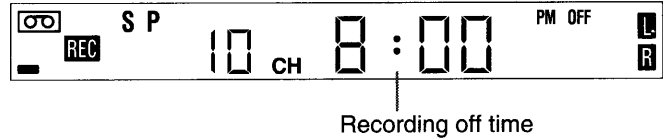
During recording, press the **REC** button on the VCR and program the recording off time. Each press of the button changes the off time as follows:



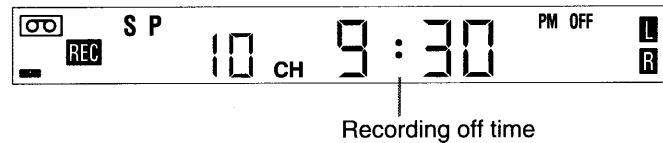
Example:

now it is 7:35 P.M. and you want to record until 9:30 P.M.

- Press the button once to display the next hour or half hour.



- Press the button four times



Notes

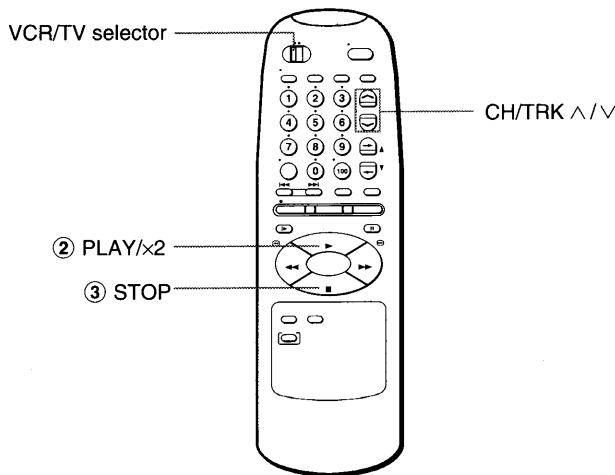
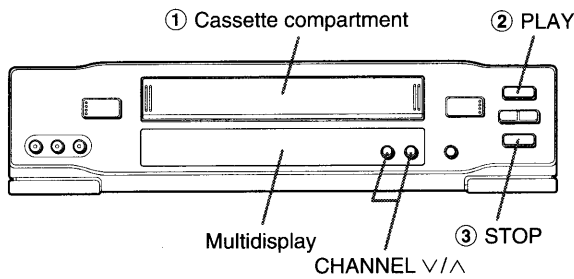
- To stop the one touch recording procedure, press the **STOP** button once.
- To extend the ending time while using the one touch recording, repeat steps above.
- Even when a recording is paused by pressing the **PAUSE/STILL** button, the unit doesn't stop counting time and turns off at the programmed time.

Important

- If you program the off timer incorrectly, cancel the off timer by pressing the **REC** button until "-:--" is displayed to cancel the programming mode once and repeat above.
- While the clock display is flashing, the one touch recording will not work. Reset the clock to let it work properly (see page 24).

PLAYBACK

Basic Playback



Before operation, make sure that the **VCR/TV** selector is set to VCR.

- ① Load the recorded cassette in the cassette compartment. The VCR is automatically turned on.
 - When a cassette without the safety tab is loaded, the auto play function operates to start playback automatically.
- ② Press the **PLAY/x2** (or **PLAY**) button. Playback starts.
- ③ Press the **STOP** button on the VCR or the remote control unit to stop playback.

Note

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

Adjusting the Tracking

Digital auto tracking

With the digital auto tracking function, the VCR automatically adjusts the tracking for a clear picture and sound during playback. Normally use the auto tracking adjustment mode. When playback starts, the digital auto tracking is automatically activated and the DT indicator blinks on the multidisplay. Tracking is set when DT stops blinking.

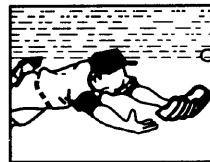
Notes

- While the DT indicator is blinking, the playback picture and sound may be distorted.
- The digital auto tracking is activated only in the playback

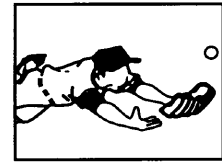
Adjusting the Tracking Manually

If you cannot obtain the best possible tracking point using the digital auto tracking function, adjust the tracking manually.

Press the **CH/TRK Δ/V** buttons on the remote control unit or the **CHANNEL V/Δ** buttons on the VCR so that you can obtain the best possible picture and sound.



A picture with noise bars



A picture adjusted with the **CH/TRK Δ/V** buttons

Notes

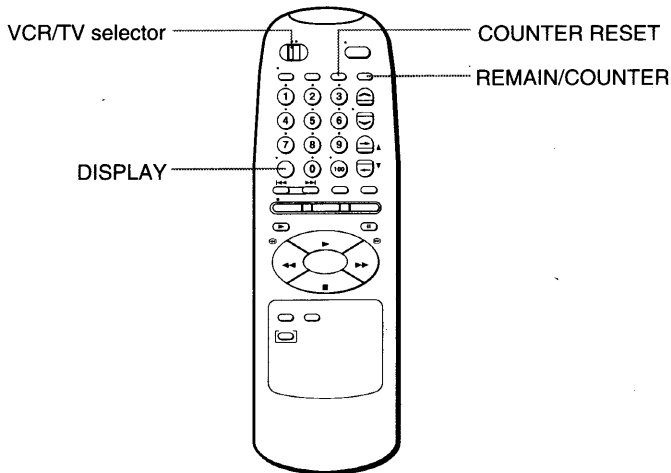
- To return the tracking point to the initial set point, simultaneously press the **CHANNEL V/Δ** buttons on the VCR for no longer than one second.
- To go back to the digital auto tracking adjustment, simultaneously press the **CHANNEL V/Δ** buttons on the VCR until the DT indicator blinks.
- Depending on the tape used the noise on the screen may not be completely adjusted especially when the tape has been recorded on another VCR.

COUNTER FUNCTION

Linear Time Counter Function

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

The linear time counter can be displayed on the multidisplay on the VCR and on the TV screen.



Before operation, make sure that the **VCR/TV** selector is set to VCR.

To display the counter on the multidisplay

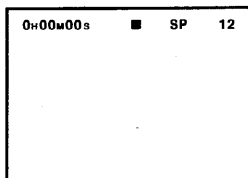
Load a video cassette tape.

If the clock is displayed on the multidisplay, it will change to the counter when the tape starts running in any operation mode.

To display the counter on the TV screen

Load a video cassette tape and press the **DISPLAY** button.

If the clock is displayed on the TV screen, it will change to the counter when the tape starts running in any operation mode.



- To display the counter only, press the **DISPLAY** button again.
- To return the TV to the normal screen, press the **DISPLAY** button twice.

To reset the counter to 0H00M00S

Press the **COUNTER RESET** button.

The counter is reset to zero and the previous counter reading is deleted from the memory.

If you start recording or playback with the counter reset to zero, later you can locate the recording/playback start point on the tape easily by searching for the counter zero point.

To change the counter display to the clock

Press the **REMAIN/COUNTER** button.

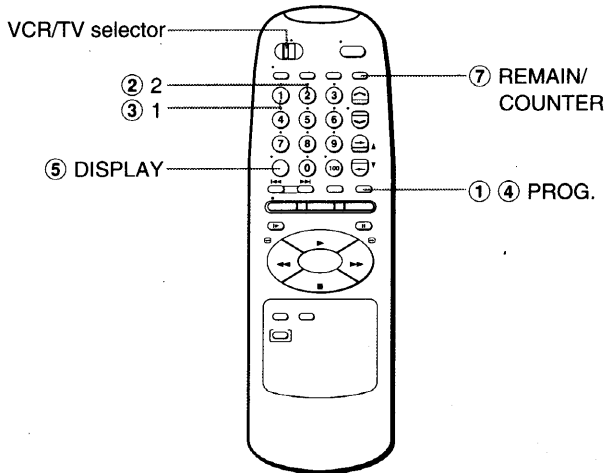
Pressing it once changes the display to the remaining time, twice to the clock, and three times to the counter.

Notes

- When the cassette is ejected, the counter is reset to 0H00M00S.
- The counter reading does not change at a non-recorded section of the tape.

Tape Remain Display Function

This function displays the tape remaining time on the multi display and TV screen.



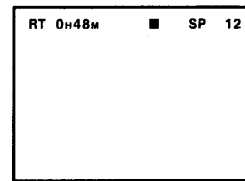
Calculation

- ⑤ Press the **DISPLAY** button for the display on the TV screen.
- ⑥ Load the cassette into the cassette compartment.
 - If the cassette safety tab is removed, playback starts automatically and the counter is displayed.
- ⑦ Press the **REMAIN/COUNTER** button to select "RT". Each time the button is pressed, the display changes as follows:
 Clock → Counter → Remaining time (RT)

The remaining time is displayed.

Example:

when the remaining time is 48 minutes and the tape is in stop mode



- To return the TV to the normal screen, press the **DISPLAY** button twice.

Before operation, make sure that the **VCR/TV** selector is set to VCR.

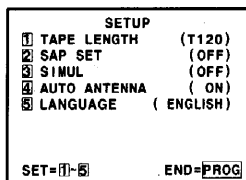
Tape setting

- ① Press the **PROG.** button to display the MENU screen.
- ② Press the **2** button to select the SETUP screen.
- ③ Press the **1** button to select the tape to be used.

T120: when using a T-120 tape or shorter
T160: when using a T-140 or T-160 tape
T180: when using a T-180

Each press of the **1** button changes the tape length setting as follows:

T120 → T160 → T180



- ④ Press the **PROG.** button twice to return the TV to the normal screen.

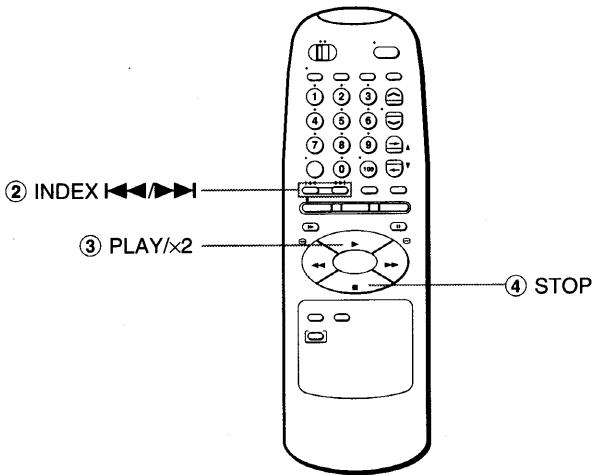
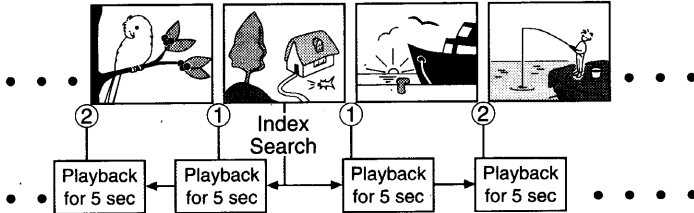
Notes

- The displayed remaining time is approximate time.
- During recording, the remaining time is calculated depending on the recording speed selected with the **SP/SLP** button, SP or SLP.
- During playback, the remaining time is calculated depending on the playback mode (SP, LP or SLP mode).

AUTO SEARCH

You can easily locate a desired program using the index signal registered on the tape.

Index Search: Plays back each program with an index signal for about 5 seconds



Registering Index Signals During Recording

Registering the index signals automatically

An index signal is automatically registered when a recording starts.

An index signal is also registered when one-touch recording or normal timer recording starts.

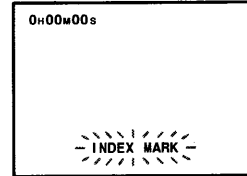
Note

An index signal is NOT registered automatically when the VCR is in the recording pause mode and recording restarts.

Registering the index signals manually

During recording, the index signals can be manually registered at desired points on the tape.

Press the **INDEX** ►► button during recording. "INDEX MARK" will blink on the TV screen.



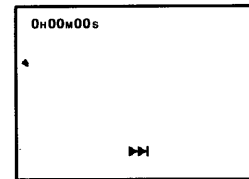
Note

When registering two or more index signals, certain intervals are required: more than 1 minute in the SP mode and more than 3 minutes in the SLP mode.

Index Search

This function plays back the tape for about 5 seconds at each index signal.

- ① Load a cassette with the index signals registered.
- ② Press the **INDEX** I<<< or ►► buttons while in the stop or playback mode.



- ③ Press the **PLAY/x2** button when the desired program is found. Normal playback begins.
- ④ Press the **STOP** button to stop playback.

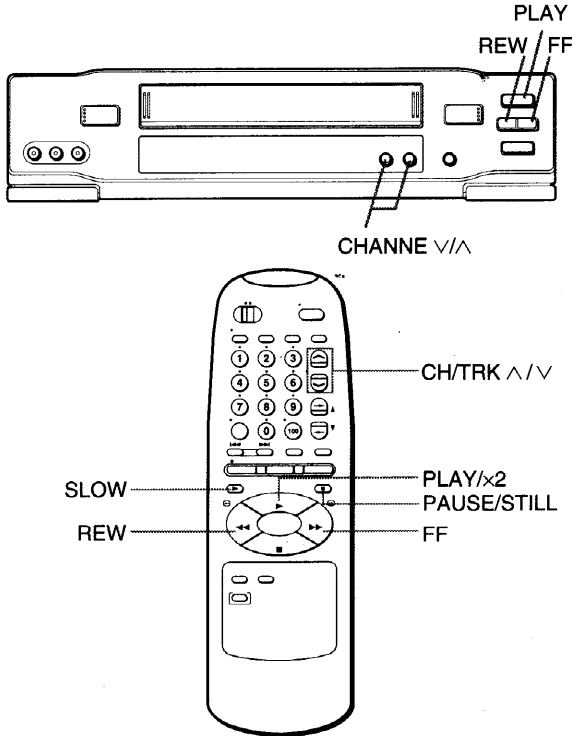
Notes

- If you registered the index signals on a tape recorded on another VCR, the recording may be blurred at the index point and the index search may not work correctly.
- The index signal registered on the beginning of the tape may not be detected.

SPECIAL EFFECTS

Picture Search

This function allows you to quickly locate a particular scene or segment on the tape while monitoring the playback picture in the fast forward or rewind mode.



Accel. search

When keeping the **FF** or **REW** button pressed during playback, the searching speed will be accelerated to 7 times (in the SP mode) or 21 times (in the SLP mode) the normal speed.

Forward picture search

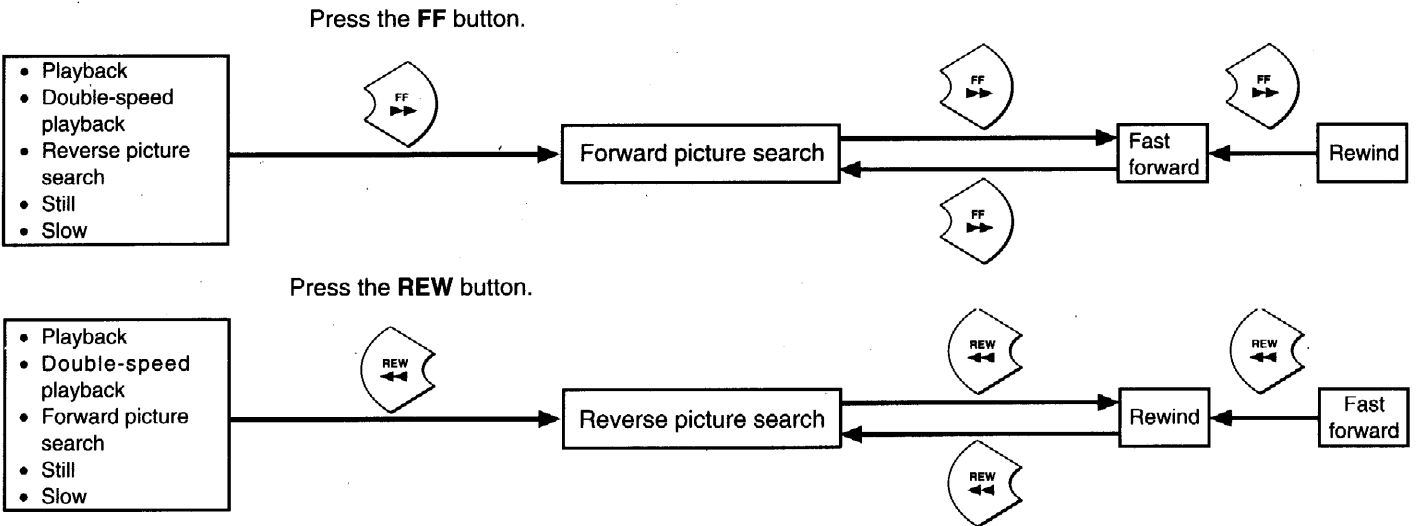
Press the **FF** button during playback. The tape will fast forward at 5 times the normal playback speed. To return to the normal playback, press the **PLAY/x2** (or **PLAY**) button.

Reverse picture search

Press the **REW** button during playback. The tape will rewind at 5 times the normal playback speed. To return to the normal playback, press the **PLAY/x2** (or **PLAY**) button.

The forward or reverse picture search can be performed not only in the playback mode but also in the following modes: fast forward, rewind, forward or reverse picture search, still and slow modes.

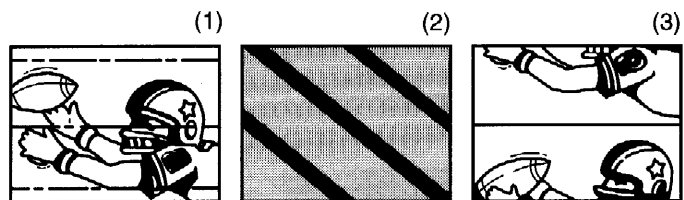
Each time the **FF** or **REW** button is pressed, the mode is selected in the following sequence.



OPERATION

Note

During picture search the sound is muted and the horizontal noise bars appear on the TV screen as shown in Figure (1). This is normal. If the noise patterns appear as shown in Figures (2) and (3), adjust the horizontal/vertical controls on your TV.



SPECIAL EFFECTS

Still

This function enables you to freeze a picture so that you can watch important scenes closely.

Press the **PAUSE/STILL** button during playback to freeze the picture.

To return to the normal playback, press the **PAUSE/STILL** button again.

Notes

- The still mode is automatically canceled after about 5 minutes to return to the normal playback.
- If the picture is vertically unstable in the still mode, use the **CH/TRK** \wedge/\vee buttons to obtain the stable picture.

Frame Advance

1 Press the **PAUSE/STILL** button during playback.
The picture will be frozen.

2 Press the **PLAY/×2** (or **PLAY**) button while the picture is frozen.
The picture will advance by one frame each time the button is pressed.
Keep the **PLAY/×2** (or **PLAY**) button pressed to play back the tape at 1/30th the normal speed.

3 To return to the normal playback, press the **PAUSE/STILL** button again.

Double-speed Playback

Press the **PLAY/×2** (or **PLAY**) button during playback.

The picture will move at twice the normal speed.

To return to the normal picture, press the **PLAY/×2** (or **PLAY**) button again.

Slow Playback

This function has two variations: 1/7th and 1/15th the normal speed.

Press the **SLOW** button during playback.

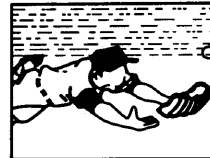
The picture will move at 1/7th the normal speed.

If the button is pressed again, the speed changes to 1/15th the normal speed.

To return to the normal playback, press the **PLAY/×2** (or **PLAY**) button.

Notes

- The slow playback is automatically canceled after 5 minutes to return to the normal playback.
- If noise bars appear on the TV screen in the slow mode during the auto tracking mode, adjust the tracking for the clearest picture using the **CH/TRK** \wedge/\vee buttons.
- If noise bars appear in the still or frame advance mode during the auto tracking mode, set the VCR to the play or the slow mode, then adjust the tracking. The **CH/TRK** \wedge/\vee buttons work only in the play or the slow mode.
- Noise bars may not disappear completely even by adjusting the tracking.



A picture with noise bars



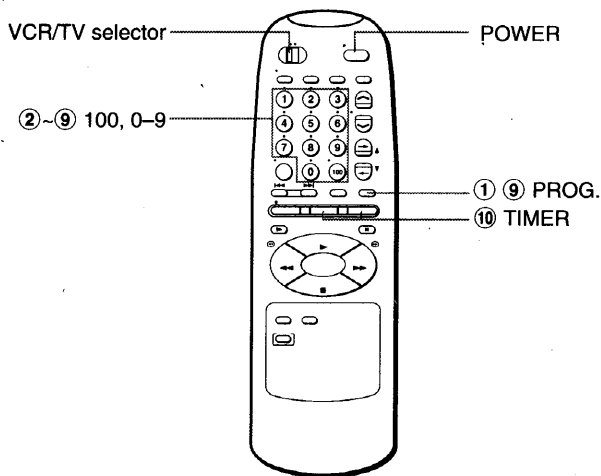
A picture adjusted with the **CH/TRK** \wedge/\vee buttons

NORMAL TIMER RECORDING

The built-in timer allows you to record up to 6 different programs over one month. This function is convenient when you are away from home or when you are busy. All you have to do is set the timer to the desired day, time and channel for recording.

The following timer programs are available:

- **Once program:** to execute recording once only
- **Daily program:** to execute recording at the same time Monday through Friday
- **Weekly program:** to execute recording at the same time on the same day every week



Setting outline

Select the desired timer program on the MENU screen and perform the following steps consecutively, following the blinking cursor. (The next position blinks after finishing each step.)

Preparation

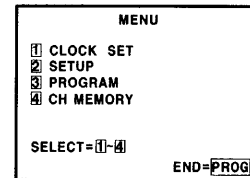
- Check that the current time is correct (see page 24).
- Load a cassette with the safety tab. (Press the **POWER** button if the power is off with a cassette.)
- Make sure that the **VCR/TV** selector on the remote control unit is set to VCR.
- Select TV or CATV mode (see page 25).

Operation

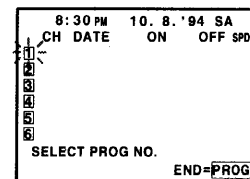
Example:

to record CATV channel 25 in the SP mode from 9:02PM to 10:50PM on October 10, 1994 on program No. 1 (once program) when the current time is 8:30 PM on October 8, 1994.

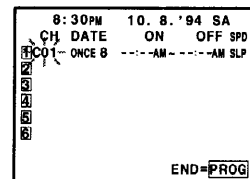
- ① Press the **PROG.** button so that the MENU screen appears on the TV screen.



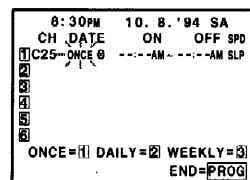
- ② To select PROGRAM, press the 3 button. The PROGRAM screen appears.



- ③ To select program number 1, press the 1 button.



- ④ To select CATV channel 25, make sure that "C" for CATV is displayed on the CH column like the illustration above and press the 2 and 5 buttons:

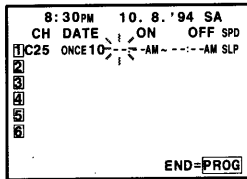


- If you use a cable box, with the number buttons enter the cable box output channel number instead. Then on the cable box, select the channel you record.

OPERATION

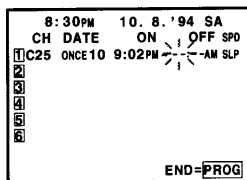
NORMAL TIMER RECORDING

- 5 Press the **1** button to select the ONCE program and press the **1** and **0** buttons to set the recording date on 10th.

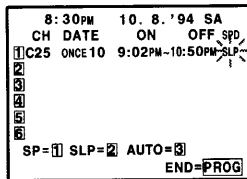


- If "DAILY" (the **2** button) is selected, the screen shows "MO - FR."
- If "WEEKLY" (the **3** button) is selected, the screen shows "SU = 1, MO = 2, TU = 3, WE = 4, TH = 5, FR = 6, SA = 7." Select a desired day with a number button (1 - 7).

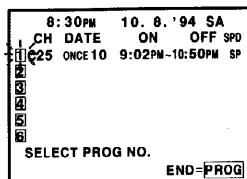
- 6 To set the ON time, press the **0, 9, 0, 2** and **2** (PM) buttons.



- 7 To set the OFF time, press the **1, 0, 5, 0** and **2** (PM) buttons.



- 8 To select the tape speed SP, press the **1** button.



- For recording speed modes, see "Auto Speed Select" on the right of this page.

- 9 Press the **PROG.** button. Setting program No.1 is completed and the MENU screen is resumed.

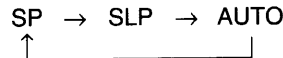
- If you want to set another timer recording programs, follow steps 2 to 9.

- 10 Press the **TIMER** buttons simultaneously. The power will be turned off and the VCR will enter the timer standby mode. The recording will automatically start at the set time.

Auto Speed Select

If the tape length may not be long enough for timer recording in the SP mode, set the recording speed to AUTO with the **3** button at step 8 on the left of this page. Recording starts in the SP mode and the VCR automatically selects the tape speed to record the program to the end. If the tape length is not long enough, the tape speed automatically changes from the SP mode to the SLP mode.

You can also use the **SP/SLP** button to select the speed mode. Each time the button is pressed, the speed mode changes accordingly as follows:



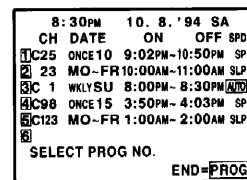
Notes

- Make sure to select TAPE 120, 160 or 180 from the SETUP screen according to the tape used (see page 32).
- When the SLP mode is selected and the tape length is not enough to record the program to the end, the program cannot be recorded to the end.
- The image will be distorted when playing back the part where the recording mode was switched over from the SP mode to SLP mode with the Auto Speed Select method.

Confirming the Programmed Contents

Before the VCR enters the timer standby mode

- 1 Press the **PROG.** button so that the MENU screen appears.
- 2 To select the PROGRAM screen, press the **3** button.



- 3 Press the **PROG.** button twice when you finish confirming.

In the timer standby mode

Press the **PROG.** button and the PROGRAM screen appears on the TV screen. After about 30 seconds, the screen disappears.

Canceling the Programmed Contents

Before the VCR enters the timer standby mode

- 1 Press the **PROG.** button so that the MENU screen appears.
- 2 Press the **3** button to select the PROGRAM screen.
- 3 Press the **1 to 6** button to select the program number you want to cancel.
- 4 Press the **CANCEL** button to cancel.
- 5 Press the **PROG.** button again.

In the timer standby mode

- 1 Press the **TIMER** buttons to cancel the timer standby mode.
- 2 Turn on the power and follow the steps above.
- 3 Press the **TIMER** buttons to reenter the standby mode.

Changing the Programmed Contents in the Timer Standby Mode

- 1 Set the **VCR/TV** selector to VCR.
- 2 Press the **TIMER** buttons to cancel the timer standby mode.
- 3 Press the **POWER** button to turn on the VCR.
- 4 Press the **PROG.** button to display the MENU screen.
- 5 Correct the contents following steps ② to ⑧ for "Normal Timer Recording".
- 6 Press the **PROG.** button.
- 7 Press the **TIMER** buttons again to reenter the timer standby mode.

Error Indication

- "E" indication will appear on the multidisplay if you press the **TIMER** button when there is no cassette inserted or no program is timer-programmed.
- When the **TIMER** buttons are pressed with a cassette without the safety tab loaded, "E" indication will appear on the multidisplay. Then, the cassette will eject automatically.

Normal Playback and Recording in the Timer Standby Mode

Normal playback and recording are possible in the timer standby mode (with the **TIMER** indicator lit on the multidisplay).

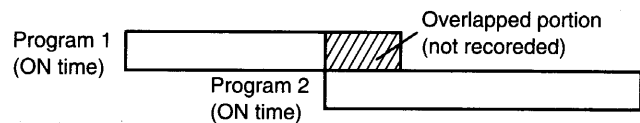
- 1 Set the **VCR/TV** selector to VCR.
- 2 Press the **TIMER** buttons to turn off the **TIMER** indicator.
- 3 Press the **POWER** button to turn on the VCR.
- 4 Follow the procedure for normal playback or recording.
- 5 Press the **TIMER** buttons again after playback or recording. The VCR returns to the timer standby mode.

Note

Finish normal use of your VCR before the preset recording start time, since the timer does not work if the VCR is not in the timer standby mode.

Overlap of the Programs

If two programs set for timer recording overlap, the recording ON time of program 2 has priority over the recording OFF time of program 1.



Power Failure During Timer Recording

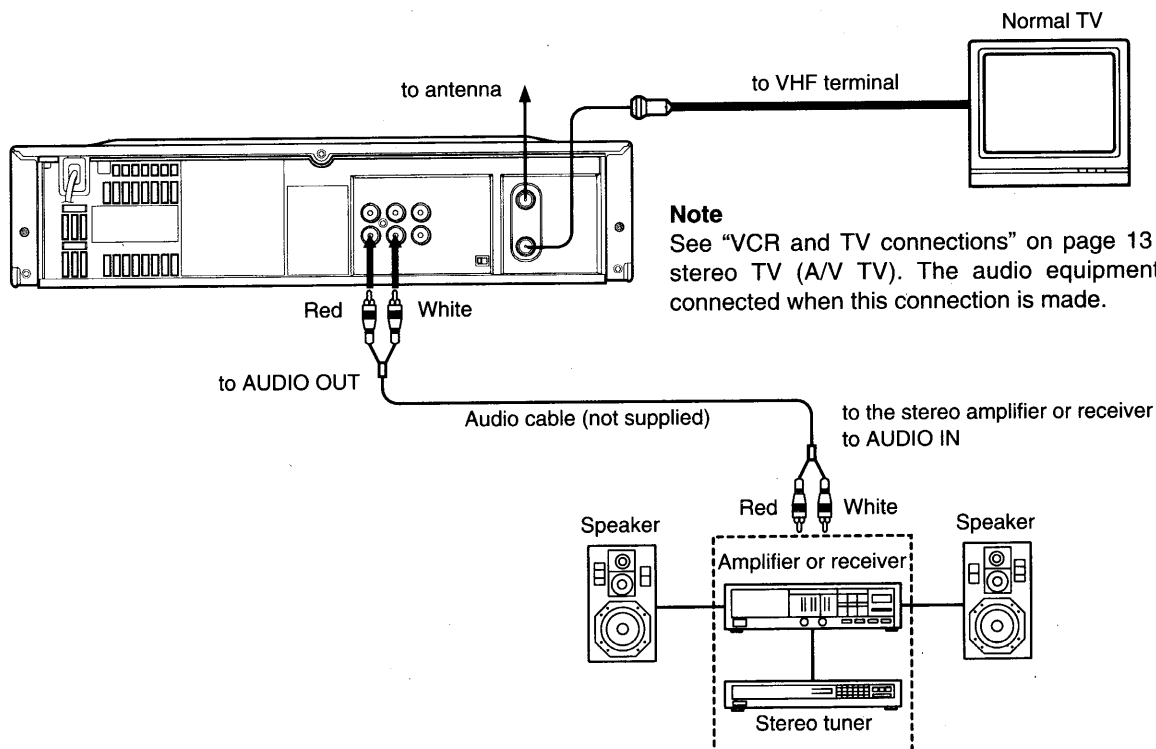
- When a power failure has occurred, "12:00AM" blinks on the multidisplay. Since the programmed contents have been cleared, reset the clock and timer recording.
- When power has failed for a short time, the colon (:) used for the current time display blinks. The programmed contents are not affected. Reset the clock.

Notes

- The auto rewind function does not operate when the tape reaches the end during timer recording.
- During timer recording, the pause and stop modes cannot be selected.
- When "once" timer recording is completed, the programmed contents are cleared.

SPECIAL OPERATIONS

Connection for the MTS



Note

See "VCR and TV connections" on page 13 to use your stereo TV (A/V TV). The audio equipment cannot be connected when this connection is made.

Notes

- Be sure to turn off the power before making any connections.
- Turn down the volume so any sudden loud sound does not damage your speakers.
- Make sure to turn off the power of the amplifier before plugging or unplugging the power cord of the VCR. Otherwise, the speakers may be damaged.

MTS (Multichannel TV Sound)

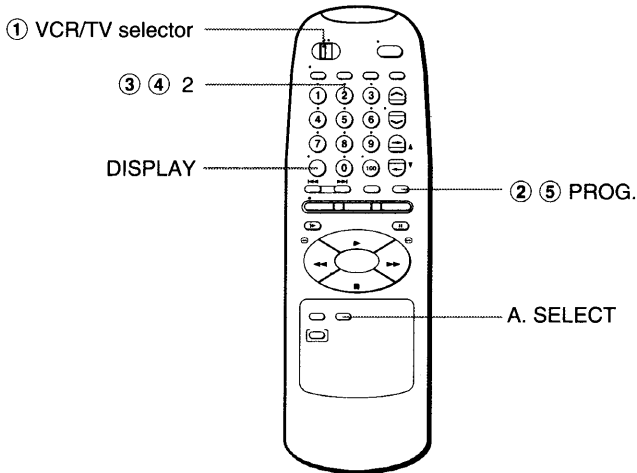
You can enjoy the multichannel TV sound while viewing a monaural sound TV, using the stereo amplifier and speakers.

SAP (Second Audio Program)

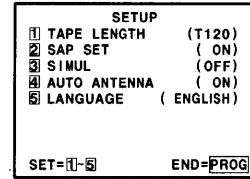
The SAP permits reception of dual audio broadcasting. For example: The standard audio program is transmitted in English and the second in Spanish.

Recording the SAP and/or Stereo Broadcasts

You can record the SAP and/or stereo broadcasts with this unit.



- ① Set the **VCR/TV** selector to VCR.
- ② Press the **PROG.** button to display the MENU screen.
- ③ Press the **2** button to display the SETUP screen.
- ④ Press the **2** button to set SAP SET to ON.
Each time the **2** button is pressed, ON or OFF is selected alternately.



- ⑤ Press the **PROG.** button twice to set the TV to the normal screen.
- ⑥ Perform the basic manual recording operation on page 28.

Setting the SAP

Press the **DISPLAY** button to select the display mode.

Type of broadcast	on the TV screen		SAP SET ON or OFF on the SETUP screen	Contents of recorded sound		
	SAP	STEREO		Normal sound track (Mono)	Hi-Fi sound track	
					L	R
Regular (monaural audio)	off	off	ON or OFF	MONO	MONO	MONO
Stereo	off	on	ON or OFF	MONO (MIXED)	STEREO	
Regular+SAP	on	off	ON	MONO	MONO	SAP
			OFF	MONO	MONO	MONO
Stereo+SAP	on	on	ON	MONO	MONO	SAP
			OFF	MONO (MIXED)	STEREO	

OPERATION

SPECIAL OPERATIONS

Playing SAP and/or Stereo Broadcasts

You can play SAP and/or stereo broadcasts with this unit. Press the **A. SELECT** button to select the desired sound so that the **L** **R** indicators on the multidisplay turn on or off. Then, perform the basic playback operation on page 30.

Setting the SAP and/or stereo sound

Desired sound	L R indicators on the multidisplay	Sound through line output
SAP sound	R(right) is ON.	SAP
Stereo sound	Both R (right) and L (left) are ON.	Stereo

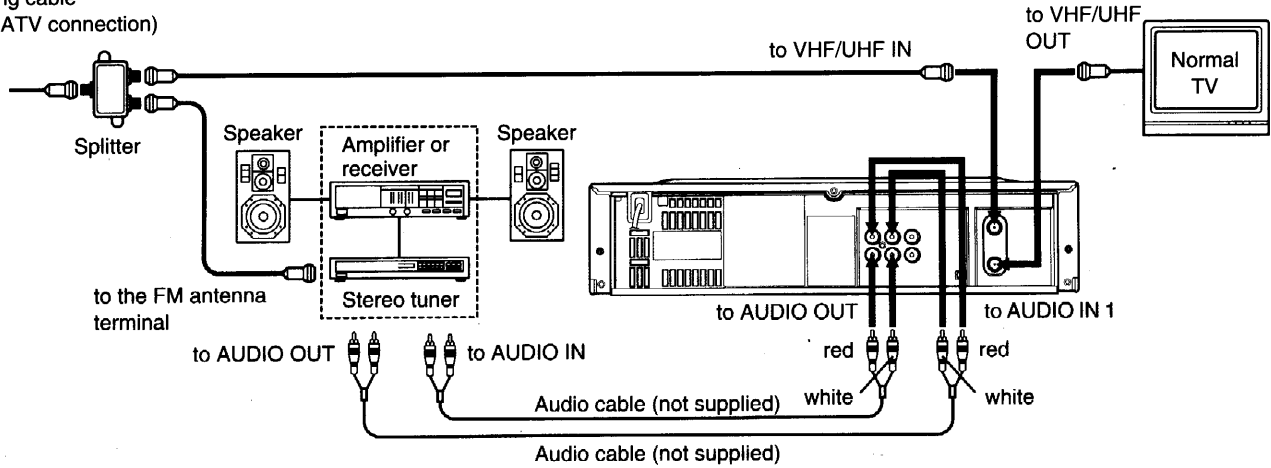
Note

When the TV is connected to RF OUT of the VCR, the sound is monaural.

Simulcast Recording

Connection

Broadcast or incoming cable
(See CATV connection)



Note

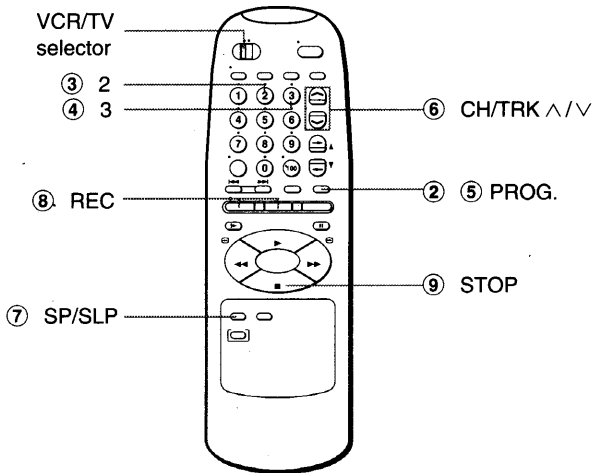
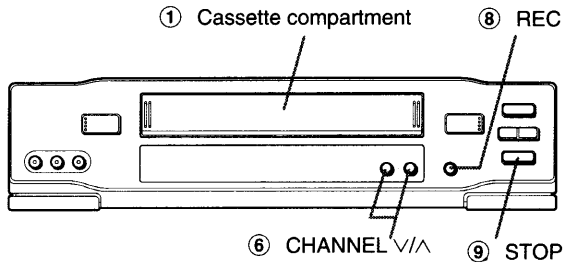
See "VCR and TV connections" on page 13 to use your stereo TV (A/V TV). The stereo tuner and the VCR should also be connected when this connection is made.

Notes

- If the VCR is placed near a tuner or radio, noise may occur when receiving an AM program. In such a case, separate it from any tuner or radio.
- Since the tapes recorded with hi-fi equipment have a wide dynamic range, turn down the volume so any sudden loud sound does not damage your speakers.
- Be sure to turn off the power of the amplifier before plugging or unplugging the power cord of the VCR. Otherwise, the speakers may be damaged.
- Be sure to turn off the power before making any connections.

Simulcast Recording

When TV program such as MTV, HBO or MAX is being simulcast in FM stereo in your area, the VCR can also record the simulcast sound from an FM stereo tuner or receiver onto the Hi-Fi sound or normal sound track.

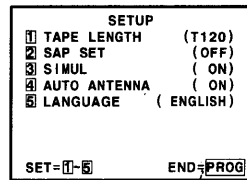


Preparation

- Make sure that your connections are as shown on page 41.
- Turn on the FM stereo tuner or receiver and tune to the station for the simulcast program.
- Turn on the TV and select CH3 or CH4 according to the output channel selector at the rear.
- Set the **VCR/TV** selector to VCR.

Operation

- 1 Load a cassette with a safety tab.
The VCR automatically turns on.
- 2 Press the **PROG.** button to display the MENU screen.
- 3 Press the **2** button to display the SETUP screen.
- 4 Press the **3** button to set SIMUL to ON.
Each time the **3** button is pressed, ON or OFF is selected alternately.

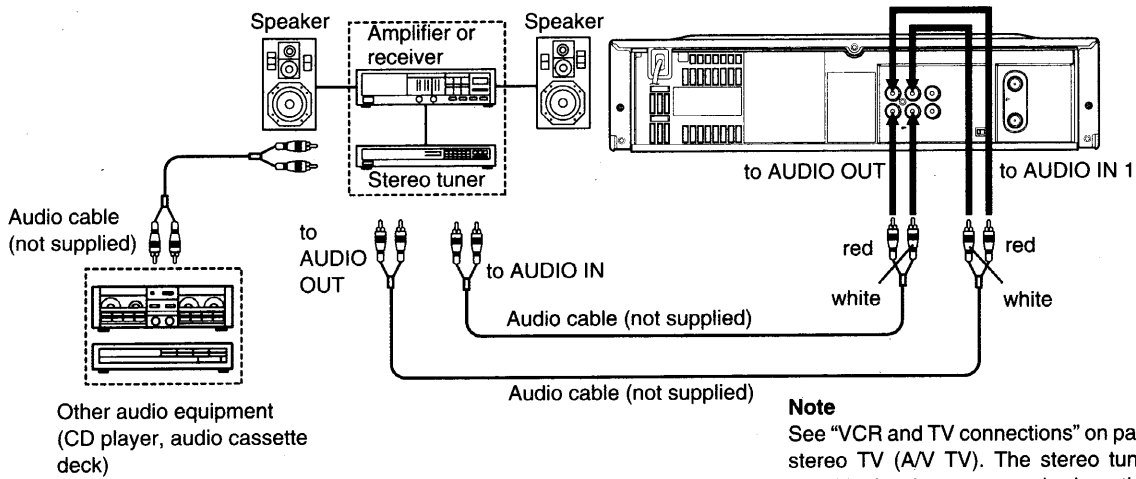


- 5 Press the **PROG.** button twice to set the TV to the normal screen.
- 6 Press the **CHANNEL ∨/∧** buttons on the VCR or the **CH/TRK ∧/∨** buttons on the remote control unit to select the desired channel.
 - If you use a cable box, select the cable box output channel instead. Then on the box, select the channel you record.
- 7 Press the **SP/SLP** button to select SP or SLP.
- 8 Press the **REC** button on the VCR, or simultaneously press the **REC** buttons on the remote control unit.
- 9 Press the **STOP** button on the VCR or the remote control unit to stop recording.

OPERATION

SPECIAL OPERATIONS

Audio Equipment Connection



Note

See "VCR and TV connections" on page 13 to use your stereo TV (AV TV). The stereo tuner and the VCR should also be connected when this connection is made.

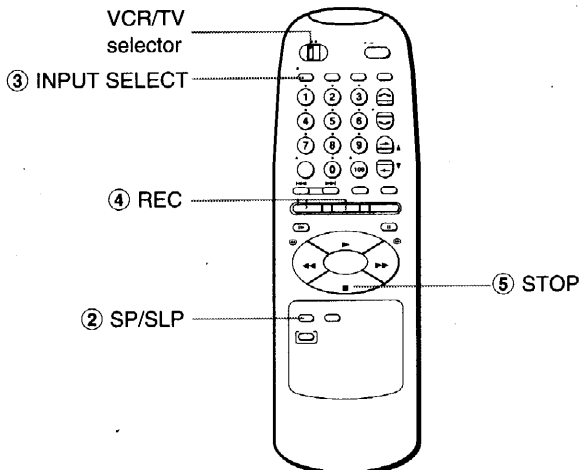
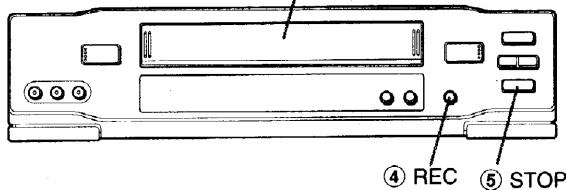
Notes

- If the VCR is placed near a tuner or radio, noise may occur when receiving an AM program. In such a case, separate it from any tuner or radio.
- Turn down the volume so any sudden loud sound does not damage your speakers.
- Be sure to turn off the power of the amplifier before plugging or unplugging the power cord of the VCR. Otherwise, the speakers may be damaged.
- Be sure to turn off the power before making any connections.
- When a monaural audio equipment is connected only to L(MONO) of the AUDIO IN 1 jacks, the same sound is recorded on both L and R on the Hi-Fi track.

Audio Hi-Fi Recording

The VCR can be also used as an audio tape recorder for hi-fi long play recording (for example, max. 8 hours in the SLP mode with a T-160 cassette).

① Cassette compartment



Preparation

- Set the FM tuner to the broadcast to be recorded.
- Make sure that the **VCR/TV** selector is set to VCR.

Operation

- ① Load a cassette with the safety tab.
- ② Press the **SP/SLP** button to select the recording tape speed, SP or SLP.
- ③ Press the **INPUT SELECT** button until "L1" is displayed on the multidisplay.
- ④ Press the **REC** button on the VCR, or simultaneously press the **REC** buttons on the remote control unit. Recording will begin. Set the audio equipment to the playback mode at the same time.
- ⑤ Press the **STOP** button on the VCR or the remote control unit to stop recording.

Note

You can record with better audio quality in the SP mode.

Copying a VCR Recording

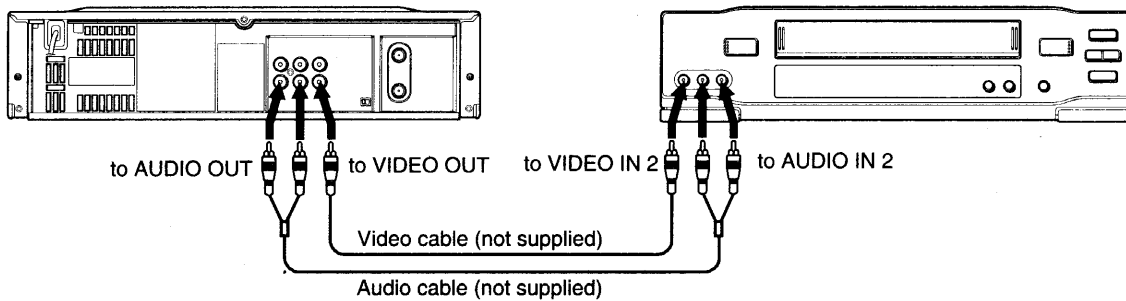
You can dub a tape for editing by connecting this VCR to another VCR.

- Make sure that the **VCR/TV** selector is set to VCR.

Using this VCR for playback (See page 30.)

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

Connection



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 recording (See page 28.)

- 1 Recording VCR:** Press the **REC** button, then the **PAUSE/STILL** button to enter the recording pause mode.
- 2 VCR for playback:** Press the play button to start playback.
- 3 Recording VCR:** Press the **PAUSE/STILL** button again to cancel the recording pause mode and to start recording.
- 4 Both VCRs:** Press the **STOP** button of each VCR to stop recording.
 - For recording, press the **INPUT SELECT** button until "L2" indicator lights on the multidisplay.

Notes

- When you use two TOSHIBA 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 somewhat in the dubbed tapes. It is best to use the SP mode.

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.

	PROBLEM	REMEDY
Power Supply	• No power.	• The power cord is not plugged in. Plug it firmly into the outlet.
	• Although the power is on, the VCR will not work.	• Wait for two hours if moisture has condensed. (See page 2.) • There is no cassette in the VCR. Load a cassette.
Clock/Timer	• The clock does not work. • The timer does not work properly.	• There has been a power failure. Reset the clock. (See page 24.) • The clock is incorrect. Set the clock correctly. (See page 24.)
TV Reception	• The picture does not appear on the TV screen.	• Set the TV channel to the VCR output channel or set the TV/VCR button on the TV to VCR. • Adjust the antenna direction or use an optional antenna booster. • Plug the power cord into the outlet firmly.
Recording and Playback	• The picture does not appear on the TV screen during recording and playback.	• Press the TV/VCR button to select the VCR mode and set the TV channel to 3 or 4.
	• The VCR does not record.	• The cassette's safety tab is broken. Use a cassette with tab or cover the hole with cellophane tape.
	• The picture on the VCR tape is poor.	• Adjust the tracking on the VCR. • Clean the video heads with a commercially available cleaning tape.
	• The desired sound is not correct, such as SAP, stereo, or regular sound.	• Set the A. SELECT button on the remote control unit. (See page 41.)
	• Noise is present in the hi-fi sound being played.	• Adjust the tracking on the VCR.
	• The timer recording function does not work.	• There is an error in programming. Reset the timer recording program. • There is no cassette in the VCR. • If the cassette does not have its safety tab, use another cassette or cover the hole with cellophane tape. • Press the two TIMER buttons on the remote control unit simultaneously. • There has been a power failure. Reset the clock to the correct time if "12:00" is flashing and reprogram the timer. (See page 24.) • The cable box is not turned on.
Remote Control Unit	• The remote control unit does not work properly.	• Replace with new batteries if the old ones are exhausted. • Make sure the remote control unit is within 30° of the remote control receiver on the VCR. • Use the remote control unit within 7 m from the VCR. • Remove any obstacle between the VCR and the remote control unit. • Check the VCR/TV selector setting.
Miscellaneous	• The cassette is ejected immediately after it is loaded.	• Remove the cassette and reload it carefully.
	• The cassette does not go into the cassette compartment.	• There is already a cassette in the VCR.

SPECIFICATIONS

Power supply:	120 V AC, 60 Hz
Power consumption:	22 W
External dimensions:	370 × 89 × 306.5 mm (W.H.D.)
Weight:	4.0 kg
Channels received:	VHF: Channels 2–13 UHF: Channels 14–69 CATV: Channels 1–125
Antenna input/output terminals:	UHF/VHF: 75 Ω F type connector
Signal system:	Standard NTSC
Recording/Playback system:	Recording: VHS format (SP, SLP) Playback: VHS format (SP, LP, SLP)
Cassette:	Video cassette with VHS mark
Tape speed:	SLP: 11.1 mm/s, SP: 33.4 mm/s
Video recording/playback time:	SLP: 480 minutes, SP: 160 minutes (When T-160 video cassette is used.)
Fast forward/rewind time:	Within approx. 3 minutes (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: 308 mV(rms), more than 47 kΩ, pin jack
Audio output:	Line output: 308 mV(rms), less than 4.7 kΩ, pin jack
Audio frequency range (Hi-Fi):	20 Hz – 20 kHz
Audio dynamic range (Hi-Fi):	90 dB
Utilization conditions:	Temperature: 5°C to 40°C Humidity: less than RH 80%

Designs and specifications are subject to change without notice.

LIMITED WARRANTY
TOSHIBA VIDEO CASSETTE RECORDER

Toshiba America Consumer Products, Inc. ("TACP") and Toshiba Hawaii Inc. ("THI") make the following limited warranties. These limited warranties extend to the original consumer purchaser or any person receiving this set as a gift from the original consumer purchaser and to no other purchaser or transferee.

Limited Ninety (90) Day Warranty

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

Limited One (1) Year Warranty

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

Owner's Manual and Registration Card

You should read the owner's manual thoroughly before operating this product. You should also insure that your name and address are on file as owners of a TACP/THI product by completing and mailing the enclosed registration card within ten days after you, or the person who has given you this product as a gift, purchased this product. This is one way to enable

Step-By-Step Procedures = How To Obtain Warranty Service

**IN THE CONTINENTAL
UNITED STATES ...**

Should your unit require
service or parts, CALL

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

- (1) Refer to the troubleshooting guide in your owner's manual. This check list may solve your problem.
- (2) Contact one of the TACP/THI Service Centers listed below for warranty service or call the TACP toll free number 1-800-631-3811 within thirty (30) days after you find a defective product or part.
- (3) Arrange for the delivery of the product to the Authorized TACP/THI Service Center. Products shipped to the Service Center must be insured

TACP/THI to establish the date of purchase of the product, as well as to provide you with better customer service and improved products. Failure to return the card will not affect your rights under this warranty so long as you retain other proof of purchase such as a bill of sale.

Your Responsibility

The above warranties are subject to the following conditions:

- (1) You must retain your bill of sale or provide other proof of purchase. Completing and mailing in the enclosed registration card within ten days after the original retail purchase is one way of providing such other proof of purchase.
- (2) You must notify an Authorized TACP/THI Service Station within thirty (30) days after you discover a defective product or part.
- (3) All warranty servicing of this product must be made by an Authorized TACP/THI Service Station.
- (4) These warranties are effective only if the product is purchased and operated in the U.S.A..
- (5) Labor service charges for set installation, set up, adjustment of customer controls and installation of repair or antenna systems are not covered by this warranty. Reception problems caused by inadequate antenna systems are your responsibility.
- (6) Warranties extend only to defects in materials or workmanship as limited above and do not extend to any product or parts which have been lost or discarded by you or to damage to products or parts caused by misuse, accident, improper installation, improper maintenance or use in violation of instructions furnished by us; or to units which have been altered or modified without authorization of TACP/THI or to damage to products or parts thereof which have had the serial number removed, altered, defaced or rendered illegible.



HAWAII

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

- and safely and securely packed, preferably in the original shipping carton, and a letter explaining the defect and also a copy of the bill of sale or other proof of purchase must be enclosed. All transportation and insurance charges must be prepaid by you. (See PROCEDURE.)
- (4) If you have any question about service, please contact one of the following TACP/THI Service Centers:

EAST

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

SOUTHEAST

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

MIDWEST

1010 Johnson Drive
Buffalo Grove, IL 60089
Phone Number:
(708) 541-9400

SOUTHWEST

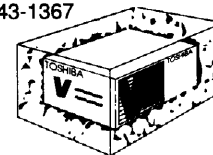
1421 Champion Drive
Suite 304
Carrollton, TX 75006
Phone Number:
(214) 243-1367

WEST

5490 E. Francis
Street, Ontario,
CA 91761
Phone Number:
(909) 988-5303

IMPORTANT: PACKING AND SHIPPING INSTRUCTIONS

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



ALL WARRANTIES IMPLIED BY STATE LAW, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE EXPRESSLY LIMITED TO THE DURATION OF THE LIMITED WARRANTIES SET FORTH ABOVE. Some states do not allow limitations on how long an implied warranty lasts, so that above limitation may not apply to you. **WITH THE EXCEPTION OF ANY WARRANTIES IMPLIED BY STATE LAW AS HEREBY LIMITED, THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, GUARANTEES, AGREEMENTS AND SIMILAR OBLIGATIONS OF MANUFACTURER OR SELLER WITH RESPECT TO THE REPAIR OR REPLACEMENT OF ANY PRODUCT OR PARTS.**

IN THE EVENT SHALL TACP OF THI BE LIABLE FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES. Some states do not allow the exclusion or limitation of incidental or consequential damages so the above limitation may not apply to you.

No person, agent, distributor, dealer, service station or company is authorized to change, modify or extend the terms of these warranties in any manner whatsoever. The time within which an action must be commenced to enforce any obligation of TACP and THI arising under this warranty or under any statute, or law of the United States or any state thereof, is hereby limited to one year from the date you discover or should have discovered, the defect. This limitation does not apply to implied warranties arising under state law. Some states do not permit limitation of the time within which you may bring an action beyond the limits provided state law so the above provision may not apply to you. This warranty gives you specific legal rights and may also have other rights which vary from state to state.

TOSHIBA AMERICA CONSUMER PRODUCTS, INC.