

# PENTAX

**VHS** HI-FI VIDEO DECK

# MODEL PV-T100A

## INSTRUCTION MANUAL



## CONGRATULATIONS

You are now the proud owner of a PENTAX VTR. Please read this instruction manual carefully before use and refer to it if any difficulties arise.

## FEATURES

- Hi-Fi VHS recording (see page 3)
- 4 Heads
  - 2 Video Heads
  - 2 Hi-Fi Audio Heads
- Simulcast recording
- Programmable channel memory with voltage synthesized tuner
- Setting 4 programs/2 week is possible with built-in programmable timer
- Tuning ability for cable systems channel A-2, A-1 and A through W
- Infrared remote control operation
- Instant recording timer (IRT)
- Maximum 8 hours recording/playback
- Front loading mechanism
- Automatic rewind
- Soft touch control with microprocessor
- Visual search
- Rewind shut-off

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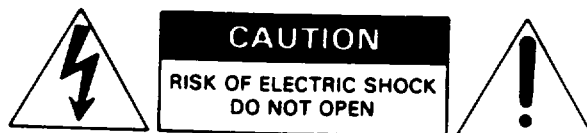
## FOR YOUR SAFETY

**Power supply:** AC 120V, 60 Hz only

The POWER switch located on the front panel of the VTR switches the VTR to on and off, leaving the clock/timer facility unaffected.

If the unit is to be left unattended for a long period and it is not intended to use the timer recording function, it is recommended that the unit be completely switched off and the plug removed. If you intend to record during your absence, remember there is no necessity for the TV receiver to be switched on.

Illustrated below is the label on the back of your unit.



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 of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

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

### WARNING:

Many television programs are copyrighted. One court has held that private, non-commercial, in-home video taping of copyrighted televised programs constitutes copyright infringement. Purchasers are advised not to copy such programs.

**WARNING: TO PREVENT FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.**

### Moisture condensation

If you pour a cold liquid into a glass, water vapor in the air will condense on the surface of the glass. This is moisture condensation.

Moisture condensation on the head drum, one of the most crucial parts of the Deck, will cause damage to the tape. The Deck has a condensation eliminator built in. When the Deck is exposed to a rapid temperature change from cold to warm, some condensation will occur. When moisture is present, turn power off and allow at least 2 hours for the Deck to dry out.

# Hi-Fi VHS

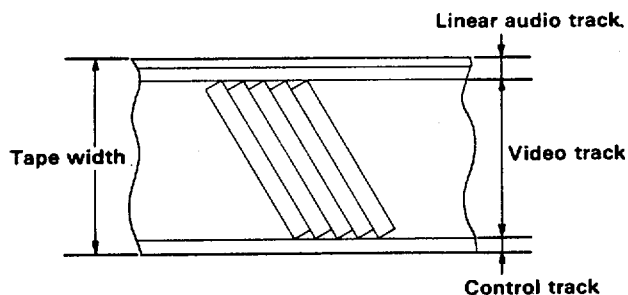
Hi-Fi VHS video recorders record sound using two systems simultaneously.

One system records on the linear audio track as with conventional recorders and the other records an FM (frequency modulated) audio signal together with the video signal on the video track.

## 1. Differences between conventional and Hi-Fi VHS recorders

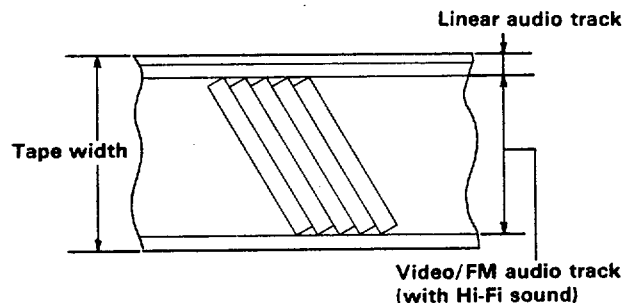
### • Conventional recorder

The audio signal is recorded on the linear audio track and the video signal is recorded on the video track.



### • Hi-Fi recorder

Audio signals are recorded on the video track together with the video signal as well as on the linear audio track. The audio signals recorded on the video track are frequency modulated.



## 2. Advantages of Hi-Fi VHS recorders

As the sound is recorded after frequency modulation, it has the following advantages.

- Excellent frequency response
- Less noise and distortion
- Wide dynamic range

In addition to these advantages since the two rotary heads are used to record and play back the audio signals, the relative speed of the tape and heads is 520 times the relative speed of the tape and head in the linear audio track in the EP mode so that wow and flutter is below the measurable limit.

## 3. Compatibility of tapes recorded by this recorder and tapes recorded by recorders not equipped to record Hi-Fi sound

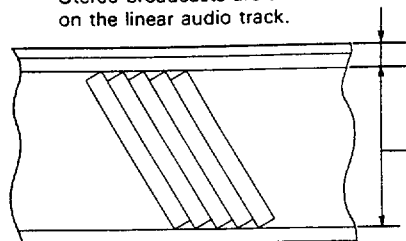
Because the audio signal is recorded on the linear audio track together with the Hi-Fi signal, tapes recorded by this recorder can be played back on conventional recorders and tapes recorded by other recorders without Hi-Fi can be played by this recorder.

## 4. Recording stereo simulcasts using a stereo system

(See page 15 for operations)

- Separate left and right channel audio signals are recorded on the Hi-Fi audio track so that stereo broadcasts can be recorded in stereo.
- Stereo broadcasts are also recorded as monaural on the linear audio track.

Stereo broadcasts are also recorded as monaural on the linear audio track.



Stereo broadcasts are recorded in stereo on the Hi-Fi audio track.

- **AUDIO OUTPUT SWITCH** (behind secondary controls door)



This selects between Hi-Fi and linear audio in playback. Normally set to "AUTO".

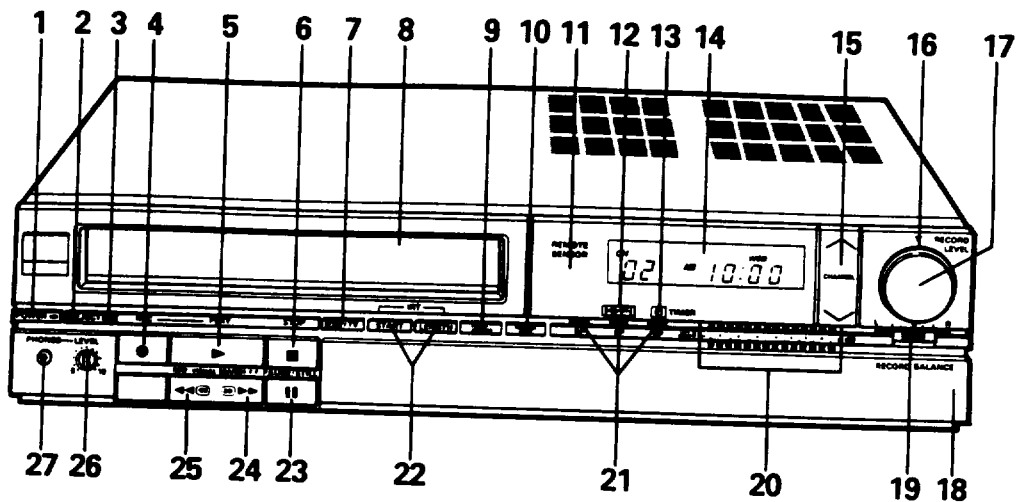
When a tape recorded on both Hi-Fi and linear audio tracks (for example, the tapes recorded with your VTR PV-T100A is played back, Hi-Fi audio is automatically played back; when a tape without Hi-Fi audio is played back (for example, the tapes recorded with the VTR that is not provided with Hi-Fi VHS), linear audio is automatically played back.

When the switch is set to the "LINEAR" position, only the "Linear" audio track is played, even if the tape was recorded with Hi-Fi audio tracks.

### Notes:

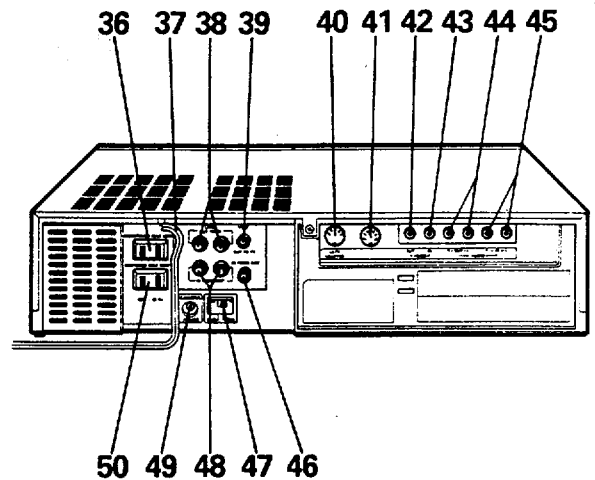
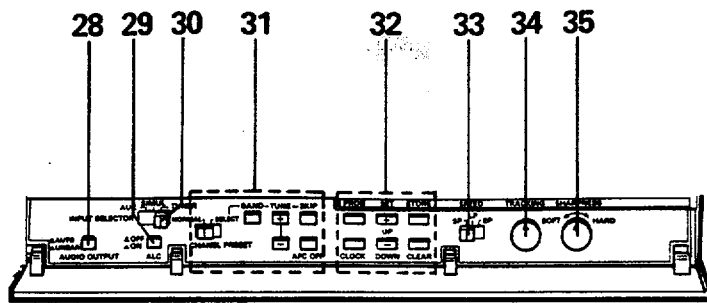
1. When the sound becomes unstable during Hi-Fi playback, the sound is muted temporarily. If the sound deteriorates even more, it switches over and plays back linear audio.
2. As rotary heads are used to pick up the Hi-Fi audio track, the heads and tape transport system are more likely to become dirty due to dust and magnetic particles from the tape when compared with an audio cassette recorder or reel-to-reel deck. When the heads get dirty, the Hi-Fi sound may not be heard or may be interrupted. If this happens, consult your dealer or PENTAX service center.
3. The linear audio sound tracks can record in monaural only. However, they play back in stereo if the pre-recorded tapes are in stereo.

# CONTROLS AND FEATURES



- 1. POWER SWITCH**  
Turn system power on and off.
- 2. EJECT BUTTON**  
With power on, press to remove cassette.
- 3. TAPE-IN INDICATOR**  
Lights when cassette is located in the compartment.
- 4. RECORD BUTTON**  
Press RECORD button and while holding RECORD, press PLAY button to record.
- 5. PLAY BUTTON**  
Press to start play.
- 6. STOP BUTTON**  
Press to stop tape. The STOP button must be pressed between "RECORD" and any other operation.
- 7. VTR/TV SELECT SWITCH**  
Selects the signal to be viewed.  
The VTR indicator comes on when the unit is in VTR mode and the signal received by the VTR is displayed on the TV screen. With the switch in the TV position (indicator light off) the broadcast signal is received directly by your TV set. When the VTR power is turned off, the VTR automatically switches to "TV".
- 8. CASSETTE COMPARTMENT**
- 9. CLOCK/COUNTER SELECT BUTTON**  
Press to select clock display or counter display.
- 10. COUNTER RESET BUTTON**  
To reset counter to "0000".
- 11. INFRARED RAY RECEIVING SECTION**  
Receives the infrared ray from remote control unit.
- 12. HI-FI INDICATOR**  
Lights when playing back tapes recorded with Hi-Fi VHS sound.
- 13. TIMER INDICATOR**  
Will light when turning power off after programming.
- 14. ELECTRONIC DIGITAL DISPLAY**  
This display is used as an indicator for the present time of day, channel number, tape counter, timer programming and instant recording.
- 15. CHANNEL SELECT BUTTONS**  
Select the channels you wish to view or to record by pressing these buttons.
- 16. MEMORY MARKER**  
When adjusting the recording level manually, adjust the Recording Level Control for optimum recording level, then turn this MARKER to the same position as the control's setting.  
When adjusting the recording level manually next time, simply turn the Recording Level Control to the MARKER's position, you can obtain the optimum recording level.
- 17. RECORDING LEVEL CONTROL**  
When recording with the ALC switch off, adjust the control so that 3 red segments light occasionally (during especially loud portions).
- 18. DOOR FOR SECONDARY CONTROLS**
- 19. RECORD BALANCE CONTROL**  
When recording with ALC switch set to off, adjust this control for left and right sound balance. At all other times leave it in the center position, which can be found as a small detent in the movement of the knob.
- 20. RECORDING LEVEL INDICATORS**  
Shows the peak input level of each audio channel during recording and the recorded levels during playback.
- 21. TAPE SPEED INDICATORS**
- 22. INSTANT RECORDING TIMER BUTTONS (IRT)**  
IRT allows unattended recording without programming the timer. See page 12 for details.
- 23. PAUSE/STILL BUTTON**  
Press to pause during recording or playback.
- 24. FAST FORWARD/VISUAL SEARCH BUTTON**  
Press to activate fast forward.  
Press this button during playback of a recorded tape, and forward playback picture at high speed can be seen.
- 25. REWIND/VISUAL SEARCH BUTTON**  
Press to start rewind.  
Press this button during playback of a recorded tape, and reverse playback picture at high speed can be seen.
- 26. LEVEL CONTROL**  
Adjust the sound level from the headphone.
- 27. PHONES SOCKET**  
Plug in a stereo headphone for private listening.

# CONTROLS AND FEATURES



## 28. AUDIO OUTPUT SWITCH

Set the switch to "AUTO" for automatic selection of Hi-Fi VHS sound recorded on the tape. To play back only linear audio track, set the switch to "LINEAR".

**Note:** When Hi-Fi VHS sound is played back, Hi-Fi indicator lights up.

## 29. AUTOMATIC LEVEL CONTROL (ALC) SWITCH

When in the ON (depressed) position, the recording level is controlled automatically. Release the switch (OFF position) to manually adjust the recording level.

## 30. AUX/SIMUL/TUNER SELECT SWITCH

In the TUNER position the VTR will record programs using the built-in tuner. In the SIMUL position the VTR will record the audio signals from the AUDIO IN jacks and video signal from the built-in tuner. In the AUX position the VTR will record audio and video signals from the AUDIO IN/VIDEO IN jacks.

## 31. CHANNEL PROGRAMMING CONTROLS

Program channels for channel up and down selection with these controls.

## 32. TIMER CONTROLS

## 33. TAPE SPEED SELECT SWITCH

Recording time using Cassette tape T-160:

EP: 8 hours

LP: 5.3 hours

SP: 2.6 hours

**Note:** Playback speed automatically corresponds with recorded speed.

## 34. TRACKING CONTROL KNOB

To minimize noise in playback.

## 35. SHARPNESS CONTROL

Adjusts for a pleasing level of picture sharpness.

## 36. UNSWITCHED AC OUTLET

Power is available whenever the VCR is plugged in. Maximum load is 300 watts.

## 37. POWER CORD

Connect to a 120V AC outlet.

## 38. UHF ANTENNA OUTPUT

Connect these terminals to the UHF antenna terminals on the back of the TV.

## 39. VHF ANTENNA OUTPUT

Connect this terminal to the VHF antenna terminal on the back of the TV.

## 40. CABLE ADAPTER JACK

Connection for external antenna switcher (for cable/game/disc).

## 41. MTS ADAPTER JACK

Connect an optional MTS adapter.

## 42. VIDEO OUT

For connection to monitor TV.

## 43. VIDEO IN

Receives video signal from a video camera or another VTR.

## 44. AUDIO OUT

For a connection to a monitor, your stereo system or another VTR.

## 45. AUDIO IN

Receives audio signals from a video camera, external sound equipment or from another VTR.

## 46. VHF ANTENNA INPUT

Connect the VHF antenna to this terminal.

## 47. RF CONVERTER SWITCH

Set this switch to whichever channel (CH3 or CH4) is unused in your area.

## 48. UHF ANTENNA INPUT

Connect the UHF antenna to these terminals.

## 49. CAMERA PAUSE JACK

Connect Camera Pause cable.

## 50. SWITCHED AC OUTLET

Power is available when the VTR is on. Maximum load is 200 watts.

# INSTALLATION

## ANTENNA CONNECTION

There are 2 types of TV broadcasts, VHF and UHF. There are areas where ① only VHF TV broadcasts can be received, ② only UHF TV broadcast can be received and ③ both VHF and UHF TV broadcasts can be received.

There are various types of antenna hook-ups. Use the correct one, referring to the following diagrams. At first, in order to connect your VTR to your TV for recording and playback, it will be necessary to attach the antenna to your VTR. Then you must connect your VTR to your Television. Your VTR comes with the necessary connectors and adapters for most types of VTR installation.

If your television is used on a cable system, special installation procedures may be required. We suggest you contact your dealer or cable company for assistance. Installation is not covered by the Limited Warranty.

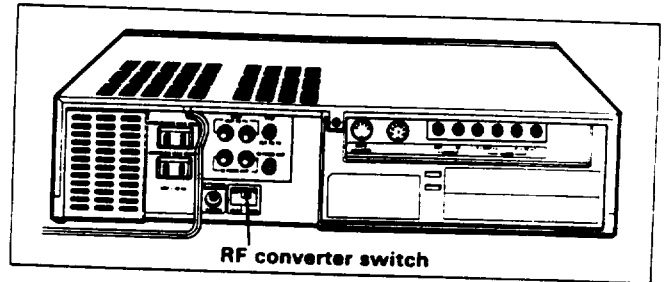
**"Note to CATV system installer:** This reminder is provided to call the CATV system installer's attention to Article 820-22 of the NEC that provides guide lines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical".

If you want to attach your VTR to a Portable TV with "rabbit ears" (dipole antenna), you must disconnect the "rabbit ear" leads from the antenna input terminal of the TV. It will be necessary to extend these leads so they can be attached to your VTR. We recommend an outside antenna.

## Precaution

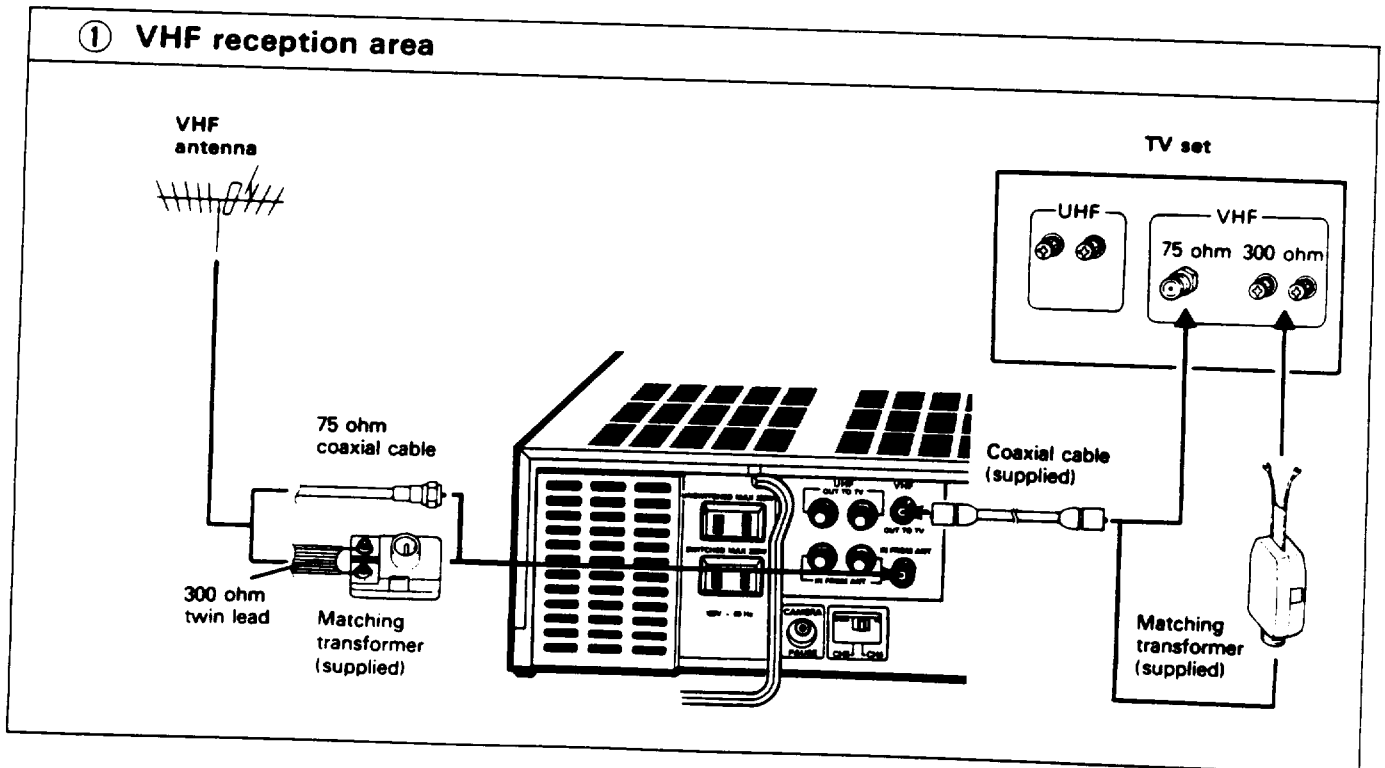
- The VTR is designed for use in horizontal position only.
- Avoid extreme heat, cold, moisture and dust.
- Avoid use near magnetic field and places subject to strong vibrations.
- Do not insert wires, etc. through the cassette holder.
- Do not move the unit from a hot place to a cold place or vice versa.
- Be careful; when the surface of the case is wiped with a volatile agent such as benzene, alcohol, thinner, etc., or a chemically processed cloth, the surface finish may deteriorate or its coating may peel.
- Allow for air circulation at bottom, top and back of unit.

## Video channel setting

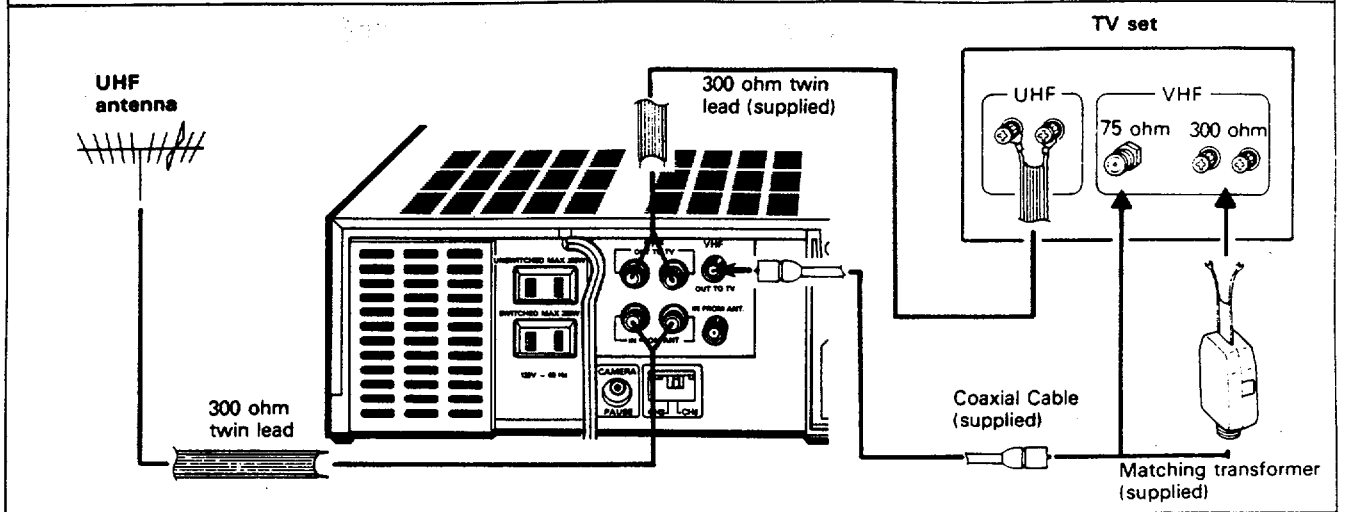


The RF converter changes the video and audio signals from the built-in tuner or tape playback, to a standard television broadcast signal on channel 3 or 4. To obtain video recorder output on either channel 3 or 4, set the RF converter selector switch located on the rear of VTR to whichever channel is unused in your area.

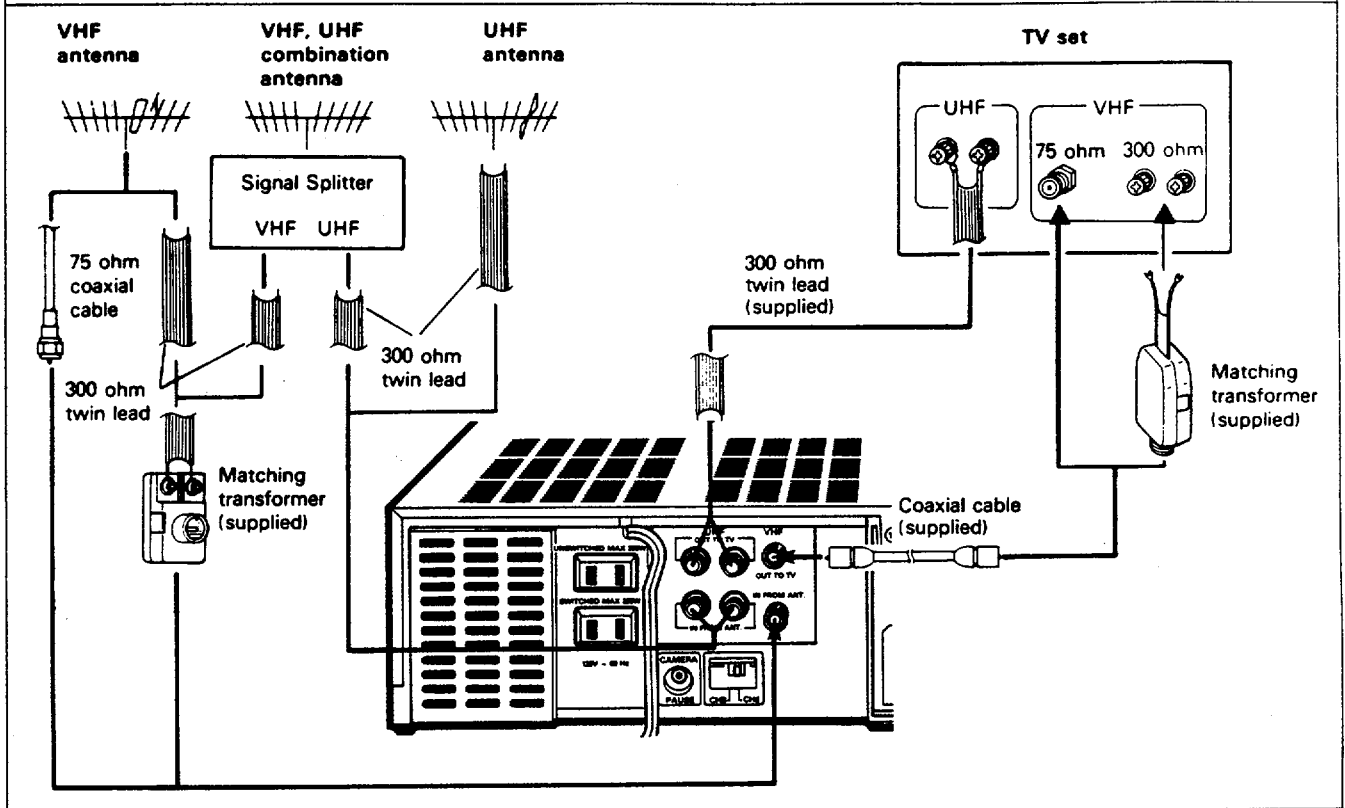
## ① VHF reception area



## ② UHF reception area

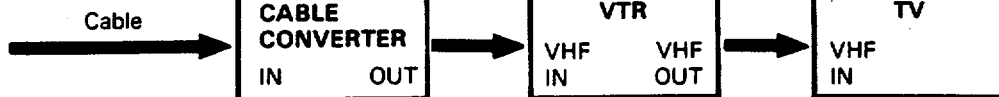


## ③ Both VHF and UHF reception area



## Cable system connection

### Basic method

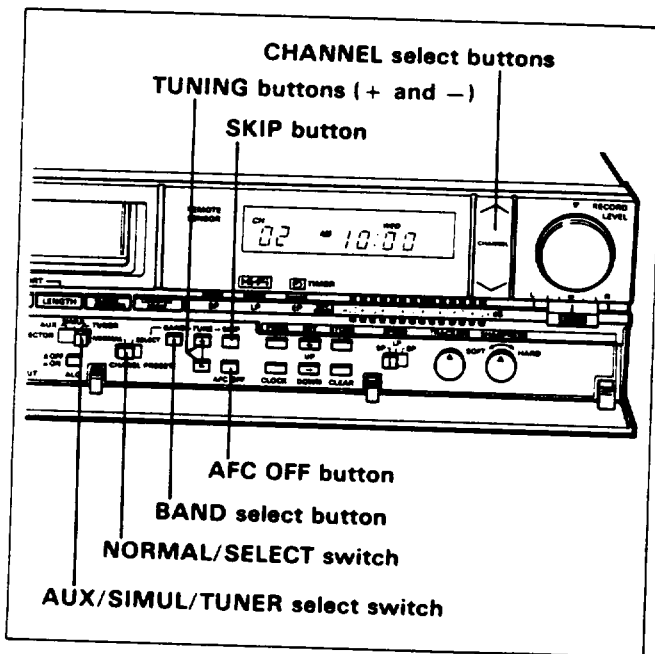


Note: With this connection you can only watch and record the same program. The cable converter must be turned on for recording. Other connections are possible but may require additional antenna accessories which are not supplied. Cable ready VTR models can be used with this connection, but for maximum flexibility of use, additional accessories are required.

# CHANNEL TUNING

Your VTR can be preset for up to 80 memorized channels. It has been preset to receive VHF channels 2 through 13 when shipped. The channel number in the display will originally match the actual TV channel selected. During the procedure which follows, you can reprogram any display channel number, so that it selects any actual TV channel. This means that after programming of the memorized channels, the display can indicate a different number than the actual TV channel tuned by that channel memory position.

You can set any channel memory position to receive any station. This ability is most useful when the tuner is used in CATV installations. To add UHF or CATV channels not factory preset, or to preset the VHF channels in some other order, use the procedure which follows.



1. Turn on the TV and VTR.
2. Set the TV to Channel 3 (or 4). (for your video channel)
3. Set the RF converter switch of VTR to channel 3 (or 4).

4. Open the door for secondary controls.
5. Set the AUX/SIMUL/TUNER select switch to "TUNER".

6. Set the NORMAL/SELECT switch to "SELECT". Time indication will change to band indication.  
**Note:** When the NORMAL/SELECT switch is set to "SELECT", the VTR/TV select switch is switched to the VTR mode automatically.

7. Select the channel number to be memorized by pressing the CHANNEL select buttons.

**Note:**

1. Your VTR can use the following numbers as TV channel presets: 00, 01 through 72, 91, 92, 95 through 99.
2. Your VTR has been preset to receive VHF channels 2 through 13.

3. You should determine which channel memory positions have not been preset before entering programming information. New information automatically erases previous programmed data.
8. Press the BAND select button to select either "L", "H", "C" or "U" according to the channel number as listed below.

Indication on display	Channels to be received
L	VHF low channels 2~6
H	CATV channels A-2, A-1 and A-1 VHF high channels 7~13
C	CATV channels J~W
U	UHF channels 14~83

For example, if you're going to tune one of UHF channels 14 through 83, display the letter "U" by pressing the BAND select button.

9. Press and hold the TUNING button (+) until the picture for the channel number you are programming appears on the TV screen. (For fine tuning tap on the (+) and (-) TUNING buttons alternately.) The active channel with lowest frequency in the band will first appear, followed in sequence by the other active channels, as in the "Channel frequency spectrum" on next page.

**Note:**

1. Holding down the TUNING button (+) at the end of band will result in tuning into the next band. The band display will change to the next higher band.
2. If you press the TUNING button (-) at first, the band will change to adjacent band immediately. The active channel with the highest frequency in the band will first appear, followed in opposite sequence by the other active channels.
3. Speeds of picture scanning from the lowest channel to the highest in each band are as follows;

Band	Speeds
L	About 20 seconds
H	About 40 seconds
C	About 40 seconds
U	About 80 seconds

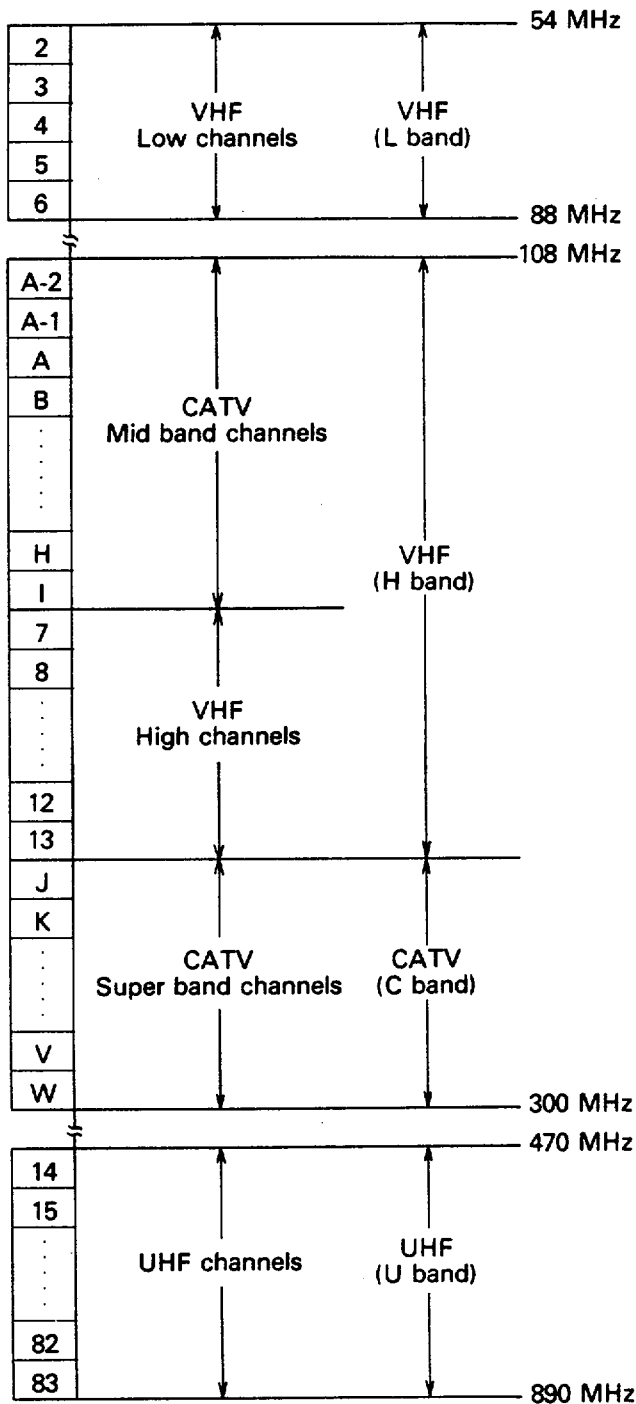
10. After releasing the TUNING button when the channel picture appears for the channel number you are programming, press the up (+) and down (-) TUNING buttons to fine tune the TV channel.
11. Repeat steps 7 through 10 for other channel.
12. Return the NORMAL/SELECT switch to "NORMAL".



13. To check programming, press the CHANNEL select buttons to cycle the VTR tuner through all the channels you have programmed. If a channel was missed or requires fine tuning, repeat above steps for the channel involved.

**Always return the NORMAL/SELECT switch to "NORMAL" after preprogramming is complete.**

### Channel frequency spectrum



### AFC (Automatic Frequency Control)

A channel is fine tuned using up (+) and down (-) TUNING buttons. When the NORMAL/SELECT switch is returned to "NORMAL", AFC is turned on and the channel "locks in". The AFC electronically optimizes the fine tuning adjustment.

If a TV channel signal is marginal due to graininess or ghosting, the picture may sometimes be improved by manually tuning for best picture and then defeating the AFC action. To turn AFC off, follow the procedure below.

### AFC off tuning procedure

1. Make sure that NORMAL/SELECT switch is set to "NORMAL".
2. Select the desired channel on which to disable AFC by pressing CHANNEL select button.
3. Set the NORMAL/SELECT switch to "SELECT".
4. Press the AFC OFF button.  
"AFC" indication will disappear from the display.
5. Return the NORMAL/SELECT switch to "NORMAL".

### Note:

1. The AFC is only switched off for the channel you have been programming. AFC remains in effect on all other channels. To defeat the AFC for additional channels, repeat the above steps.
2. Pressing the AFC OFF button once again will turn the AFC on.

### Eliminating unwanted preset channels

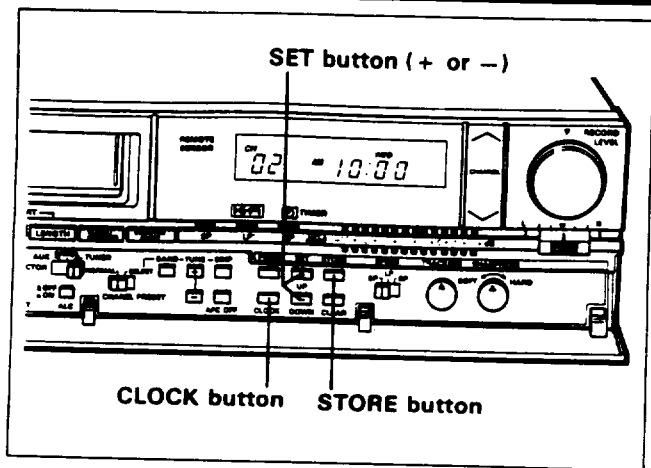
You can rearrange the desired channels by eliminating unwanted preset channels for channel up/down selection.

1. Set the NORMAL/SELECT switch to "SELECT".
2. Press the CHANNEL select buttons until an unwanted channel is tuned.
3. Press SKIP button once.  
Sound will go off indicating the channel has been erased from memory.
4. Repeat steps 1 through 3 until all unwanted channels have been eliminated.
5. Return the NORMAL/SELECT switch to "NORMAL".

Channels which have been eliminated cannot be selected by the CHANNEL select buttons.

**Note:** To restore the erased channel, repeat the above steps 1 through 3.

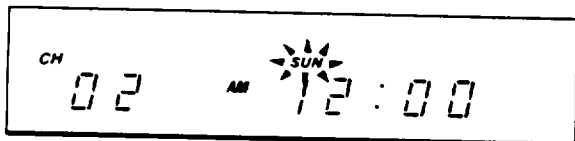
# CLOCK TIME SETTING



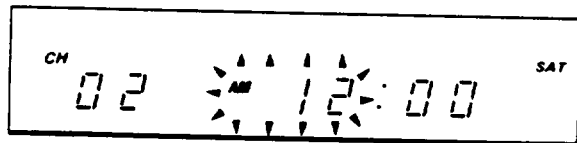
- When VTR is plugged into an AC outlet for first time, the clock display shows "--:--".

The clock is set using the CLOCK, SET and STORE buttons. The CLOCK button selects the clock setting mode. The SET buttons advance the Day, Hours or Minutes. The STORE button stores the Day, Hours or Minutes. After the Day is entered with STORE, the next press of the STORE button will enter the hours, and next press will enter the minutes. To indicate the "DAY" mode, the day will flash. To indicate the "HOUR" mode, the hours digits will flash. To indicate the "MINUTE" mode, the minutes digits will flash. When the STORE button is pressed, the flashing digits will be stored in memory.

1. Turn on power of VTR.
2. Press and hold the CLOCK button while performing steps 3 through 5.

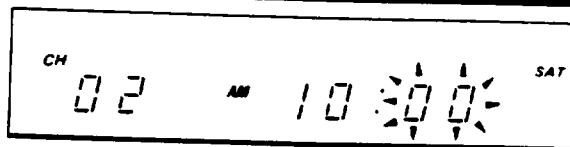


3. Press the SET button (+ or -) repeatedly to select the present day of the week. Hold the button down to advance rapidly. When the present day of the week appears, press the STORE button.



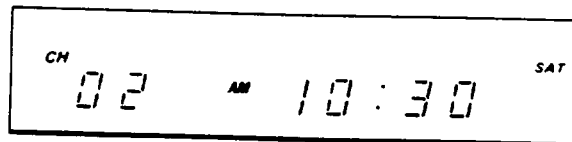
For example, the diagram shows that Saturday (SAT) has been set.

4. Press the SET button (+ or -) to set the present hour. Hold the button down to advance rapidly. Press the STORE button when the present hour appears.



For example, the diagram shows that "AM 10" hour has been set.

5. Press the SET button (+ or -) to set the minute. Hold the button down to advance rapidly. Press the STORE button when the present minute appears.



For example, the diagram shows that "30" minutes has been set.

6. Release the CLOCK button.

Now the clock has been set to the correct time of day.

For zero second setting, set the minutes to one minute ahead of present time and release the CLOCK button when the next minute exactly starts.

- Note:**
- If your clock display shows "--:--", your home had a power failure. The time should be reset.
  - 12:00 AM is midnight; 12:00 PM is noon.
  - The VTR has a built-in power failure compensation circuit which backs up the clocks and the timer programs against the power interruption for about 30 minutes.

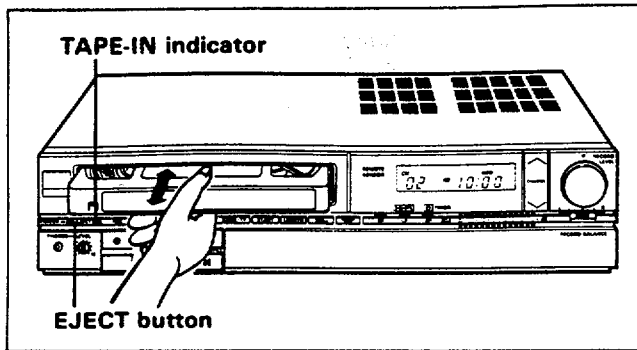
## NORMAL TV VIEWING

You do not need to disconnect VTR from your TV set to watch TV. When you turn off the POWER switch on your VTR, the VTR automatically switches to "TV".

To watch TV, turn on TV and select a channel as usual.

## CASSETTE TAPES

### Insertion and removal of cassettes



Before inserting or removing cassette, be sure to turn the POWER switch on.

**Note:** TAPE-IN indicator lights when cassette is inserted in the compartment.

#### Insertion

1. Insert the cassette.

#### Removal

1. Press EJECT button.
2. Remove the cassette.

#### Types of video cassette

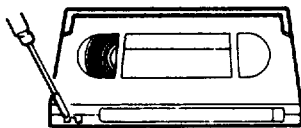
Use video cassettes with the **VHS** mark in this VTR. The table below shows how to distinguish difference in recording time of cassettes.

TYPES	RECORDING TIME		
	SP	LP	EP
T-30	30 min.	60 min.	90 min.
T-60	60 min.	120 min.	180 min.
T-120	120 min.	240 min.	360 min.
T-160	160 min.	320 min.	480 min.

It is recommended that the SPEED select switch of the VTR is set to "SP" to obtain better picture and sound quality when recording a music program.

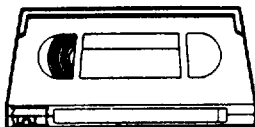
#### To avoid erasing a recording

Break off the safety tab using a screwdriver or similar tool.



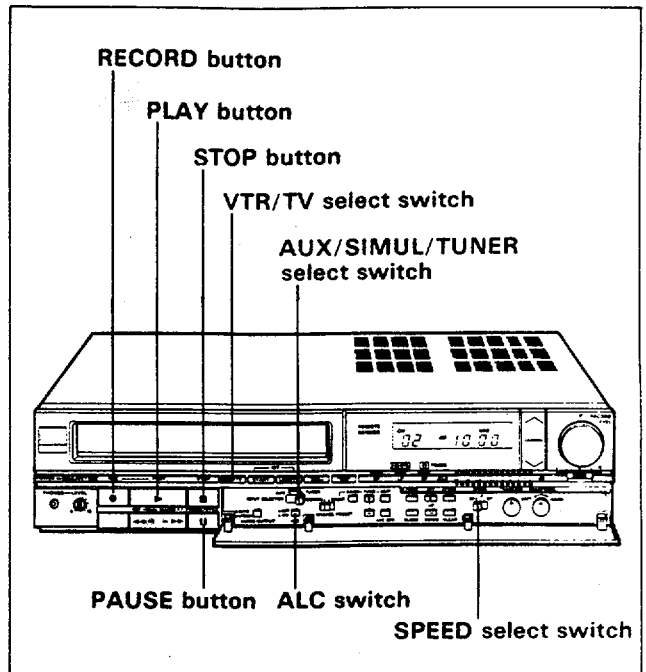
#### To re-record on a cassette which has its safety tab removed

Cover the hole with cellophane tape.



Refer to the instructions included with cassettes for more information.

## RECORDING TV PROGRAMS



If you wish to view a program being recorded, turn on TV and select the channel 3 or 4 for your video channel.

1. Turn on VTR power.

**Note:** When the power is turned on, VTR/TV select switch is switched to the VTR mode automatically.

2. Insert Cassette.

Be sure to check that the record safety tab is not missing.

3. Set SPEED select switch to "SP", "LP" or "EP". It is recommended to set this switch to "SP" when recording a music program.
4. Set the AUX/SIMUL/TUNER select switch to "TUNER".

5. Set the ALC switch to the ON (depressed) position to automatically control the recording level.

See "Recording level adjustment" on page 12 to manually adjust the recording level.

6. Select channel to be recorded.
7. Press RECORD button and while holding RECORD, press PLAY button.
8. Press PAUSE button to stop recording temporarily. Press again to release.

**Note:** To prevent tape damage, do not leave the unit in the pause mode for more than 5 minutes.

9. Press STOP button to stop recording.

#### To record one program while viewing another

You can record one program while viewing another by merely selecting the channel with your TV channel button after setting the VTR/TV select switch to "TV". The recorded program can be viewed later at your convenience.

### To change the channel to be recorded while in record mode

During recording, the channel lock function operates and channel cannot be changed if the CHANNEL select button is pressed.

If you wish to change channel during recording, proceed as follows.

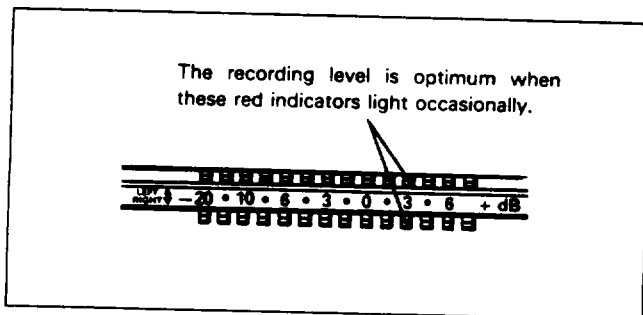
1. Press the PAUSE button.
2. Change channel desired.
3. Press the PAUSE button to release record pause mode.

### Recording level adjustment

When recording is performed with the Automatic Level Control (ALC) switch set to ON (depressed), the sound is automatically recorded at the optimum level.

However, when recording sound from audio equipment, sound may be more faithfully recorded and played back by manually adjusting the recording level with the ALC switch set to OFF (released).

To adjust the audio recording level, place the ALC switch in the released (OFF) position, then adjust the Recording level control so that the red indicators near 3 dB light occasionally, when especially loud portions are being recorded.



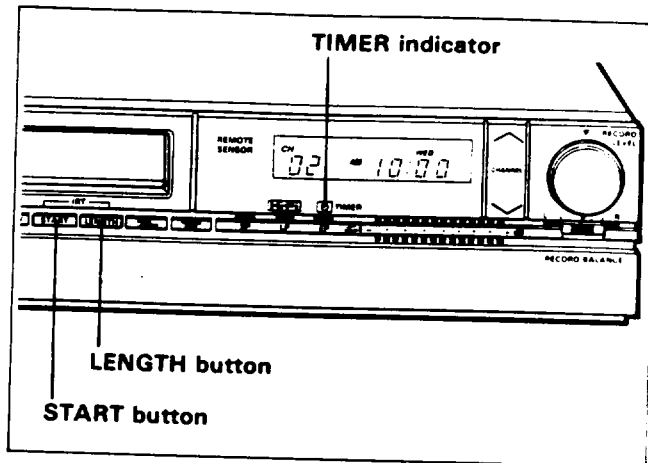
### Recording Balance Control

To change the recording level balance between the left and right channels when adjusting the recording level manually with the ALC switch turned off, slide this control for optimum balance.



## INSTANT RECORDING

Instant recording timer (IRT) allows you to start an unattended recording without programming the timer. It is convenient if you are interrupted while viewing a program and want to record the balance of it. By using the delayed start feature you can delay the recording start up to 24 hours. Although you do not need to program the timer for IRT, the clock must be set.



### IRT with immediate start

1. Follow the steps 1 through 6 on "RECORDING TV PROGRAM".
2. Press the LENGTH button to select the recording time. Pressing the button once sets the timer to "0:00". The recording time changes in hour and minute in the order of 0:30, 1:00, 1:30, 2:00, 3:00 and 4:00 every time the button is pressed. The TIMER indicator will come on, and IRT will begin when 0:30 is displayed. During recording, the remaining IRT time appears on the timer display.
3. At the end of recording the display reads 0:00; the VTR will automatically shut off.

**Note:** The IRT feature does not operate during play and after a program timer recording has started as programmed. During rewind mode, the IRT recording will automatically start after the tape is rewound fully to the end.

### Delayed start IRT

You can delay the start of an IRT by using the START button.

1. Follow the steps 1 through 6 on "RECORDING TV PROGRAM".
2. Press the START button to set the start time. The start time may be set to begin on any hour or half hour, up to 24 hours from present. For example, the present time is 9:15 PM and you want to record a program that starts at 10:30 PM. Just press the START button three times.
3. Press the LENGTH button repeatedly to select the desired recording time. The recording time changes in hour and minute in the order of 0:30, 1:00, 1:30, 2:00, 3:00 and 4:00 every time the button is pressed.

## PLAYBACK

### 4. Turn off the VTR power.

The TIMER indicator will come on. The recording will start at the time you have selected and will automatically stop with the display reading "0:00", which will then be reset to the present time of the day.

#### Note:

1. To stop the VTR during IRT, press LENGTH button until the timer display reads "0:00" or press POWER button once and STOP button within ten seconds.
2. To change the IRT program, the previous information must be first cleared. (See below)
3. If IRT and the program timer recording overlap, the former will override the latter.
4. The recording time can be extended any time during IRT by pressing LENGTH button. The timer display will be reset to 0:30, 1:00, 1:30, 2:00, 3:00 or 4:00 as selected.

### Recalling the IRT program

Press START and LENGTH buttons respectively for recalling the starting time and the recording time. In about 8 seconds the displays return to the present time of the day or the counter reading if the power is on with the counter reading having been previously displayed.

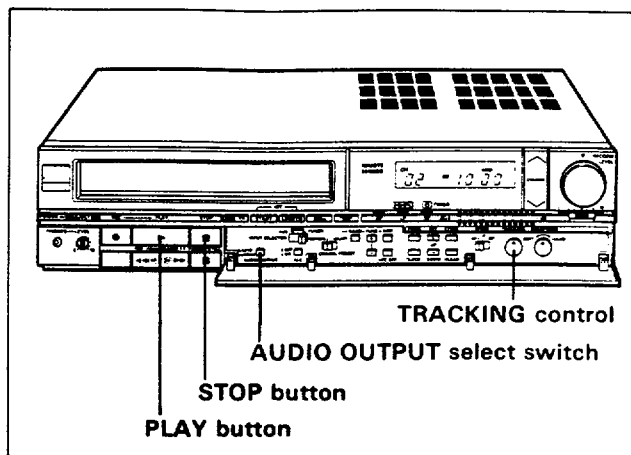
#### Notes:

1. To recall the recording time, press LENGTH button only once. Pressing more will change the recording time and cause a need for resetting.
2. POWER button may be on or off.

### To clear IRT program

Press LENGTH button as many as may be required to indicate "0:00" on the display. After approximately 8 seconds the display will show the present time of the day or the counter reading, and IRT has been now cleared.

**Note:** POWER button may be on or off.



1. Turn on VTR.
2. Turn on TV and select the video channel.
3. Set AUDIO OUTPUT select switch to "AUTO".
4. Insert the cassette.
5. Press the PLAY button.
6. Press the STOP button to stop playback.

### Tracking control adjustment

When playing prerecorded tapes or those recorded on units other than your own, black and white streaks may appear on your TV screen. If this occurs, turn the TRACKING control slowly in either direction until the streaks disappear. When playback of this particular tape is over, readjust the TRACKING control to its original position. The original position is normally in the center position.

**Note:** When a scratching noise is heard during playback of Hi-Fi VHS audio (with Hi-Fi indicator lit), turn this control to adjust for optimum sound.

### Still playback

Press the PAUSE button to stop the picture on the screen during playback.

During still playback, press the PAUSE button to return to normal playback, or the STOP button to stop the tape.

#### Note:

- If you see vertical shaking on the TV screen in the still playback mode, rotate the V. LOCK control on the bottom of the video deck using a screwdriver (provided) to minimize shaking.
- When the still playback mode continues for about 5 minutes, the video deck switches to the stop mode automatically to prevent damage to the tape.
- The playback picture will have some noise in the still playback mode.

### Visual search

This allows you to view the picture from a recorded tape at high speed in both the forward and reverse directions.

Press the PLAY button to play a tape, then press either the VISUAL SEARCH button REW or F.FWD. Pictures can be viewed at high speed in either the forward or reverse direction.

**Note:** The playback picture will have some noise in the visual search mode.

### Automatic rewind

The tape will stop and automatically rewind when the end of the tape is reached.

This function does not operate during Timer recording and Instant recording.

### Rewind shut off

If power switch is pressed during rewind operation, power will be turned off automatically after the tape has been completely rewound.

### Tape counter

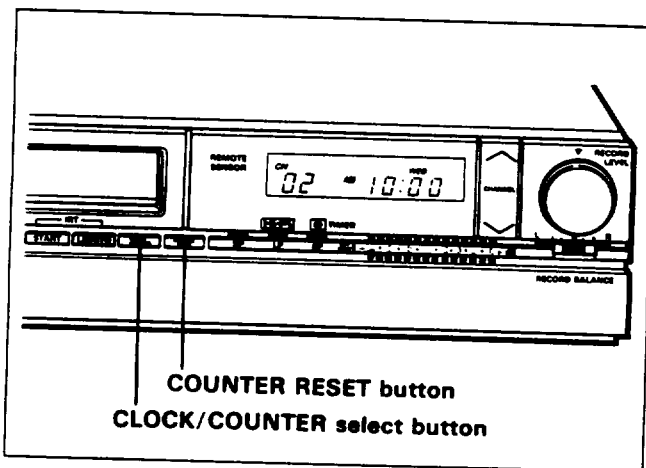
This indicates the amount of video tape transported as a number.

Press the CLOCK/COUNTER select button to indicate the counter reading on the display. Then press the COUNTER RESET button to set the counter reading to "0000" when starting recording or playing back.

Note the number on the Tape counter at the beginning and end of each program you record. This will allow you to use the counter to find the desired program later.

### Counter memory function

This is useful if there is a section of tape you want to view immediately after recording or you want to return to the same point several times.



1. Press the CLOCK/COUNTER select button and indicate the counter reading.
2. Begin recording or playing back a tape.
3. At the point where you want playback to begin, reset the tape counter to "0000" by pressing the COUNTER RESET button.
4. Continue to play or record.
5. Press the STOP button when recording or playback finishes.
6. Press the REWIND button.

The tape will automatically stop at the pre-selected "0000" position.

Actually the tape will stop slightly prior to "0000" at approximately the "9997" position to avoid missing the very first part of the program.

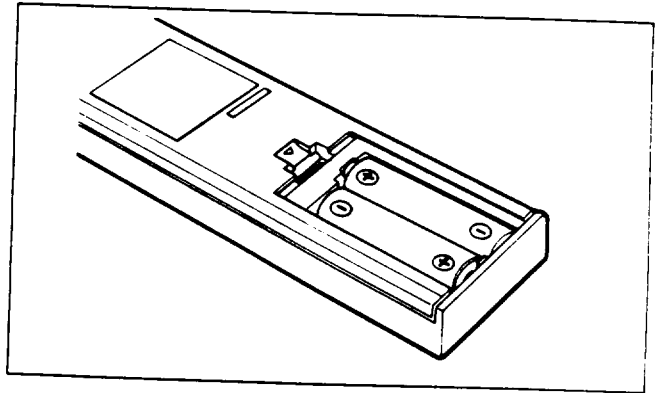
**Note:** With CLOCK/COUNTER select button in "CLOCK", counter memory will not operate.

## REMOTE OPERATION

You can operate the VTR from a distance using the Infrared Remote Control unit.

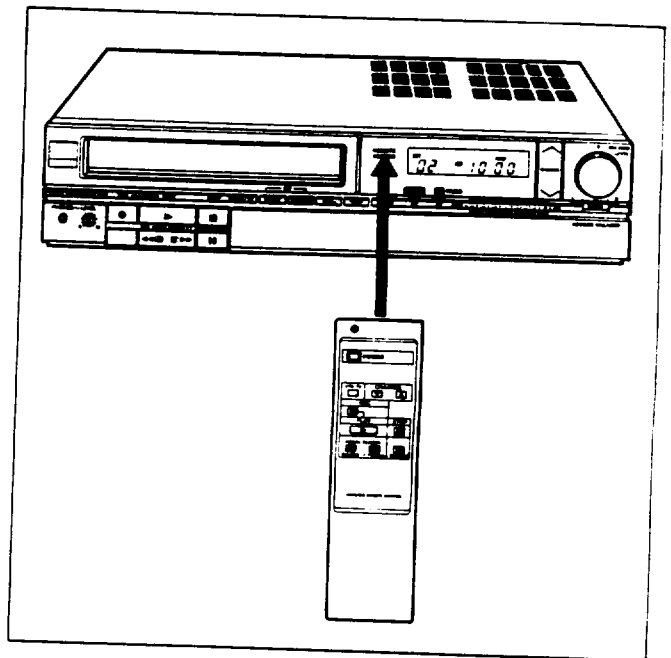
### Power source of infrared remote control unit

The infrared remote control unit is powered by two batteries (size AA). The life of the batteries is about one year although it depends on the numbers of times the unit is used. Replace the batteries when operation is not possible or when the distance becomes too short.



### Operation of remote control

To use the infrared remote control unit aim it at the receiver on the front panel of the VTR.

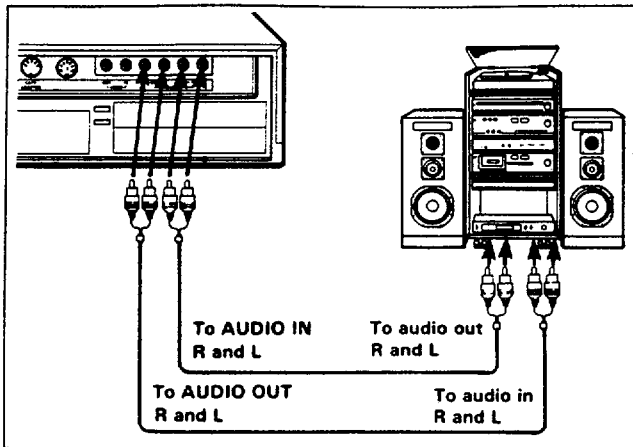


**Note:** The infrared rays will bounce off the walls and eventually reach the receiver on the VTR, but for best results transmit rays directly to the receiver.

## RECORDING AND PLAYBACK OF SIMULCASTS

Simulcast recording allows you to record a program which is being transmitted simultaneously by a television station and a radio station in stereo. For simulcast recording and stereo playback, you will need audio cables.

### CONNECTIONS



In order to record and play stereo audio with a stereo system, the amplifier or receiver must have an unused set of tape record (L and R) jacks and tape play (L and R) jacks. Some systems have a set of tape jacks for two tape decks, other systems have jacks for only one deck.

If your system has connections for only one deck, and you already have an audio deck connected, you will need to obtain an accessory for connecting multiple audio decks. Please consult your audio dealer.

If you have connections for two tape decks, your audio deck can remain connected to the tape-1 connectors, and you may connect your video deck's audio connections to the jacks for tape-2. The tape record (L and R) jacks of your amplifier should be connected to the Audio Inputs (L and R) of your VTR, and the VTR's Audio Outputs (L and R) connected to the amplifier's tape play jacks. Select the tape switch on the amplifier which matches the VTR's tape connections.

### To record simulcasts

1. Connect the audio cable to the AUDIO IN (R and L) jacks of your VTR and to the audio output jacks (right and left) of your stereo system.
2. Set the FM tuner of the stereo system to the FM station broadcasting the simulcast stereo audio.
3. Then follow the steps for RECORDING TV PROGRAMS (page 11) except set the AUX/SIMUL/TUNER selector behind the Secondary controls door to "SIMUL".
4. If you want to listen to the program in stereo while recording, turn down the sound of your TV and turn up the sound of your stereo system.

### To playback in stereo

1. Connect the audio cable to the AUDIO OUT (R and L) jacks of your VTR and to the audio input jacks (right and left) of your stereo system.
2. Then follow the steps for PLAYBACK (page 13), turning down the sound of your TV.

**Note:** For operation of your stereo system, see its operation manual.

### To use the unit as an audio deck

Hi-Fi sound can be enjoyed using this VTR as an audio deck when connected to an audio system.

1. Connect this VTR and the stereo system as for "RECORDING AND PLAYBACK OF SIMULCASTS".
2. Turn on POWER switch of VTR.
3. Insert a cassette.
4. Set SPEED selector on VTR to "SP", "LP" or "EP".
5. Set the AUX/SIMUL/TUNER selector switch to "AUX".
6. Set the ALC switch to the ON (depressed) position to automatically control the recording level. See "Recording level adjustment" on page 12 to manually adjust the recording level.
7. Press RECORD button and while holding it down, press PLAY button.
8. To stop recording, press STOP button.
9. To playback rewind tape and set the AUDIO OUTPUT switch to "AUTO", then press PLAY.

### Note:

1. It is not required to turn the TV on.
2. Only audio is recorded and video is not recorded when no connection is made for the video in jack.

**Note:** When the power cord of your stereo system is plugged into the switched AC outlet of the VTR, the power of the stereo system is turned on automatically when the VTR power is turned on or the timer operates. However, this switched AC outlet limits power to a maximum of 200W. Therefore, be sure not to use equipment which uses more power than 200W.

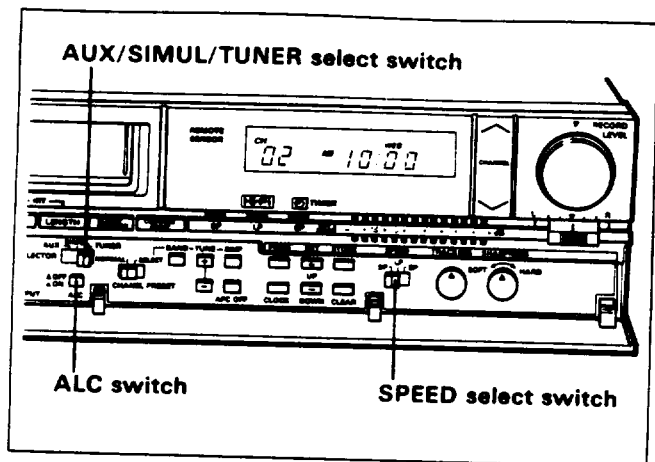
## HOW TO USE AN MTS ADAPTER

By connecting an optional MTS adapter, you can record stereo TV broadcasts.

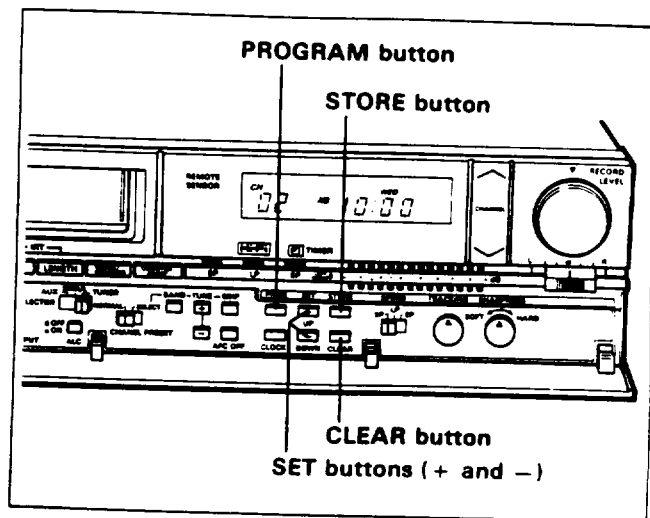
See the instruction of the MTS adapter for details.

## TIMER RECORDING

The programmable electronic clock/timer permits the unattended recording of up to 3 preselected programs, plus one program on the same day of each week. It can be preset up to 14 days in advance to record your favorite programs. It turns the unit on and off and changes channels automatically.



**Programming the timer for unattended recording**  
For unattended recording the timer needs to know what day to make the recording, the time to start, the time to stop, and the channel to be recorded.



- You do not have to turn on the TV to make a recording because the VTR records TV programmes without the aid of your TV. Turn it on only when monitoring.

- Turn power on.
- Insert the Cassette.
- Set the SPEED select switch to "SP", "LP" or "EP".  
**Note:** It is recommended to set to "SP" when recording a music program.
- Set the AUX/SIMUL/TUNER select switch to "TUNER".
- Set the program timer.  
"START (ON) TIME", "STOP (OFF) TIME", "DAY" etc. See below.
- Turn power off. Now recording will begin automatically at the start time.

### Note:

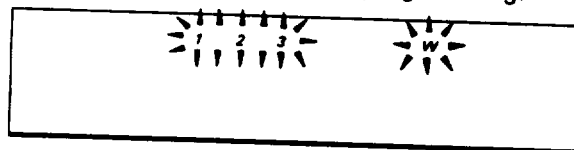
- It is not necessary to press PLAY and RECORD buttons.
- The TIMER indicator flashes to warn that recording will not occur because cassette has not been inserted. If the safety tab on the cassette has been removed, the VTR will automatically eject the cassette when placed in the Timer mode.

The timer is programmed using the PROGRAM, SET and STORE buttons. The PROGRAM button selects the timer programming mode. The SET buttons advance the Program indicators, Channel, Day, Hours or Minutes for recording. The STORE button stores them. The digits flash in sequence, so input the correct data to the flashing digits. When the STORE button is pressed, the flashing digits will be stored in memory. If you input erroneous information by mistake when programming the timer, press the CLEAR button and input the correct information again.

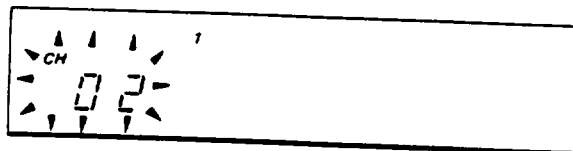
- Press the PROGRAM button.

Program indicators (1 through 3 and W) flash to indicate which memory positions have not been programmed. If a memory has been programmed, its indicator will not flash.

**Note:** You should determine which memory positions have not been programmed before entering new programming information. New information automatically erases previous programming.



- Press the SET button (+) repeatedly until the desired program indicator lights. Press the STORE button when the desired program number is displayed.



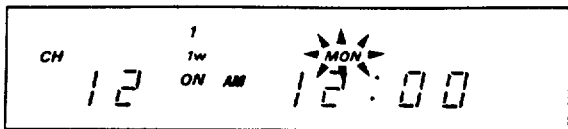
For example, diagram shows program "1" has been set.

To record on a specified day at the same time each week. Press the SET button (+) until the "W" indicator lights. Then press the STORE button.



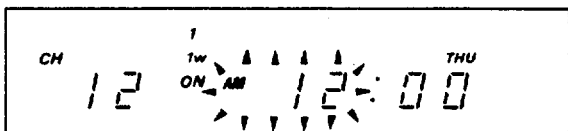


- Choose the channel to be recorded by pressing the SET (+ or -) or CHANNEL select button. Then press the STORE button.



For example, diagram shows channel "12" has been set.

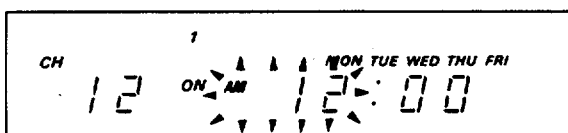
- Press the SET button (+ or -) to select the day of recording. Make sure desired Week indicator (1W or 2W) lights. Continuing forward will advance timer to Week two. Press the STORE button after selecting the day of recording.



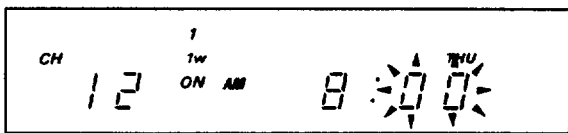
For example, diagram shows recording on Thursday within 1 week from today.

To record at the same time on Monday through Friday:

Press the SET button (+ or -) until Monday through Friday indicators light, then press the STORE button.

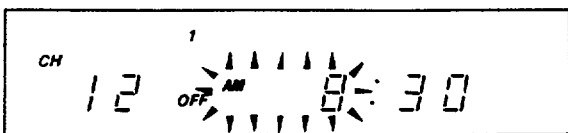


- Select the hour for recording to start by pressing the SET (+ or -) button. Hold down button to advance rapidly. Press the STORE button after selecting the hour for recording to start.



For example, the diagram shows "AM 8" hours has been set.

- Select the minutes for recording to start by pressing the SET button (+ or -). Hold down button to advance rapidly. Press the STORE button after selecting the minute for recording to start.



For example, the diagram shows "30" minutes has been set.

- Select the hour and minute to stop recording in the same procedures described in steps 5 and 6. Be sure to press the STORE button after selecting the minute.

Now one programming has been completed. Display shows the start time when pressing the STORE button. After a few seconds the display shows stop time, the display returns to clock together with letters "PROG" automatically.

"PROG" shows that timer has been programmed; it lights whenever the timer-programming is done regardless of whether the power ON/OFF. To set the next programme, repeat steps 1 through 7.

**Note:** If a power failure occurs and the clock display shows "--:--", programming information previously set is cleared. The programming information should be reset.

#### To clear a program

- Press the SET button (+) until desired program indicator lights. Then start time appears on the display.
- Press the CLEAR button.

The display returns to clock to show that the programming has been cleared. Be sure to press the CLEAR button while the display shows the start or stop time. The programming does not clear if the CLEAR button is pressed when the display returns to clock.

#### To stop a timer recording while in progress

Press the POWER button and then press the STOP button within 10 seconds.

The program that was being recorded will be erased from the timer's memory.

#### To check programming

Press the SET button (+).

The program indicator "1" lights. If the program No. 1 has been already programmed, the "ON" indicator lights and the clock/timer display shows the starting time. Then the "OFF" indicator lights and the display automatically shows the time to stop recording in a few seconds with the channel number to be recorded lighting up. The display then automatically returns to the present time of day.

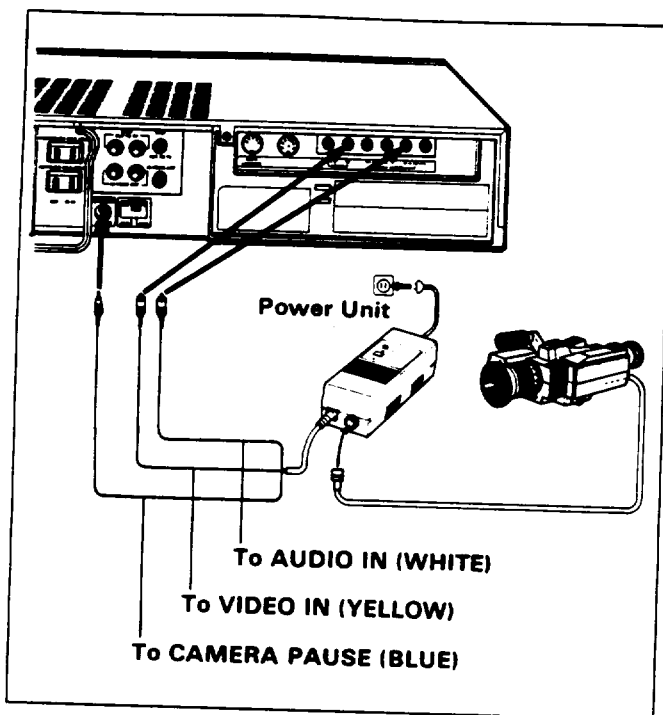
#### Programming errors

- If you make an error during programming, press CLEAR button to return to the previous step and resume the programming.
- If programs overlap, the video deck will select the program with the earliest start time. When that program is over, the video deck will switch to the next program. If the start times are the same, the video deck will select the programs in numerical order.

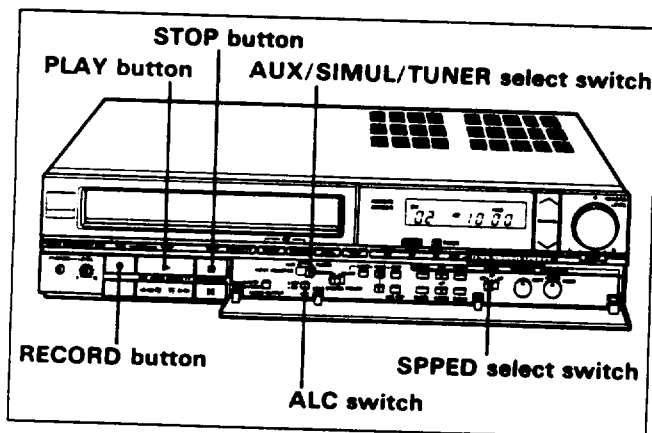
## RECORDING FROM A VIDEO CAMERA

You will need a Video Camera and Power Supply for Video camera. At first you must connect the Video Camera with Power Supply and then connect Power Supply with Video Deck. (Refer to the Instruction Manual of the Camera as well as these instructions.)

### Connection diagram



### Operation procedure



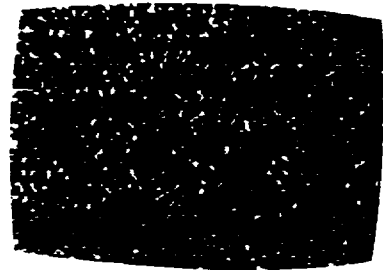
1. Turn on both POWER switches of Power Unit and video deck.
2. Insert cassette.
3. Set the SPEED select switch to "SP", "LP" or "EP".
4. Set the AUX/SIMUL/TUNER selector to "AUX".
5. Set the ALC switch to the ON (depressed) position to automatically control the recording levels.
6. Adjust focus and white balance on camera. (Refer to Instruction Manual of video camera.)
7. Press RECORD button and, while holding RECORD, press PLAY.

8. Press start/stop button on Camera. Recording begins.
9. Press start/stop button again to stop recording temporarily.
10. Press STOP button of video deck to stop recording.

**Note:** The start/stop button on a PENTAX video camera can be used to start and stop the video deck. It has priority over the PAUSE button of the video deck. When the start/stop button on the camera is set to PAUSE, recording or playback will not start when the PAUSE button of the video deck is released. The start/stop button must be released in this case.

## HEAD CLEANING

- Picture playback may become blurred or be interrupted while the TV program received is clear. This does not mean that the recorded program has been erased.
- Dirt accumulated on the head after long periods of use causes this problem. In this case, head cleaning requiring highly technical care is necessary.
- For head cleaning, consult the nearest dealer or VTR Service Center for recommendations.



## PERIODIC MAINTENANCE

The Video Deck is a precision electromechanical device which will require periodic maintenance after a period of normal use. We expect that no maintenance other than head cleaning will be required during the warranty period by most users, unless the Deck is heavily used or seldom used. Normal maintenance is the responsibility of the user, although defective parts are covered during the warranty period. Consult your VTR Service Center to determine recommendations for normal maintenance based on your location, use patterns and machine age.

# PROBLEM GUIDE

PROBLEM	THINGS TO CHECK	SOLUTION
No power	<ul style="list-style-type: none"> <li>• Is power cord connected?</li> </ul>	<ul style="list-style-type: none"> <li>• Connect power cord with AC outlet.</li> </ul>
Timer recording is not possible.	<ul style="list-style-type: none"> <li>• Is the program timer set correctly?</li> <li>• Is the POWER switch set to "OFF"?</li> <li>• Is the record safety tab missing?</li> </ul>	<ul style="list-style-type: none"> <li>• Set the program timer correctly.</li> <li>• Set the POWER switch to "OFF".</li> <li>• Place cellophane tape over missing safety tab.</li> </ul>
REC mode cannot be engaged.	<ul style="list-style-type: none"> <li>• Is the record safety tab missing?</li> </ul>	<ul style="list-style-type: none"> <li>• Place cellophane tape over missing safety tab.</li> </ul>
Picture is poor on playback.	<ul style="list-style-type: none"> <li>• Is the TV channel selector on the proper channel?</li> <li>• Is the TV fine tuning set correctly?</li> </ul>	<ul style="list-style-type: none"> <li>• On playback, the TV channel selector should be on channel 3 or 4.</li> <li>• Fine tune your TV.</li> </ul>
Noise in picture on playback	<ul style="list-style-type: none"> <li>• Are Video Heads clean?</li> </ul>	<ul style="list-style-type: none"> <li>• Head cleaning is necessary.</li> </ul>
No picture on playback	<ul style="list-style-type: none"> <li>• Is the TV set to the proper channel?</li> </ul>	<ul style="list-style-type: none"> <li>• Set to correct channel, CH3 or 4. (for your video channel)</li> </ul>
Playback picture is partially noisy.	<ul style="list-style-type: none"> <li>• Is the TRACKING control set to center position?</li> </ul>	<ul style="list-style-type: none"> <li>• Adjust TRACKING control for better picture.</li> </ul>
TV program cannot be recorded.	<ul style="list-style-type: none"> <li>• Is the AUX/SIMUL/TUNER select switch set to "TUNER"?</li> </ul>	<ul style="list-style-type: none"> <li>• Set to "TUNER".</li> </ul>
Off-the-air TV programs cannot be seen.	<ul style="list-style-type: none"> <li>• Is connection correct?</li> <li>• Is the AUX/SIMUL/TUNER select switch set to "TUNER"?</li> </ul>	<ul style="list-style-type: none"> <li>• Connect correctly.</li> <li>• Set to "TUNER".</li> </ul>
Recording with camera is not possible.	<ul style="list-style-type: none"> <li>• Is the AUX/SIMUL/TUNER selector set to "AUX"?</li> </ul>	<ul style="list-style-type: none"> <li>• Set it to "AUX".</li> </ul>
Hi-Fi sound is not heard entirely or is interrupted.	<ul style="list-style-type: none"> <li>• Is the AUTO/LINEAR Select switch set to "AUTO"?</li> <li>• Is the tracking control set properly?</li> <li>• Are the rotary heads (Hi-Fi audio heads) dirty? Only the NORMAL sound is played back when the tape is traced with dirty heads.</li> <li>• Is the tape played back old or scratched?</li> </ul>	<ul style="list-style-type: none"> <li>• Set the switch to "AUTO".</li> <li>• Turn the control gradually to adjust for optimum sound. Return it to the center position after playback is completed.</li> <li>• It is necessary to clean the heads. Consult your nearest dealer or service center.</li> <li>• Replace the tape. Record audio on a new tape and play it back.</li> </ul>

# SPECIFICATIONS

Recording:	Rotary two head Helical Scan Azimuth Recording
Video:	NTSC Color EIA Standard
Cassette:	VHS Type
Heads:	2 video heads for SP/LP/EP 2 Hi-Fi audio heads 1 Full track audio/video erase head 1 Combination head for control track, audio erase and audio record/play (3 heads/single housing)
Tape Speed:	33.35 mm/sec (SP), 16.67 mm/sec (LP), 11.12 mm/sec (EP)
Tape Width:	12.7 mm
RF Output:	Channel 3 or Channel 4
RF Input:	VHF 75 ohm, UHF 300 ohm
Tuning Range:	VHF LOW, CH2 ~ 6 (54 MHz - 88 MHz) VHF HIGH, CH7 ~ 13 (174 MHz - 216 MHz) VHF MID. CH A-2, A-1 and A ~ 1 (108 MHz - 174 MHz) CATV VHF SUPER CH J ~ W (216 MHz - 300 MHz) CATV UHF CHANNELS, 14 ~ 83 (470 MHz - 890 MHz)
Video Input:	1 - 2 Vp-p 75 ohm Unbalanced
Video Output:	1 Vp-p 75 ohm Unbalanced
Video Recording S/N:	Better than 46 dB (SP), Better than 43 dB (LP), Better than 40 dB (EP)
Horizontal Resolution:	240 lines (SP), 230 lines (LP), 230 lines (EP)
Audio	
Input:	316 mV rms (-7.8 dB) 100 kohm
Output:	Line: 316 mV rms (-7.8 dB) 600 ohm Headphone: 8 ohm 3.5 mm $\phi$
S/N Ratio:	42 dB (SP)
Frequency Range:	100 Hz to 8 kHz (SP)
Hi-Fi Audio	
Frequency Range:	20 Hz to 20 kHz
Dynamic Range:	More than 80 dB
Wow and Flutter:	Less than 0.005% WRMS
Power Input:	AC 120V 60 Hz
Power Consumption:	43W Nominal
Cabinet Size:	17-1/8"(W) x 3-7/8"(H) x 14-7/16"(D) 43.5(W) x 9.9(H) x 36.6(D) cm
Weight:	19.4 lbs (8.8 kg)
Accessories:	1 - Coaxial cable with F-type connectors 1 - UHF twin lead 1 - Matching transformer 300 - 75 ohm 1 - Matching transformer 75 - 300 ohm 1 - Infrared remote control unit 2 - Batteries 1 - Adjustment screwdriver

Design and Specifications subject to change without notice.

## PENTAX

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