

PENTAX

VHS REMOVABLE VIDEO SYSTEM

SYSTEM VIDEO

2200A Hi-Fi

(MODEL PV-R2200A PV-U2200A)

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

- Portable VTR is removable from the tuner main frame
- Programmable channel memory with voltage synthesized stereo tuner
- Second Audio Program (SAP) can be recorded
- On-screen display
VTR operating modes, channel, counter, time remaining, date, day and time in addition to clock set and programming instructions for unattended recording are displayed on the TV screen. Clock/Timer programming graphics guide you through each step.
- Hi-Fi VHS recording (see page 4)
- 5 + 2 Head
5 Video heads
 - For SP mode: 2 exclusive heads
 - For LP/EP modes: 2 exclusive heads
 - For special effects: 1 exclusive head2 Hi-Fi audio heads
- Setting eight programs/one year is possible with built-in programmable timer
- Recording level control
- Infrared remote control with special effects
- Tuning ability for cable system channels A-5 through W+23
- Instant recording timer (IRT)
- Fine still playback picture
- Soft touch control with microprocessor
- Maximum 8 hours recording/playback
- Auto-tracking control

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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 humidity detector unit built in. When the Deck is exposed to a rapid temperature change from cold to warm, some condensation will occur. When moisture is present, stop indicator light will flash. While this light is on, the VTR will not operate. Under these circumstances allow at least 2 hours for the Deck to dry out. When light stops blinking, the VTR can be operated.

Hi-Fi VHS

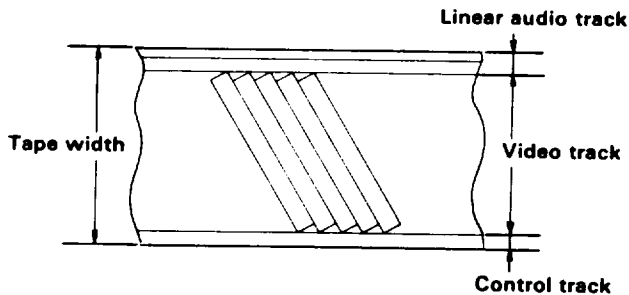
Hi-Fi VHS video recorders record sound using two systems simultaneously.

One system records the audio signal 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

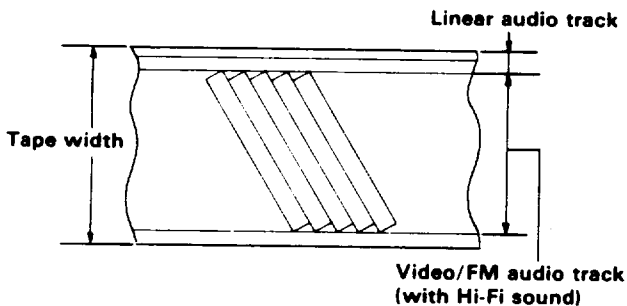
• Conventional recorder

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

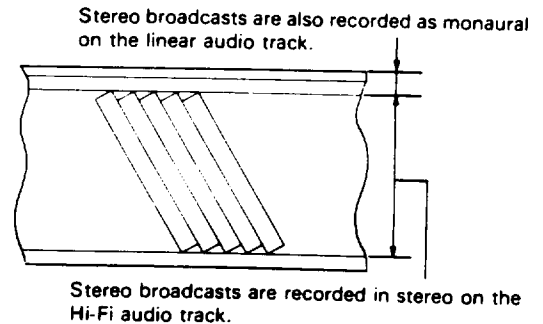
In addition to these advantages since the two rotary heads are used to record and play back the audio signals, the relative speed of the tape and heads is 520 times the relative speed of the tape and head in the linear audio track in the EP mode so that wow and flutter is below the measureable limit.

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

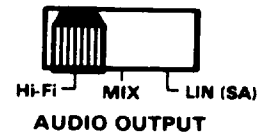
Because the audio signal is recorded on the linear audio track together with the Hi-Fi signal, tapes recorded by this recorder can be played back on conventional recorders and tapes recorded by other recorders without Hi-Fi can be played by this recorder.

4. Stereo recording

- 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.



• AUDIO OUTPUT SWITCH



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

When a tape recorded on both Hi-Fi and linear audio tracks (for example, the tapes recorded with your VTR PV-R2200A) 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.

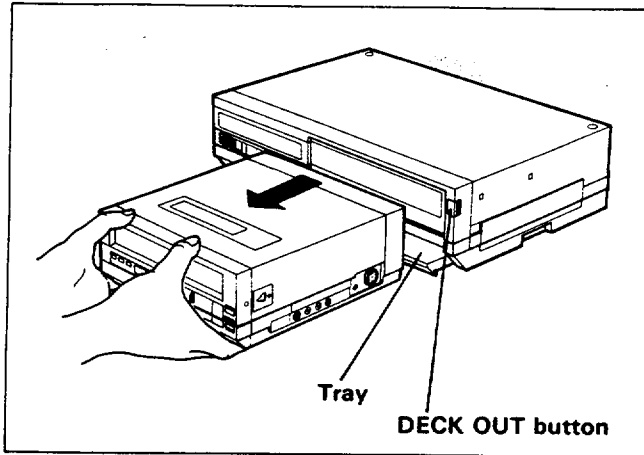
When the switch is set to the "LIN (SA)" position, only the "Linear" audio track is played, even if the tape was recorded with Hi-Fi audio tracks.

When the switch is set to the "MIX" position, both Hi-Fi and linear audio tracks are played back.

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.

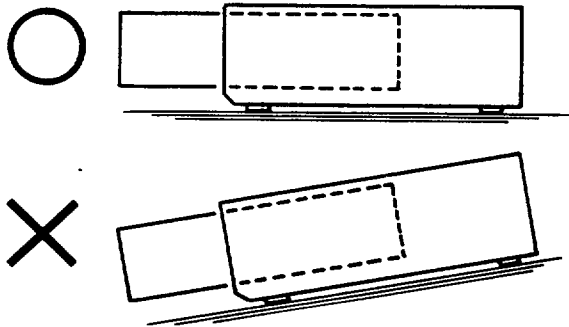
REMOVING AND MOUNTING PORTABLE VTR



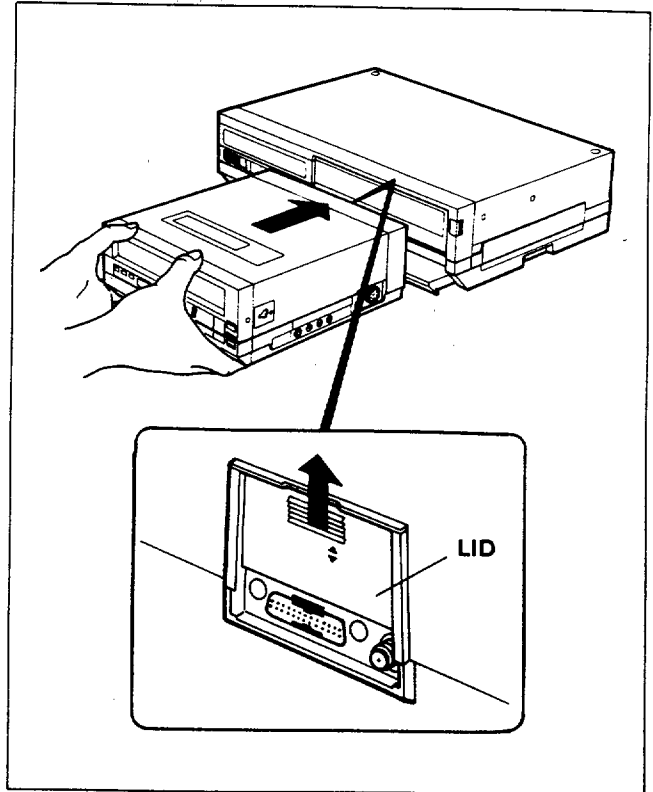
- Press the DECK OUT button. The portable VTR is ejected a little toward the front. Take out the VTR.
- If the tray obstructs you after the portable VTR is taken out, push it in until a click is heard.

Cautions:

Be sure to place the tuner main frame horizontally when ejecting the portable VTR. Do not tilt the tuner main frame with the portable VTR ejected as the portable VTR drops out.



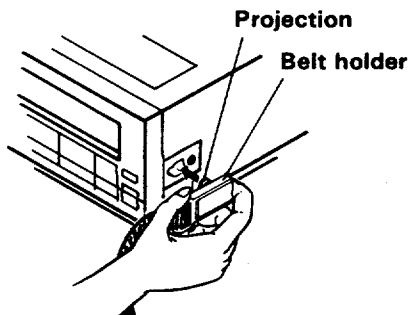
- Mounting the Portable VTR



- Confirm that the lid on the rear of the portable VTR opens and push the portable VTR straight into the tuner main frame firmly until a click is heard.
- Press the DECK OUT button to pop out the tray, mount the portable VTR on the tray, then push it into the tuner main frame. You can easily mount the portable VTR.

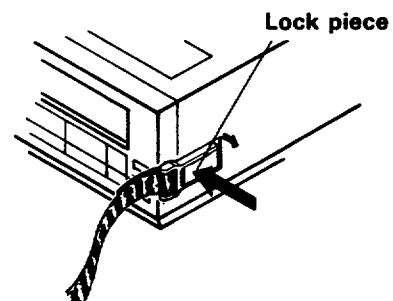
■ USING THE SHOULDER BELT

To Install the Shoulder Belt



Attach each projection of the belt holders to the mounting holes on the sides of portable VTR and pull it forward until the projections are locked.

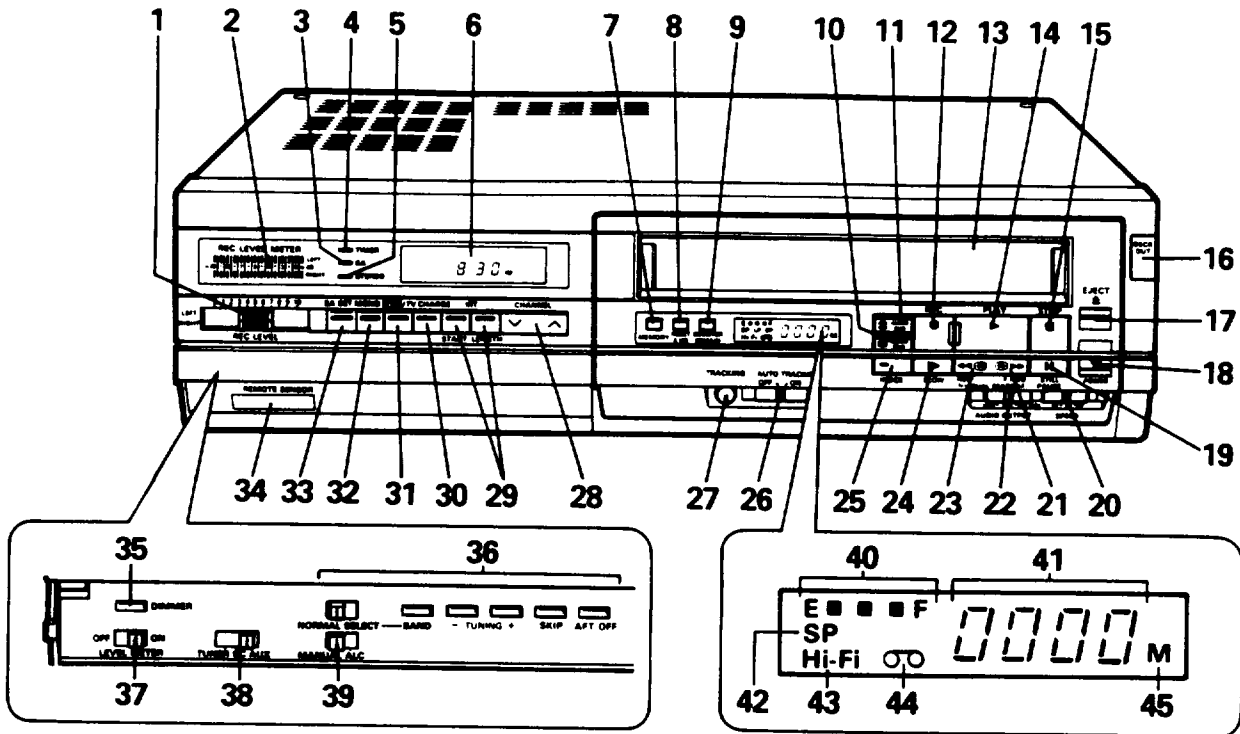
To Remove the Shoulder Belt



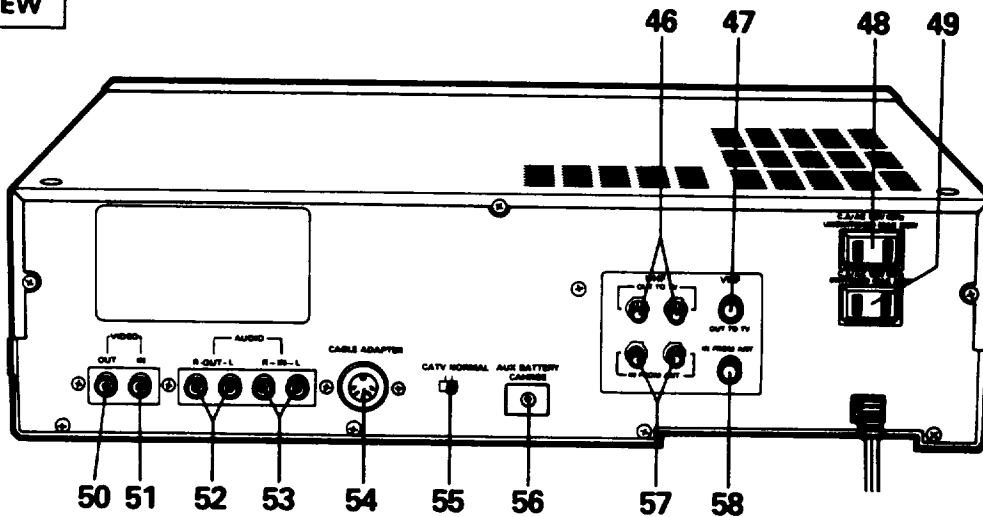
Slide the belt holder backward while pressing the lock piece.

CONTROLS AND FEATURES

FRONT VIEW



REAR VIEW



1. RECORDING LEVEL CONTROLS

When recording with the ALC switch set to MANUAL, adjust these controls so that 3 red segments light occasionally (during especially loud portions).

2. REC LEVEL METER

Shows the peak input level of each audio channel during recording and the recorded levels during playback.

3. SECOND AUDIO (SA) INDICATOR

Lights when the second audio program is being broadcast.

4. TIMER INDICATOR

Will light when turning power off after programming.

5. STEREO INDICATOR

Lights when the stereo program is being received.

6. ELECTRONIC DIGITAL CLOCK/CHANNEL DISPLAY

This display is used as an indicator for the present time, the channel number and instant recording time.

7. MEMORY COUNTER BUTTON

When pushed in MEMORY will stop at "0000".

8. COUNTER RESET/8 HOUR BUTTON

Resets tape counter to "0000" when the tape counter is displayed on the TV screen. Rescales the time remaining display for 8-hour tape.

9. COUNTER/TIME REMAINING SWITCH

Alternately selects the counter display or time remaining display on the TV screen.

- 10. VIDEO DUB BUTTON**
This button is used when recording the desired scene or title on the recorded tape. Refer to page 23 for details.
- 11. AUDIO DUB BUTTON**
Press "PLAY" and "AUDIO DUB" buttons simultaneously to audio dub.
- 12. RECORD BUTTON**
Press RECORD button and while holding RECORD, press PLAY button to record.
- 13. CASSETTE COMPARTMENT**
- 14. PLAY BUTTON**
Press to start play.
- 15. STOP BUTTON**
Press to stop tape. The STOP button must be pressed between "RECORD" and any other operation.
- 16. DECK OUT BUTTON**
Press to remove the portable VTR from the tuner main frame.
- 17. EJECT BUTTON**
With power on, press to remove cassette.
- 18. POWER SWITCH**
Turn system power on and off.
- 19. PAUSE/STILL BUTTON**
Press to pause during recording or playback.
- 20. 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.
- 21. FAST FORWARD/VISUAL SEARCH BUTTON**
Press to activate fast forward.
Press and hold this button during playback of a recorded tape, and forward playback picture at high speed can be seen.
- 22. AUDIO OUTPUT SWITCH**
Set the switch to "Hi-Fi" for automatic selection of Hi-Fi VHS sound recorded on the tape. To play Hi-Fi VHS sound mixed with the sound on the linear audio track (for example, after audio dubbing), set the switch to "MIX". To play back only linear audio track, set the switch to "LIN (SA)".
NOTE: When Hi-Fi VHS sound is played back, Hi-Fi indicator in the display window of the portable VTR lights.
- 23. REWIND/VISUAL SEARCH BUTTON**
Press to start rewind.
Press and hold this button during playback of a recorded tape, and reverse playback picture at high speed can be seen.
- 24. SLOW BUTTON**
Allows you to view a picture at slow speed.
- 25. INDEX BUTTON**
Allows you to locate the desired program on a tape. Indicator lights when this button is on.
- 26. AUTO TRACKING SWITCH**
In the ON position, adjusts tracking automatically. Disables tracking control knob.
Use tracking control knob to adjust severe tracking errors when the switch is in the OFF position.
- 27. TRACKING CONTROL KNOB**
To minimize noise in playback.
- 28. CHANNEL SELECT BUTTONS**
Select the channels you wish to view or to record by pressing these buttons.
- 29. INSTANT RECORDING TIMER BUTTONS (IRT)**
IRT allows unattended recording without programming the timer. See page 17 for details.
- 30. CHARGE BUTTON**
Press for battery charging.
- 31. 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".
- 32. STEREO/MONO SWITCH**
Mono light ON: Stereo program will be received and recorded in mono.
MONO light OFF: Stereo program will be received and recorded in stereo.
- 33. SA SET BUTTON**
SA SET light ON: Second Audio Program (SAP) will be recorded if broadcast.
SA SET light OFF: SAP will not be recorded even if broadcast.
- 34. INFRARED RAY RECEIVING SECTION**
Receives the infrared ray from remote control unit.
- 35. DIMMER SWITCH**
Use to select desired intensity level of Digital Clock/Channel indicator display.
- 36. CHANNEL SCAN-LIST CONTROL**
- 37. LEVEL METER SWITCH**
Turn on this switch to display audio peak levels. Set it to OFF to turn off Rec level meter.
- 38. TUNER/SC/AUX SELECT SWITCH**
In the TUNER position the VTR will record programs using the tuner. In the SC position the VTR will record the audio signals from the AUDIO IN jacks and video signal from the tuner. In the AUX position the VTR will record audio and video signals from the AUDIO IN/VIDEO IN jacks.
- 39. AUTOMATIC LEVEL CONTROL (ALC) SWITCH**
When in the ALC position, the recording level is controlled automatically. Set the switch to the MANUAL position to manually adjust the recording level.
- 40. BATTERY INDICATOR**
- 41. COUNTER/TIME REMAINING DISPLAY**
Indicates relative position of programs on tape or remaining playback/recording time.
- 42. TAPE SPEED INDICATORS**
- 43. HI-FI INDICATOR**
Lights when playing back tapes recorded with Hi-Fi VHS sound.
- 44. TAPE-IN INDICATOR**
Comes on when cassette is located in the compartment.

45. MEMORY INDICATOR

Memory indicator comes on when MEMORY COUNTER button is turned on.

46. UHF ANTENNA OUTPUT

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

47. VHF ANTENNA OUTPUT

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

48. UNSWITCHED AC OUTLET

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

49. SWITCHED AC OUTLET

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

50. VIDEO OUT

For connection to monitor TV or another VTR.

51. VIDEO IN

Receives video signal from another VTR.

52. AUDIO OUT

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

53. AUDIO IN

Receive audio signals from external stereo equipment or another VTR.

54. CABLE ADAPTER JACK

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

55. TV CHANNEL SELECTOR

NORMAL: Use for viewing or recording normal off-the-air broadcasts or Midband/Superband (J-O) cable TV channels.

CATV: Use for viewing or recording Hyperband/Superband (P-W) cable TV channels.

56. AUXILIARY BATTERY CHARGE TERMINAL

A second rechargeable battery PV-BT01A connected with battery connector PV-BA01A can be plugged in here to charge.

Note: The second battery must be disconnected before the internal battery will be charged.

57. UHF ANTENNA INPUT

Connect the UHF antenna to these terminals.

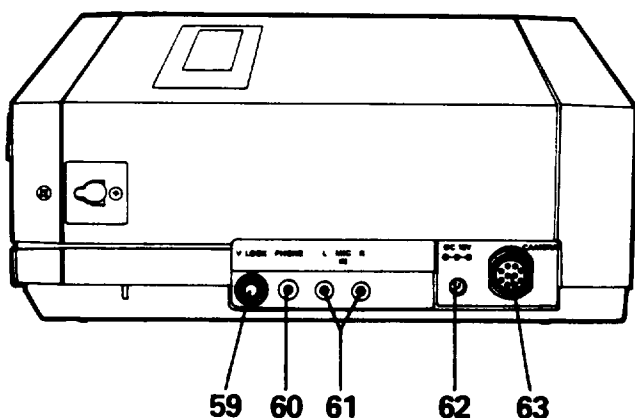
58. VHF ANTENNA INPUT

Connect the VHF antenna to this terminal.

CONTROLS AND FEATURES

PORTABLE VTR

SIDE VIEW



59. V. LOCK CONTROL

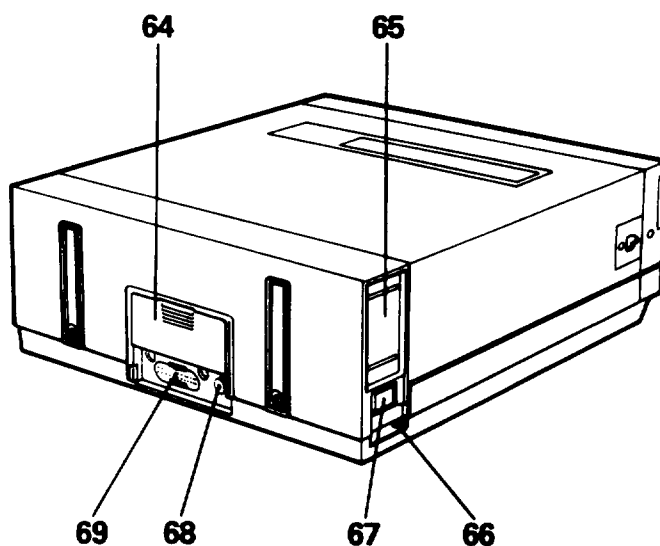
If you see vertical shaking on the TV screen in the still playback mode, rotate the V. LOCK control to minimize shaking.

60. PHONE JACK

61. MICROPHONE JACKS

For microphones.

REAR VIEW



62. EXTERNAL BATTERY JACK

Optional DC car cord plugs in here to connect VTR to car cigarette lighter socket or to a spare rechargeable battery.

63. CAMERA JACK

Camera is connected here.

Automatically overrides any other input video signal.

64. LID

65. BATTERY COMPARTMENT

Door opens when the battery is inserted.

66. RF CONVERTER SWITCH

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

67. BATTERY EJECT BUTTON

Press to remove the battery.

68. RF OUT

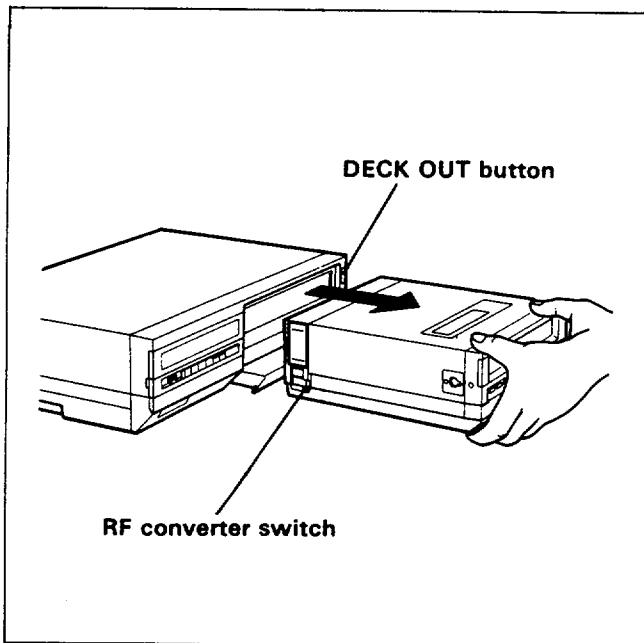
When the portable VTR is removed from the tuner main frame, the coaxial cable connects VTR and TV for playback.

69. TUNER/TIMER CONNECTING TERMINAL

This allows you to connect VTR to your tuner main frame with ease.

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 switch to whichever channel is unused in your area as follows:



1. Press the DECK OUT button and remove the portable VTR.
 - Be sure to place the unit horizontally when removing the VTR. (See page 5 for details.)
2. Slide the RF converter switch to CH3 or CH4 to match the channel selector of your TV. This is the video channel of your TV. Your TV must be tuned to this channel whenever a video cassette is played back by the VTR.
3. Push in the portable VTR into the tuner main frame. Note: Push the portable VTR firmly in as far as possible.

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.

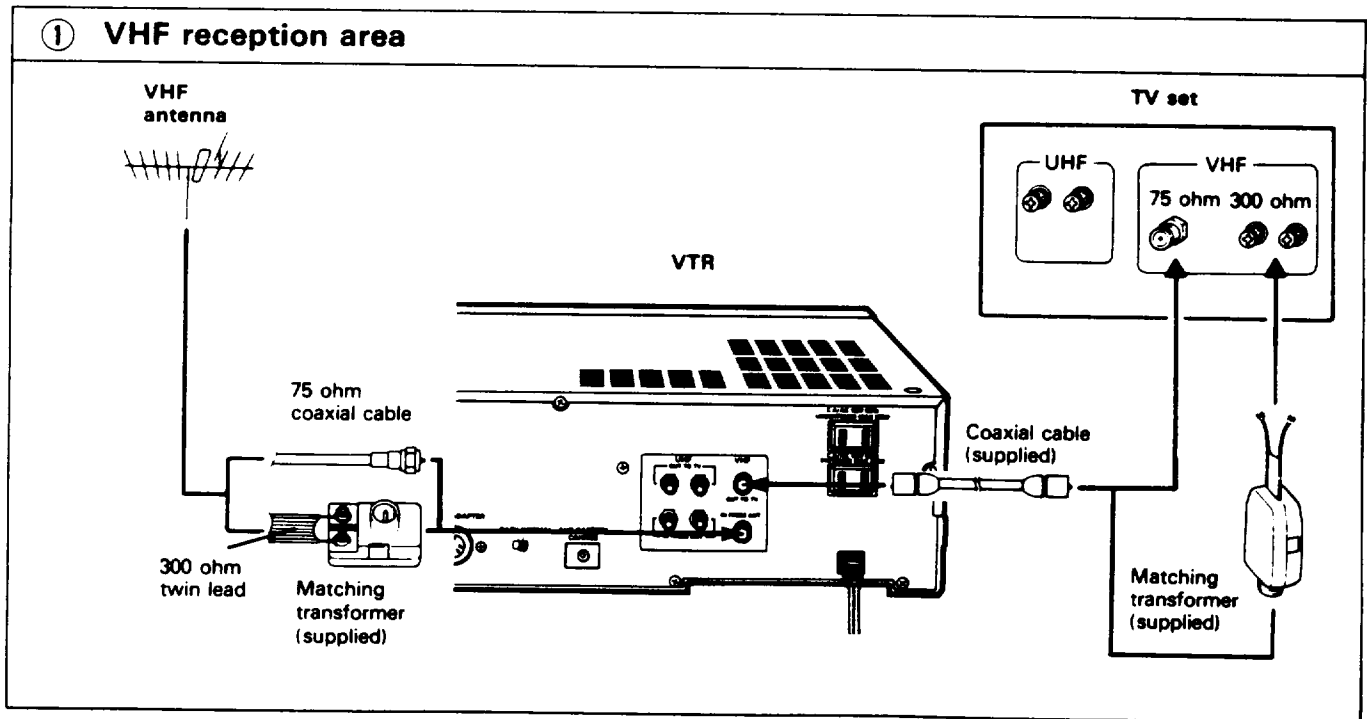
If your television is used on a cable system, special installation procedures may be required. We suggest you contact your dealer or cable company for assistance. Installation is not covered by the Limited Warranty.

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".

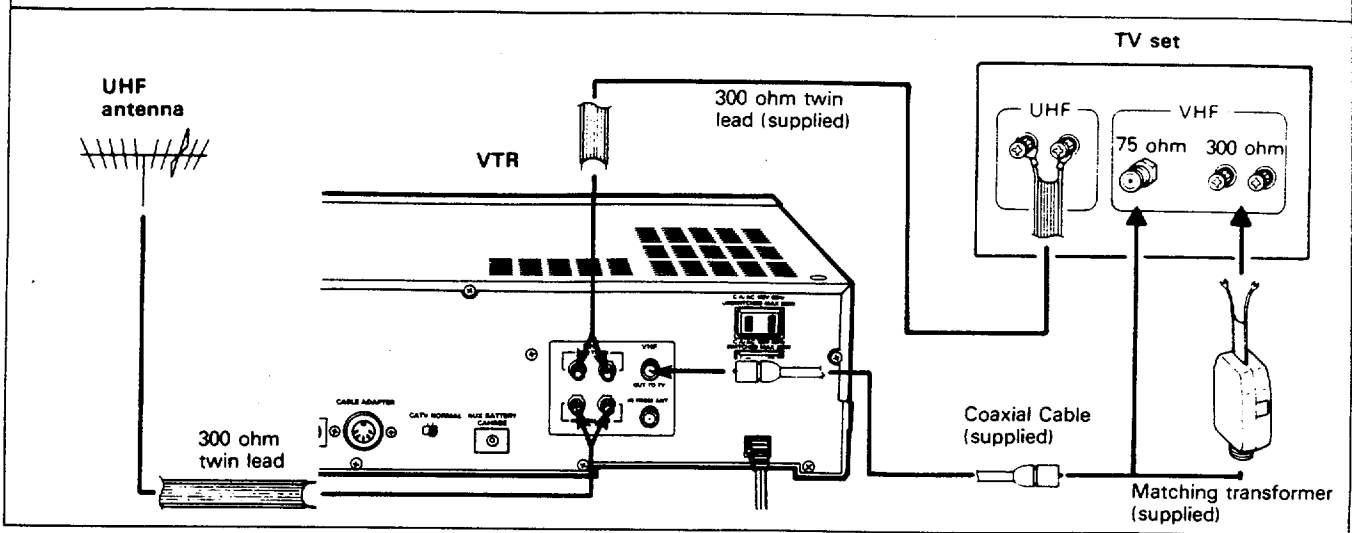
If you want to attach your VTR to a Portable TV with "rabbit ears" (dipole antenna), you must disconnect the "rabbit ear" leads from the antenna input terminal of the TV. It will be necessary to extend these leads so they can be attached to your VTR. We recommend an outside antenna.

Precaution

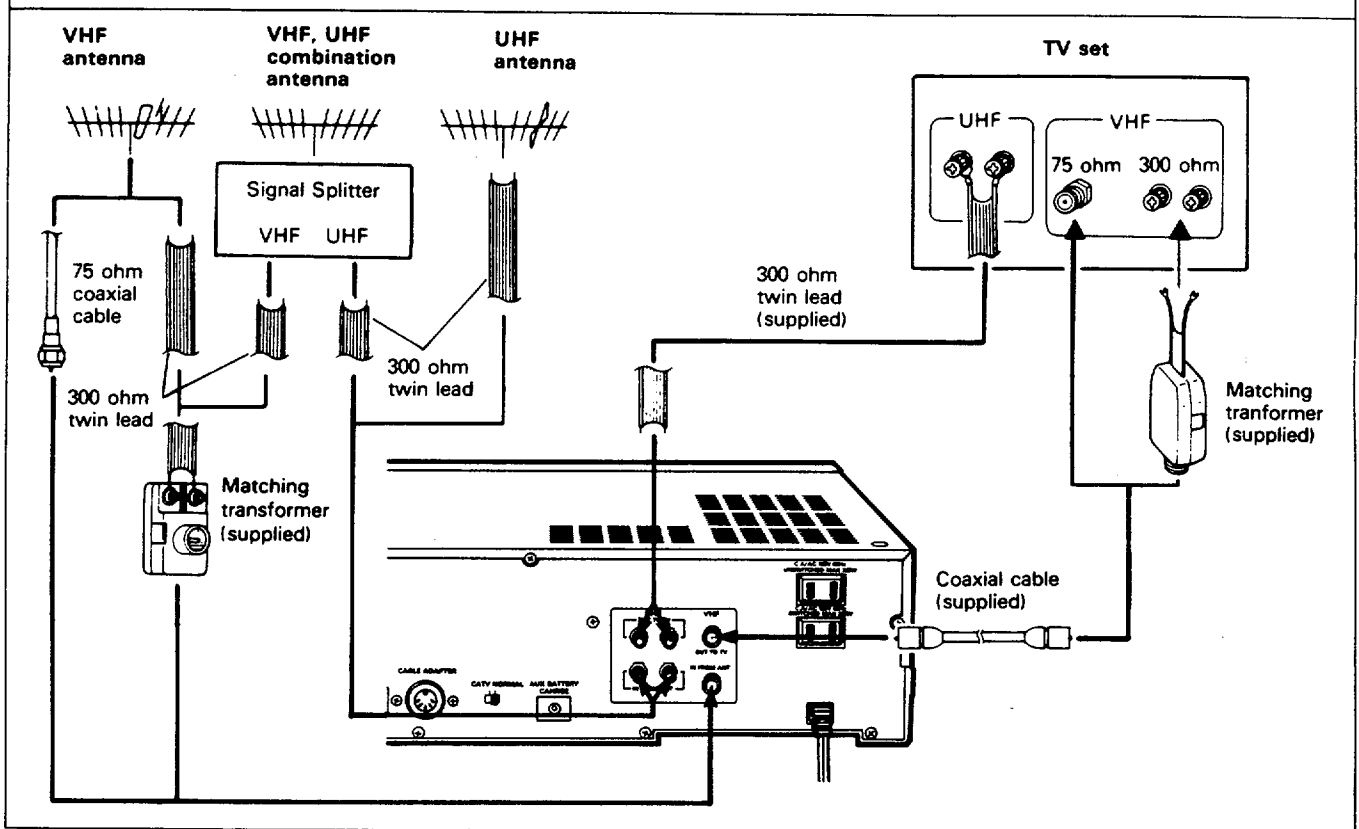
- Avoid extreme heat, cold, moisture and dust.
- Avoid use near magnetic field and places subject to strong vibrations.
- Do not insert wires, etc. through the cassette compartment.
- Do not move the unit from a hot place to a cold place or vice versa.
- Be careful; when the surface of the case is wiped 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.



② UHF reception area

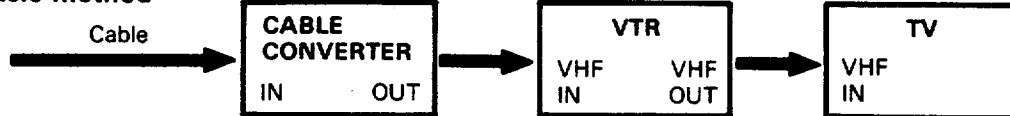


③ Both VHF and UHF reception area



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

Keyboard channel selection

Your Remote Control unit has a 10 button keyboard for direct channel selection. For a channel with a single channel number, first press "0". For example, press "0" and "8" for channel 8. VHF channels 10 through 13 and UHF channels 14 through 83 are selected by pressing the numbers in correct order. For example, "1" and "2" for channel 12.

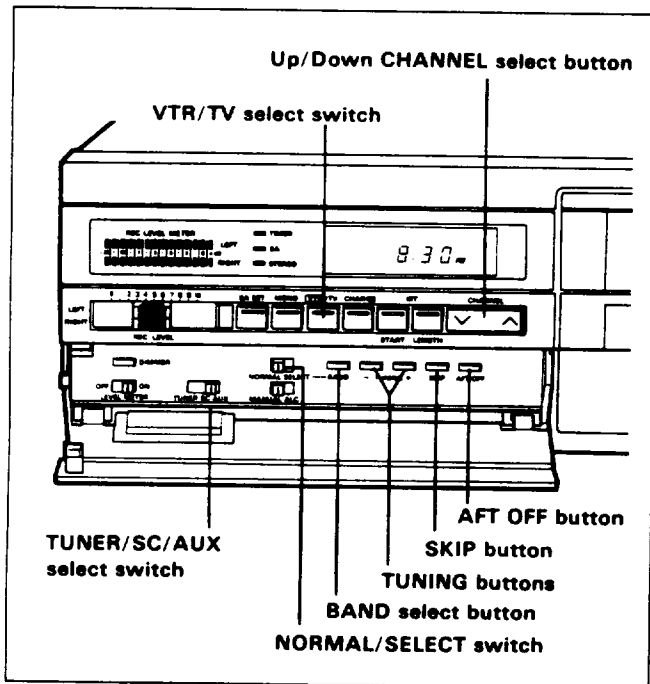
Up/down channel selection

In above 10 keyboard buttons, the up/down channel select button permits advancing the tuner to the next higher or lower preprogrammed channel. Holding down the button lets you scan preprogrammed channels stopping briefly at each to let you see program content.

Programming channel memory

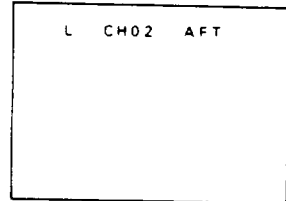
Up to 80 channels can be programmed into the VTR's memory for channel up and down operation. VHF channels 2 through 13 have been programmed at the factory and numbers in the channel display are the same as the numbers assigned to the preprogrammed VHF channels.

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. Set the clock to the correct time. (See page 14)
2. Turn on TV and select the video channel 3 or 4.
3. Turn on VTR.
4. Set the TUNER/SC/AUX select switch to "TUNER".
5. Set the VTR/TV select switch to "VTR". (The VTR indicator on the switch lights.)

6. Set the NORMAL/SELECT switch to "SELECT".



Note: When the NORMAL/SELECT switch is set to "SELECT", the VTR/TV select switch is switched to the VTR mode automatically. The band, channel number and "AFT" (Automatic Fine Tuning) appear on the TV screen.

Note: "AFT" will not appear if the displayed channel is previously programmed with AFT off.

7. Press the Up/Down CHANNEL select button to select the channel display number you will be programming.

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 as many times as necessary to select the band for the channel number on the TV screen. The band indication on the TV screen will change in sequence L, H, C, U, L continuously every time the BAND select button is pressed.

Band indication	Channels to be received	
L	VHF low channels CATV channel	2 through 6 A-5
H	VHF high channels CATV channels	7 through 13 J through O
C	CATV channels	A-4 through A-1 and A through I
U	CATV channels UHF channels	P through W and W + 1 through W + 23 14 through 83

NOTE: To tune the Superband cable channels P through W and the Hyperband cable channels W + 1 through W + 23, set the TV Channel Selector Switch on the back of your tuner to the CATV position. Then press the BAND button until "U" is indicated on the display.

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" when you have finished programming all desired channel positions.
13. To check programming, press the Up/Down CHANNEL select button to cycle the VTR tuner through all the channels you have programmed. If a channel was missed, repeat above steps for channels involved.

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

AFT (Automatic Fine Tuning)

A channel is fine tuned using up (+) and down (-) SEARCH buttons. When the NORMAL/SELECT switch is returned to "NORMAL", AFT is turned on and the channel "locks in". The AFT 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 AFT action. To turn AFT off, follow the procedure below.

AFT off tuning procedure

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

5. Return the NORMAL/SELECT switch to "NORMAL".

Note:

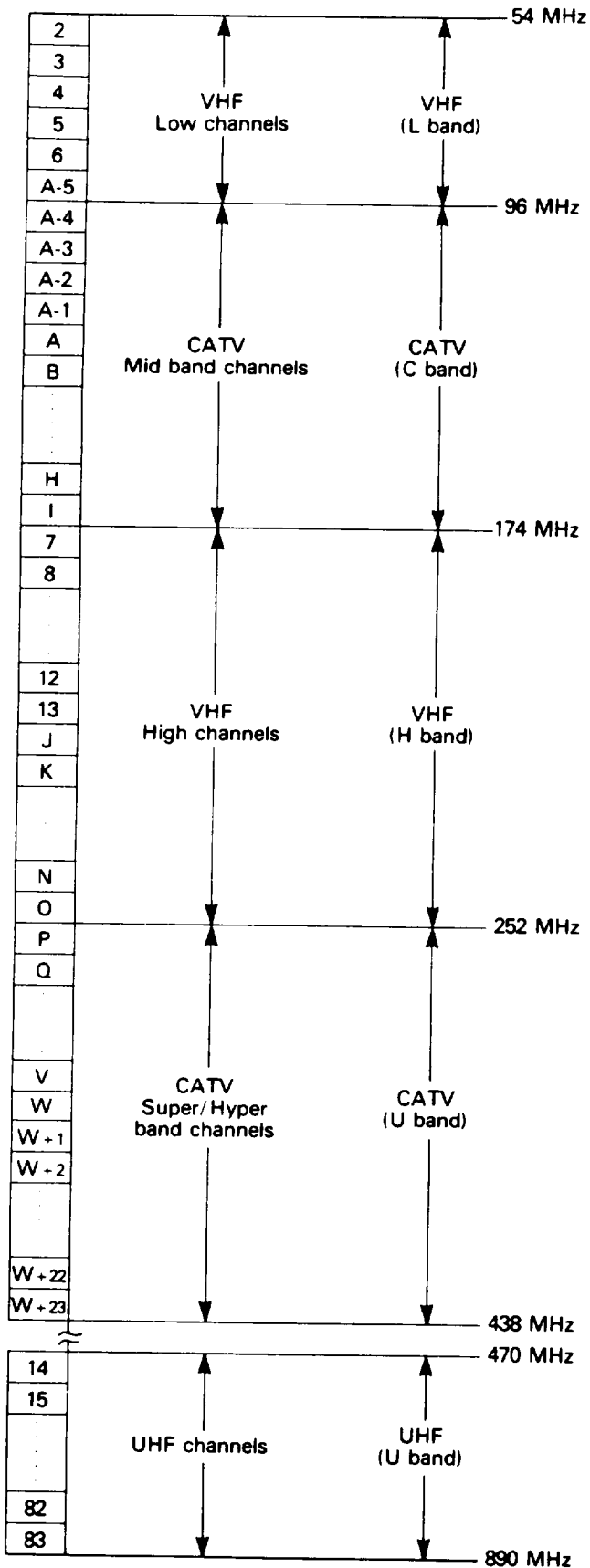
1. The AFT is only switched off for the channel you have been programming. AFT remains in effect on all other channels. To defeat the AFT for additional channels, repeat the above steps.
2. Pressing the AFT OFF button once again will turn the AFT on.

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 Up/Down CHANNEL select button until an unwanted channel is tuned.
3. Press SKIP button.
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 Up/Down CHANNEL select buttons.
Note: To restore the erased channel, repeat the above steps 1 through 3.

Channel frequency spectrum



SETTING CLOCK FOR CORRECT TIME

The clock is set using a Infrared remote control unit (provided) while monitoring the TV screen.

1. Be sure to check that the NORMAL/SELECT switch in the secondary control door is set to "NORMAL" before starting the clock setting.
2. Turn on VTR and TV set and select the video channel 3 or 4.
3. Press the PROGRAM button on the Remote control unit. The menu graphics for clock set and timer programming will appear on the TV screen.

TO SELECT MODE
PUSH NUMBER SHOWN

1 CLOCK SET
2 NORMAL PROGRAM
3 DAILY PROGRAM
4 WEEKLY PROGRAM
5 PROGRAM REVIEW

TO END PUSH PROGRAM
4. Press the Keyboard button numbered one (1) on the Remote control unit to display the clock set programming graphics. The first digit or a dash (—) in the time of day display will be flashing.

CLOCK SET
TIME

TO END PUSH PROGRAM
5. Set the hour and minutes by pressing the numbered buttons on the Remote control unit. If a single digit hour or minute is set, first press zero (0) before entering the hour or minute. After the correct time has been entered, AM = 1 and PM = 2 will start flashing on the TV screen.

CLOCK SET
TIME 02:15
AM=1 PM=2

TO END PUSH PROGRAM
6. Press the Keyboard button labeled one (1) for AM or two (2) for PM. Date section is displayed on the TV screen with the first digit of the month or a dash (—) flashing.

CLOCK SET
TIME 02:15 PM
MONTH/DAY/YEAR
DATE

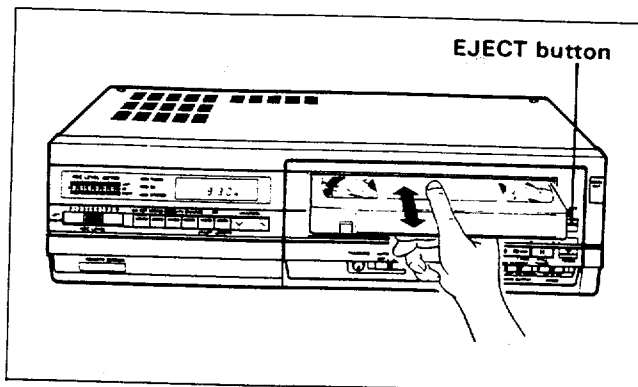
TO END PUSH PROGRAM
7. Press the appropriate Keyboard buttons to set the current date. **Select the month first, then the day and year.** Again, if a single digit month or day is set, first press zero (0) before entering the number of the month or day. At this point, the day of the week is automatically appeared on the display.

CLOCK SET
TIME 02:15 PM
MONTH/DAY/YEAR
DATE 07/06/85
SAT

TO END PUSH PROGRAM
8. The present time of day is now complete. Press the PROGRAM button on the Remote control unit to change the VTR clock display to the programmed time of day and to start the clock.

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.

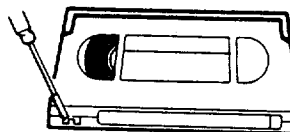
Types of video cassette

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.

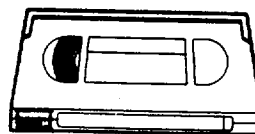
To avoid erasing a recording

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.

Notes on setting clock for present time of day

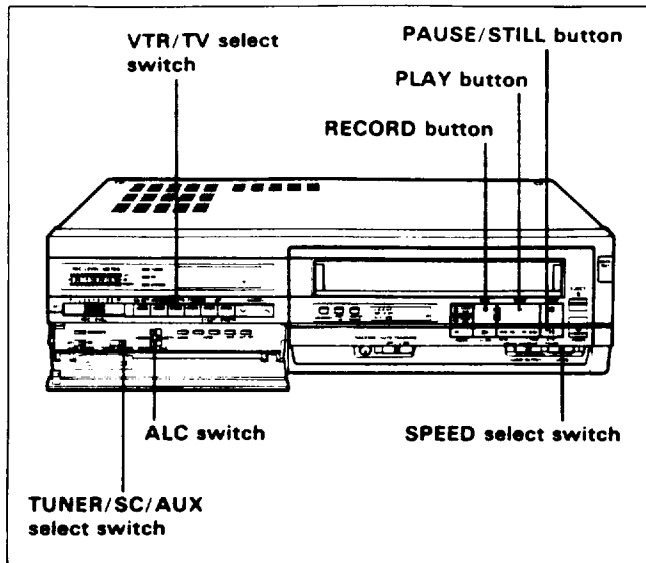
- If incorrect information is entered during programming, press the CLEAR button repeatedly until the digit requiring correction is flashing. Then set the correct digit.
- When illogical information is entered during programming, a question mark (?) will appear instead of the digit you selected. For example, a nine (9) entered for the first digit of the month is illogical and therefore a question mark (?) will be displayed. Replace the question mark by entering the correct digit.
- When the unit is first plugged in, or if the unit experiences a loss of power for more than approximately one hour, the Clock Display on the tuner will show "--:--". Time should be reset. All programming should also be reset.
- 12:00 AM is midnight; 12:00 PM is noon.
- Select the desired intensity level of Clock/Channel indicator display using the DIMMER button in the secondary control door.

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 set and select a channel as usual.

RECORDING TV PROGRAMS



1. Turn on VTR.
2. Turn on TV and select the video channel 3 or 4.
3. Set the VTR/TV select switch to "VTR".
The VTR indicator will come on.
4. Insert Cassette.
5. Set the SPEED select switch to "SP", "LP" or "EP".
6. Set the TUNER/SC/AUX selector to "TUNER".
7. Set the ALC switch to the ALC position to automatically control the recording level.
See "Recording level adjustment" on page 16 to manually adjust the recording level.
8. Select channel to be recorded.
9. Press the RECORD button and while holding RECORD, press PLAY button.
10. Press the PAUSE/STILL button to stop recording temporarily.
Note: To prevent tape damage, do not leave the unit in the pause mode for more than 5 minutes.
11. Press the PAUSE/STILL button again to release pause mode.
12. Press the STOP button.

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 switch to the TV mode (the VTR indicator goes off). The recorded program can be viewed later at your convenience.

Note: If you want to make a change of VTR channel during recording, proceed as follows;

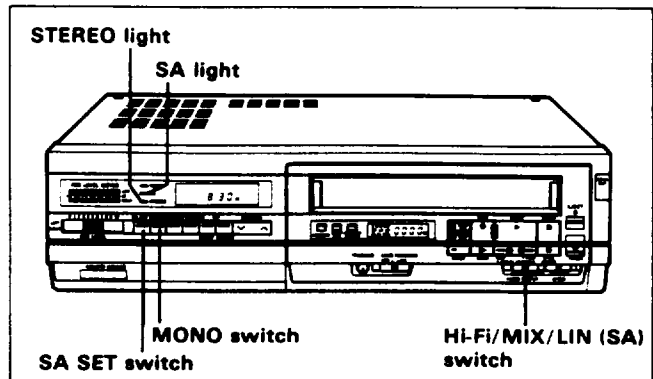
- (1) Press the PAUSE/STILL button during recording.
- (2) Select channel to be changed.
- (3) Press the PAUSE/STILL button again to release.
Now, the new channel program will be recorded.

Recording level adjustment

When recording is performed with the Automatic Level Control (ALC) switch set to "ALC", 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 "MANUAL".

To adjust the audio recording level, place the ALC switch in the MANUAL position, then adjust the recording level controls so that three red segments light occasionally, especially when loud portions are being recorded.

Recording broadcast stereo



Since the PV-U2200A has a built-in broadcast TV stereo tuner, you can record TV broadcast stereo directly with your VTR. The PV-U2200A also allows you to record bilingual programming that is broadcast on the Second Audio Program (SAP) channel used by some stereo TV stations.

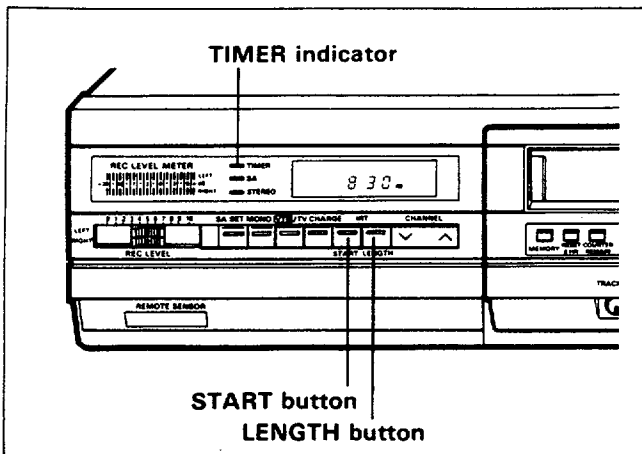
To receive and record TV stereo, first make sure that the MONO light is off. Then, whenever you tune to a TV station that is broadcasting in stereo, the STEREO light will come on. If a station is broadcasting a bilingual (SAP) signal, the SA light will also come on.

If the stereo signal is too noisy (e.g. from a weak station) press the MONO switch. This will cause the MONO light to come on and will cause the STEREO and SA lights to go off. Programs will now be recorded in mono. Whenever the MONO light is on, it is impossible to receive or record stereo or SAP programming.

The stereo signal is always recorded on the VHS Hi-Fi tracks. If you want to record a bilingual (SAP) broadcast, push the SA SET switch so that the SA SET light comes on. Now, whenever the SA light is also on, the SAP audio will be recorded on the linear track. If the SA SET light or the SA light is off, the normal TV sound will be recorded on the linear track as well as on the Hi-Fi tracks.

To monitor or play back stereo sound, the VTR must be connected to a stereo system or compatible stereo TV. To monitor or playback the stereo sound, place the HI-FI/MIX/LIN (SA) switch in the Hi-Fi position. To monitor or playback the SAP audio, place the HI-FI/MIX/LIN (SA) switch in the LIN (SA) position.

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 8 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 8 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.

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 day.

Notes:

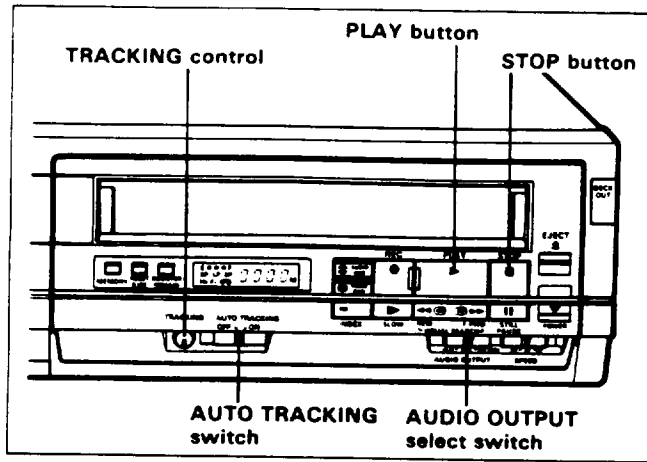
1. To recall the recording time, press LENGTH button only once. Pressing more will change the recording time and cause a need for resetting.
2. POWER button may be on or off.

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 day, and IRT has been now cleared.

Note: POWER button may be on or off.

PLAYBACK



1. Turn on VTR.
2. Turn on TV and select the video channel 3 or 4.
3. Insert the cassette.
4. Set the AUDIO OUTPUT select switch to "Hi-Fi" for linear audio playback and for automatic selection of Hi-Fi VHS sound. Set to "MIX" for playback Hi-Fi VHS sound mixed with the sound on the linear audio track. Or, set to "LIN (SA)" for playback of only the linear audio track.
5. Press the PLAY button.
(Playback speed automatically corresponds with recording speed.)
6. Press the STOP button to stop playback.

Tracking control adjustment

When you play tapes that were not recorded on the same VTR, black and white streaks tend to appear in the picture. In most cases the Automatic Tracking circuits in your VTR will eliminate this problem and it is recommended that you leave this feature turned on. If streaks do appear, turn off the Automatic Tracking switch and adjust the tracking control located beside it in either direction to minimize them. Return it to its original position when you are finished with the tape and turn the Automatic Tracking switch on.

Note: When a scratching noise is heard during playback of Hi-Fi audio (with Hi-Fi indicator lit), adjust tracking control manually for optimum sound.

Still playback

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

The frame-by-frame picture can be viewed by pressing the F. ADV button on the remote control unit during the still playback mode.

During still playback, press the PAUSE/STILL button to return to normal playback, or the STOP button to enter the stop mode.

Note:

- If you see vertical shaking on the TV screen in the still playback mode, rotate the vertical jitter control on the side of video deck 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.

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 playback a tape, then press and hold 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.
- The noise in picture can be moved by using the TRACKING control.

Quick playback

Press the QUICK button on the remote control unit during playback of a tape. Pictures can be viewed at high speed in the forward direction. To release, press the PLAY or STOP button. The video deck will change to the mode corresponding to the button pressed.

Note: If you see noise band on the TV screen in the quick playback mode, rotate the TRACKING control on the VTR to minimize noise.

Slow playback

Slow playback picture can be seen by pressing the SLOW button when playing back a tape. Then use the VARIABLE buttons on the remote control unit to vary the playback speed. To release slow playback, press PLAY or STOP button. The VTR will change to the mode corresponding to the button pressed.

Note: When noise appears in the slow playback picture and makes viewing difficult, it can be removed by operating the TRACKING control on the remote control unit. Removing the noise in slow playback also lets you enjoy a noise-free picture in still playback.

Tape counter

This indicates the amount of video tape transported as a number. Press the DISPLAY button on the remote control unit twice to indicate the counter reading on the TV screen. (The DISPLAY button calls up the status display the first time it is pressed. If you press it again before the display disappears, the tape counter reading will remain on the screen.) Then press the CLEAR button on the remote control unit or RESET button on the front panel of VTR 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

The Counter MEMORY button is used to stop tape at a desired point in the rewind mode. This is useful if there is a section of tape you want to review immediately after recording or if you want to return to the same point several times in a row.

To use the counter memory

1. Press the DISPLAY button on Remote control unit to display the counter indication on the TV screen.

2. Turn the MEMORY button on.
"M" is displayed on the TV screen.
3. Begin playing or recording a tape.
4. At the point where you want playback to begin, reset the Tape Counter to "0000" by pressing its RESET button on the front panel or the CLEAR button on the remote control unit.
5. Continue to play or record the tape.
6. Press STOP button.
7. Press REWIND button. Tape will be rewound to the preselected starting point.

Electronic program indexing

This indexing method causes electronic "marks" to be recorded on the tape, so that these designated points may be located automatically by the VTR. Since these indexing points are permanent (until the tape is erased) they are not lost when the counter is reset or the cassette is removed from the VTR.

1. Prepare to record as usual.
2. Record as usual. At each point you wish to mark, press STOP. To continue recording, press RECORD and PLAY simultaneously.

Note: The index signal is not recorded if PAUSE is pressed and released during recording. If two programs are to be recorded and one immediately follows the other, you must still use STOP and then PLAY-RECORD to insert an index mark.

Indexed playback

The tape must have been indexed beforehand. An indexed tape can be played back without using Indexed Playback if you choose.

1. Prepare to play the tape in the usual manner, but turn on INDEX.
2. Press F. FWD if the tape is completely rewound. Otherwise press either F. FWD or REWIND, depending on the direction you wish to search. The tape will fast forward or rewind until an index signal is reached. At this point the VTR begins forward search for approximately ten seconds so you can identify the program, and then resumes fast forward or rewind to the next index mark.
3. Press PLAY when the desired program has been located.
4. To rewind the tape completely, turn off INDEX and then press REWIND.

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

On-screen display

In addition to the on-screen displays for clock set, timer programming, channel programming, tape counter, and time remaining indication, VTR operating modes and current date are displayed on the TV screen. The mode graphics include STOP, PLAY, RECORD, PAUSE (record/pause), FAST FWD and REWIND. When the TUNER/SC/AUX select switch is in "AUX", the word VIDEO appears after the VTR operating mode.

Press the DISPLAY button on the Remote control unit to change the display.

- Mode-1 Display is obtained by pressing the DISPLAY button once. VTR status is displayed for five seconds (twenty seconds when the VTR is initially turned on). The VTR return to this mode when it is turned off and then on.
- Mode-2 Display is obtained by pressing the DISPLAY button while the Mode-1 display is on the screen. The Mode-2 display continuously shows the counter reading.
- Mode-3 Display is obtained by pressing the DISPLAY button while the Mode-2 display is on-screen. In Mode-3 there is no status display at all. This is useful if you are copying from the PV-R2200A to another VTR and do not want the status copied onto the new tape. To go from Mode-3 back to Mode-1, press the DISPLAY button again.

Time remaining

Use the Time-Remaining feature to tell easily if there is sufficient tape left in a cassette to record a program, or how much longer a tape has to play (assuming the tape is recorded to the end). Whenever time remaining is in use, the time remaining display appears instead of the tape counter, both in the on-screen display and in the Liquid Crystal Display (LCD) on the portable deck. To switch from counter to time remaining, simply press the COUNTER REMAIN button on the recorder. Press the button again to return the display to counter readings.

The electronic system in the VTR that calculates the time remaining assumes that the tape will continue to be recorded (or played) at the current speed. Any time the tape speed changes (or when the tape has just started playing) the system will recalculate the time remaining for the new speed; however, there will be a delay of several seconds until the new time is displayed.

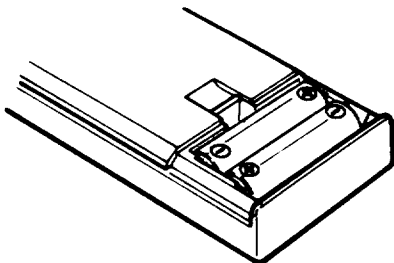
The electronic system automatically detects the overall tape length and calculates time remaining in all cases except for a T-160 cassette. In this single case, press the button marked RESET/8 HR while the time remaining is being displayed. In a few seconds the VTR will recalculate the time remaining based on a total recording/playing time of eight hours. (The RESET/8 HR button resets the counter to 0000 if the counter is being displayed.)

REMOTE OPERATION

You can operate the VTR from a distance using the Infrared remote control unit.

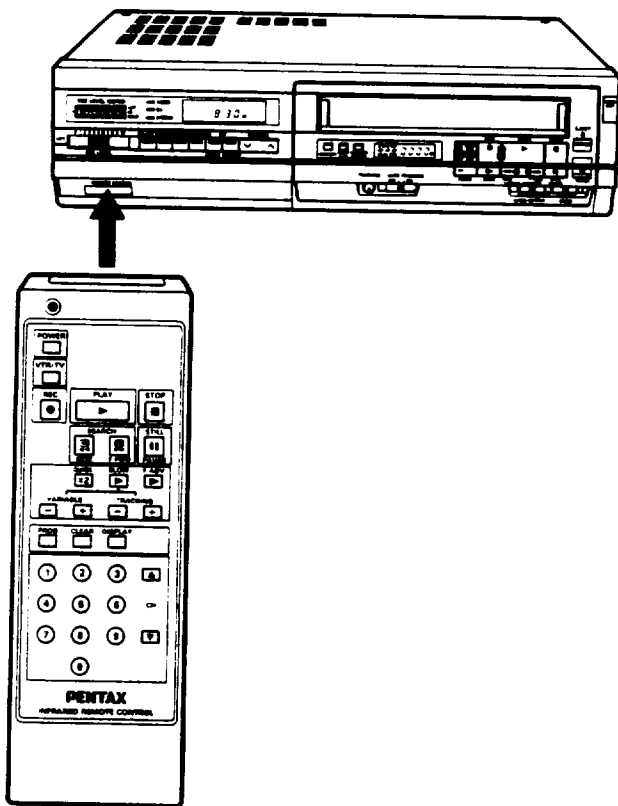
Power source of infrared remote control unit

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



Operation of remote control unit

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

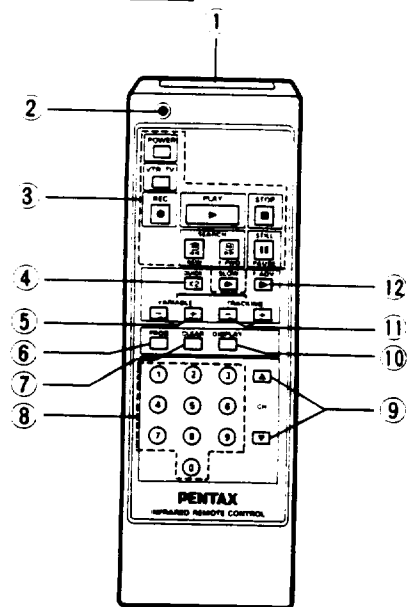


Note: The infrared rays will bounce off the walls and eventually reach the receiver of the VTR, but for best results, transmit rays directly to the receiver.

To record using remote control unit

Press and hold REC then press PLAY. If you press PLAY then REC, the VTR will enter the playback mode.

Controls and functions

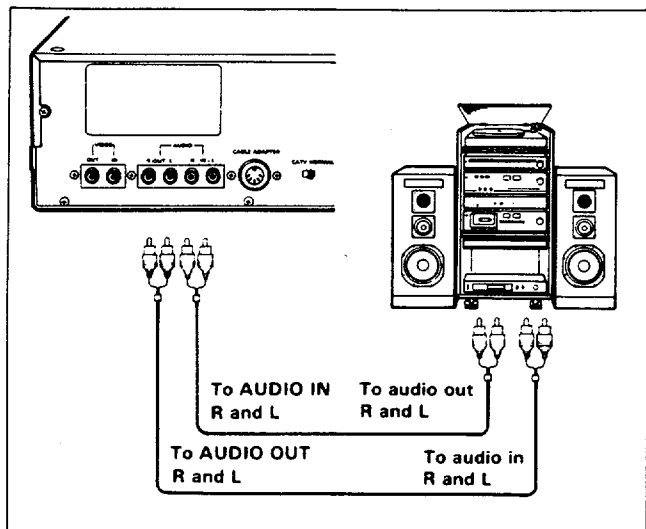


- ① **Window**—Transmits signal to VTR. Aim at "remote sensor" on front panel of VTR.
- ② **Indicator**—Blinks when the control unit is transmitting to the VTR.
- ③ Same as them on the front panel of VTR.
- ④ **QUICK**—Press to view double speed playback during playback.
- ⑤ **VARIABLE**—Controls slow-motion speed.
- ⑥ **PROGRAM**—Start the sequence for setting the clock and programming the timer.
- ⑦ **CLEAR**—Cancels program or program entry. Also uses to reset the counter reading to "0000".
- ⑧ **10-button keyboard**—Two digits select any tuner channel. Press 0 first for channels 0 to 9. Also use to program timer and set clock.
- ⑨ **Up/Down channel select button**—Select next higher or lower preset channel.
- ⑩ **DISPLAY**—Controls status display on the TV screen.— See page 19.
- ⑪ **TRACKING**—Adjust slow-motion tracking. Operates only during slow motion.
- ⑫ **F.ADV**—Advances to the next frame during still playback.

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 16) except set the TUNER/SC/AUX select switch to "SC".
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 18), 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 TUNER/SC/AUX select switch to "AUX".
6. Set the ALC switch to the ALC position to automatically control the recording level. See "Recording level adjustment" on page 16 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 "Hi-Fi", then press PLAY.

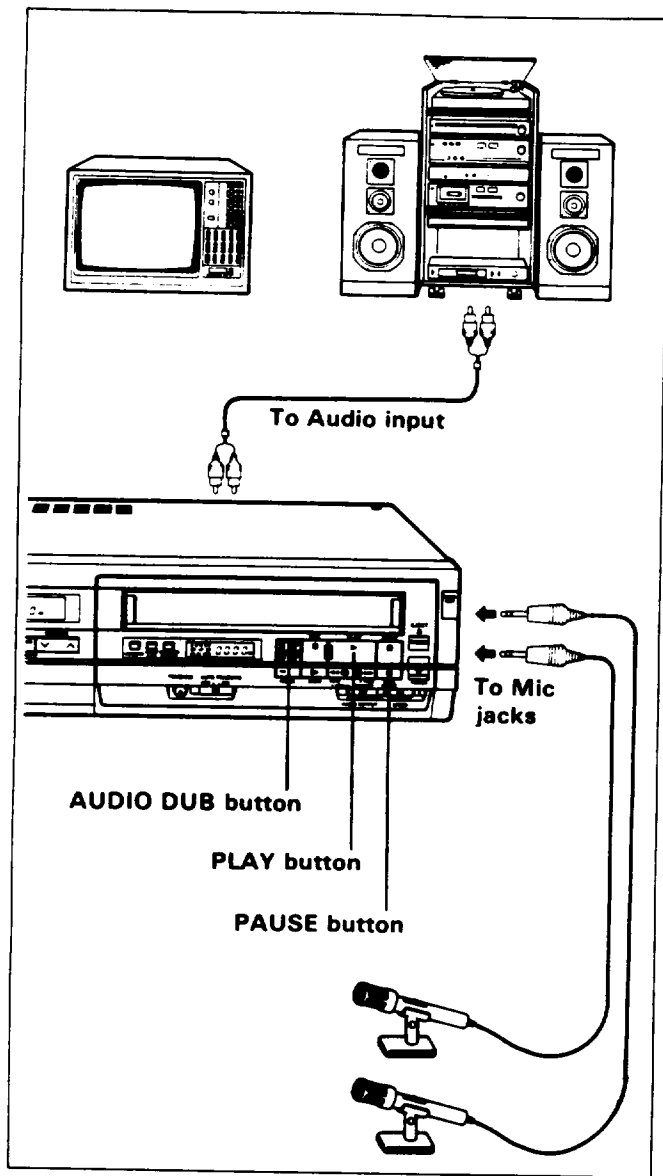
Note:

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.

AUDIO DUBBING

Audio dubbing is the process of recording new audio in place of the audio that was formerly recorded on the linear audio tracks. Audio dubbing does not disturb the recorded video and it does not disturb the audio that was formerly recorded on the VHS Hi-Fi tracks.



1. Connect the audio source to AUDIO INPUT jacks or a microphones to MIC jacks of VTR.
2. Play the tape you intend to dub to the point where dubbing is to end, then press STOP button.
3. Press RESET button to set the tape counter to 0000.
4. Use PLAY, REWIND and VISUAL SEARCH buttons to locate the point where dubbing is to begin.
5. Press PAUSE button.
6. Press and hold PLAY button.
7. Press AUDIO DUB button and then release the AUDIO DUB and PLAY buttons. The indicator in the AUDIO DUB button turns on.
8. Press MEMORY button.

9. Press PAUSE button to begin dubbing. The VTR will stop at counter reading 0000. If you do not want to stop audio dubbing at a specific point, omit steps 2, 3 and 8.
10. Press STOP button to end audio dubbing.

After you have dubbed in audio, use the Audio Output Selector to select the audio to be played back:

- HI-FI plays back the audio that was originally recorded on the VHS Hi-Fi tracks.
- LIN plays back the audio that you dubbed in.
- MIX plays the audio recorded on both the Hi-Fi tracks and the linear tracks. Therefore you will have "sound-with-sound" when you play a dubbed tape using mixed audio output.

■ ORDER OF PRIORITY OF DIFFERENT INPUTS

AUDIO SIGNAL

1. External equipment connected to microphone inputs.
2. Color Video Camera connected to the camera inputs.
3. External equipment connected to the audio input.

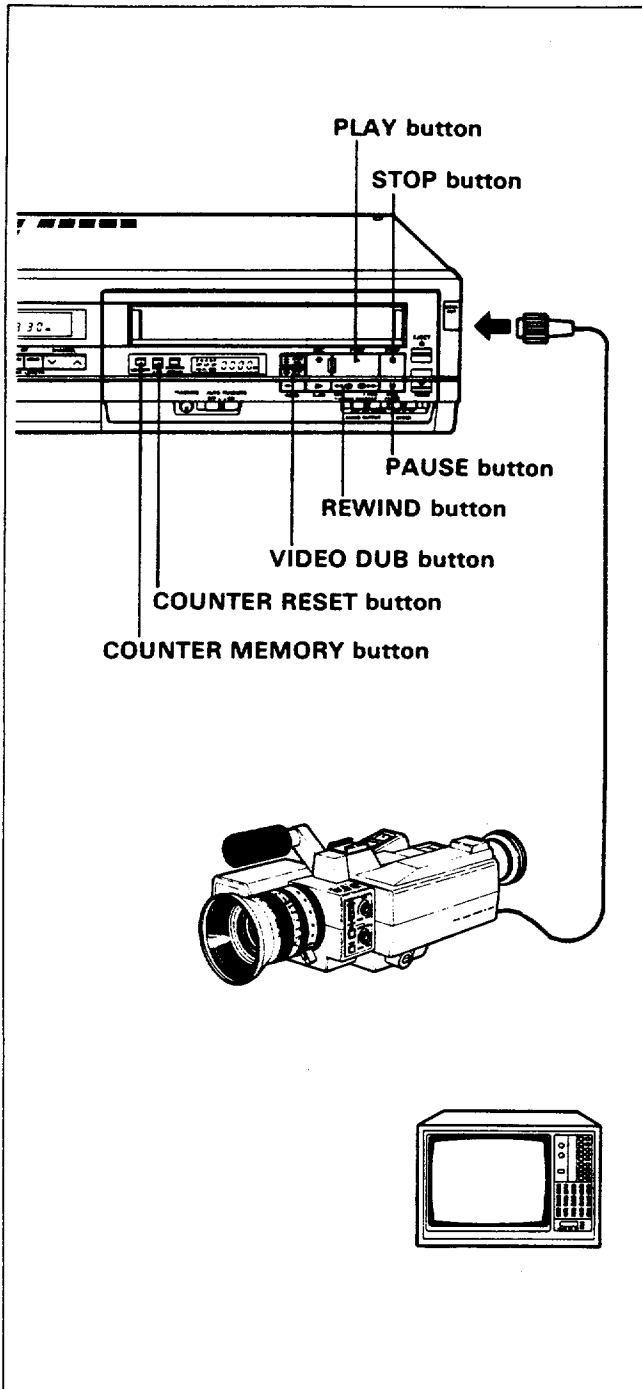
VIDEO SIGNAL

1. Color Video Camera connected to the camera input.
2. External equipment connected to the video input.

VIDEO DUBBING

Video dubbing is the process of recording new video on a tape in place of existing video. It erases the former video and it also erases the audio recorded on the VHS Hi-Fi tracks. It does not affect the audio formerly recorded on the linear tracks. During playback, the audio you hear will be what was recorded on the linear tracks, regardless of the position of the AUDIO OUTPUT SELECTOR. (The VTR automatically plays the linear audio tracks whenever the Hi-Fi tracks are blank.)

- Preparation Connect the video source such as camera you desire to insert from.



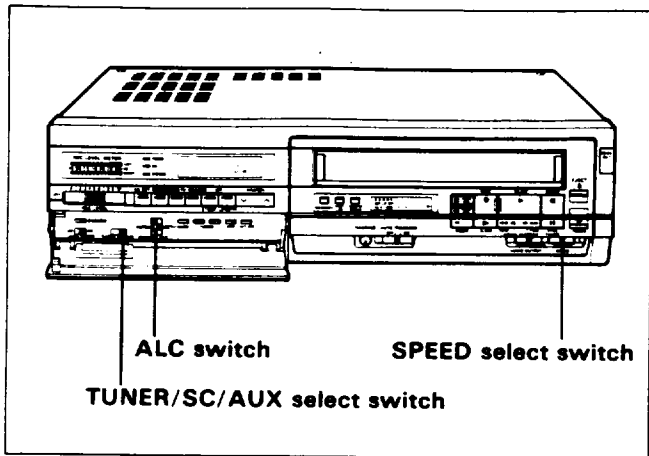
1. Play the tape you intend to modify to the point where dubbing is to end and press STOP button.
2. Press RESET button to set the tape counter to 0000.
3. Use PLAY, REWIND, and VISUAL SEARCH buttons to locate the point where dubbing is to begin.
4. Press PAUSE button.
5. Press and hold VIDEO DUB button.
6. Press PLAY button and then release the VIDEO DUB and PLAY buttons. The indicator in the VIDEO DUB button turns on.
7. Press MEMORY button. The letter "M" appears in the display.
8. Press PAUSE button to begin dubbing. (If you are using a camera, use its pause switch.)

The VTR will stop at counter reading 0000. If you do not want the video dubbing to stop at a particular point, omit steps 1, 2 and 7.

Note:

- Video dubbing is not possible in the intermediate section between programs.
- Be sure to perform the tracking adjustment in item 1 when applying Video Dubbing to an old tape or a tape recorded using another video deck.
- Color noise may appear on the played picture of a section to which Video Dubbing has been applied.

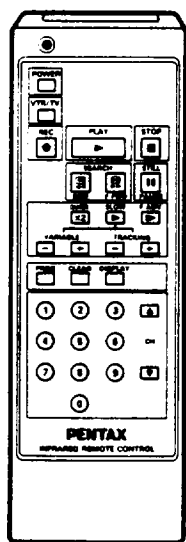
The programmable electronic clock/timer permits the unattended recording of up to 8 preselected programs one year in advance. It turns the unit on and off and changes channels automatically.



1. Turn on Power switch of VTR and TV set and select the video channel 3 or 4.
2. Insert the Cassette.
3. Set the SPEED select switch to "SP", "LP" or "EP".
4. Set the TUNER/SC/AUX select switch to "TUNER".
5. Set the ALC switch to the ALC position to automatically control the recording levels.
You are now ready to program the timer.

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.

On-screen TV set displays guide you through the programming steps.



Unattended recording one time only

1. Press PROGRAM button on Remote control unit. Menu graphics for clock set and clock timer programming appear on TV screen.
2. Press the Keyboard button numbered two (2) on Remote control unit to display NORMAL PROGRAM graphics on TV screen. Program numbers (1 through 8) flash when a memory position has not been programmed. If a memory position has been programmed, the program number will not flash.
Note: To re-program a memory position that has already been programmed, the previous information must first be cleared. See page 25.
3. Select one of the eight available programs by pressing the desired program number on the Remote control unit. The graphics CH appear on the TV display with the first channel number as a dash (-) flashing.
4. Press the numbered Keyboard buttons for the channel to be recorded. If a single digit channel number is set, first press zero (0) and then the channel number. After entering the channel number, the TIME ON graphics appear on the TV screen display.
5. Set the recording start time with the numbered Keyboard buttons. If a single digit hour or minute is set, first press zero (0) before entering the hour or minute. For example, to input 6:00 o'clock press 0600. When recording start time has been entered, AM = 1 and PM = 2 will start flashing on the display.
6. Press the Keyboard button labeled one (1) for AM or two (2) for PM. TIME OFF graphics appear after AM or PM is entered.

```

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

```

NORMAL PROGRAM
PROGRAM 12345678
SELECT PROG NUMBER
    
```

```

NORMAL PROGRAM
PROGRAM 1
CH -
TO END PUSH PROGRAM
    
```

```

NORMAL PROGRAM
PROGRAM 1
CH 04
TIME ON -
TO END PUSH PROGRAM
    
```

```

NORMAL PROGRAM
PROGRAM 1
CH 04
TIME ON 06:00
AM=1 PM=2
TO END PUSH PROGRAM
    
```

```

NORMAL PROGRAM
PROGRAM 1
CH 04
TIME ON 06:00 PM
TIME OFF -
TO END PUSH PROGRAM
    
```


7. Enter the AM or PM stop time in the same manner as described in steps 5 and 6. Consider the maximum recording time which will vary according to type of cassette and recording speed you select. After entering AM or PM stop time, START DATE and the current day of the week appear on the display.
8. Set the date for recording with the numbered Keyboard buttons. After entering the month and day for recording, the year and day of the week is automatically displayed. If you input a month and day prior to the current date, the year will change to next year.
9. Programming for one memory position is now complete. Press PROGRAM button on Remote control unit to enter program and change display to menu graphics as in step 1. Additional program memory positions may now be programmed by repeating steps 2 through 9.
10. Turn off power to activate a program or programs for unattended recording. Timer indicator light will glow red.
11. Turn off TV.

```
NORMAL PROGRAM
PROGRAM 1
CH 04
TIME ON 06:00 PM
TIME OFF 07:30 PM
START DATE 07/18/85
THU
TO END PUSH PROGRAM
```

```
NORMAL PROGRAM
PROGRAM 1
CH 04
TIME ON 06:00 PM
TIME OFF 07:30 PM
START DATE 07/19/85
FRI
TO END PUSH PROGRAM
```

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

Unattended recording daily

To record the same program each day of the week (except Saturday and Sunday), press PROGRAM button to display the programming menu and then press three (3) on the numbered Keyboard. Continue programming as described in steps 3 through 11.

```
DAILY(M-F) PROGRAM
PROGRAM 12345678
SELECT PROG NUMBER
```

Unattended recording weekly

To record the same program on a specific day of the week (including Saturday or Sunday), press PROGRAM button and then the number four (4) on the Remote control unit. Continue programming as described in steps 3 through 11.

```
WEEKLY PROGRAM
PROGRAM 12345678
SELECT PROG NUMBER
```

Note on unattended recording

1. If the timer has not been programmed, the red TIMER indicator will not glow. The indicator flashes to warn that a recording will not occur because no cassette has been inserted or the safety tab on the cassette has been removed.

2. A timer program will not be recorded if the VTR power is on when the program is to start. If you turn off the VTR during the interval when the VTR timer is programmed to record, it will record the rest of the program.
3. If programs overlap, the VTR will select the program with the earliest start time. When that program is over, the VTR will switch to the next program. If start times are the same, the VTR will select the programs in numerical order.
4. You can stop VTR during a timer recording by pressing POWER and then pressing STOP within ten seconds.

To check programming

1. Press the PROGRAM button to display the programming menu.
2. Press the number five (5) on the Remote control unit. The TV screen will display for 10 seconds the information you entered for the lowest program number. After 10 seconds the display will change to the available information in the next highest program number and continue until all program information has been displayed.
3. After checking, press the PROGRAM button to eliminate the on-screen display.

Notes:

1. You can review the next program without waiting 10 seconds by pressing the number five (5).
2. Timer programming cannot be checked when a recording is taking place.

To clear a program from memory

1. Press the PROGRAM button on Remote control unit.
2. Press the number five (5) on the Keyboard until the program you wish to cancel or clear is displayed.
3. Use the CLEAR button to cancel the displayed program information from memory.

To correct programming errors

Immediately after entering the date for unattended recording it is possible to correct any errors without clearing the complete program.

1. Press the CLEAR button repeatedly until the digit to be corrected is flashing.
2. Use the numbered Keyboard buttons to input the correct digit and continue the programming sequence.

Program memory back-up

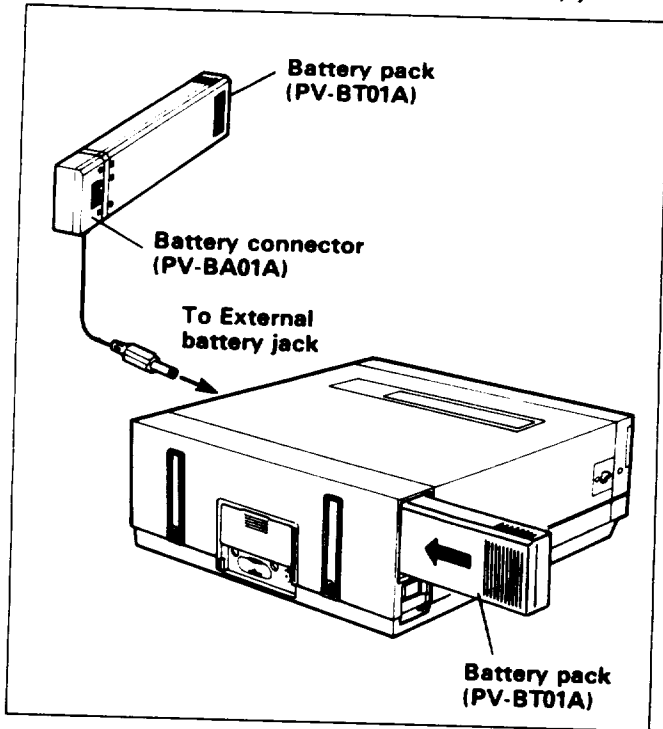
Operates when there has been a power failure of up to approximately 60 minutes. If power has been off for more than 60 minutes it will be necessary to set the time of day and input all new programming.

POWER SUPPLY (For Portable VTR)

PENTAX VTR PV-R2200A can use 3 power supplies – Exclusive battery pack PV-BT01A, car battery or household AC Power (using Video Tuner or AC Adaptor/Charger).

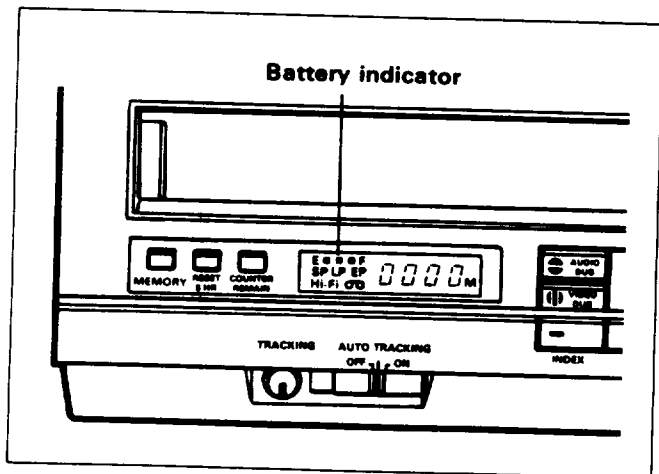
To use the exclusive battery pack PV-BT01A (optional)

- Insert the battery pack into the battery compartment or connect the pack to battery connector (PV-BA01A), then plug into the External battery jack.



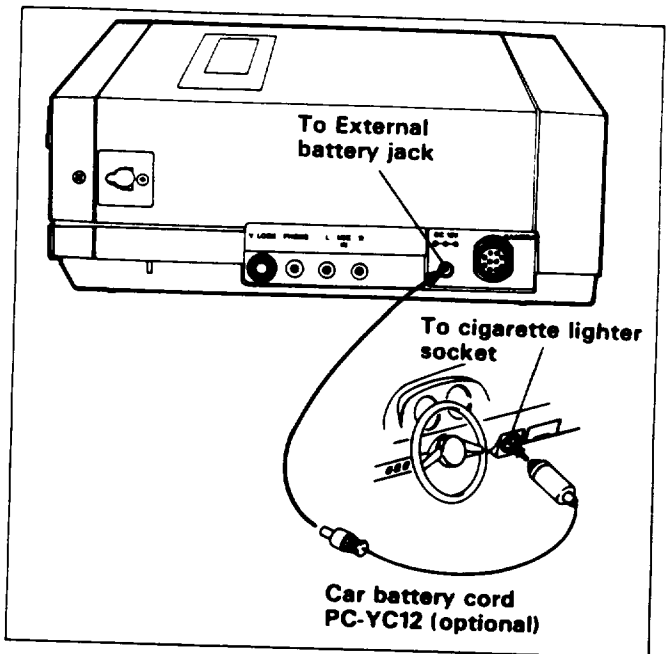
Note:

- It is important to charge the battery pack before using your portable VTR.
- When 2 battery packs are used, one in the VTR and the other connected to the External battery jack, the VTR can be operated for double the time.
- When the block of battery indicator closest to the E flashes, your battery requires recharging.



To use with car battery power (optional car battery cord PC-YC12 manufactured by PENTAX Co.)

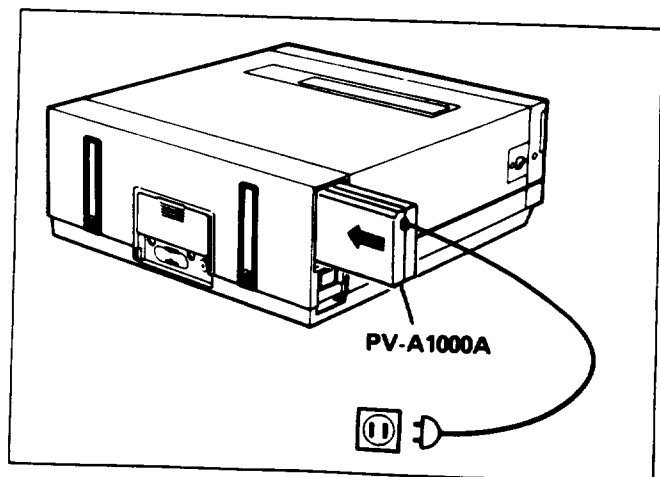
Connect the car battery cord between the External battery jack of the Portable VTR and the car's cigarette lighter socket.



Note:

- If you are going to use the Portable VTR for a long time, leave the car's engine idling, otherwise the battery will discharge.
- It is recommended that you use a fully charged battery pack in the VTR. Car battery power tends to fluctuate, which can result in bad recordings.
- Be sure to set the unit to the stop mode when pulling out the cord.
- The PC-YC12 is for use with cars with a negative ground. Consult your PENTAX regional Service Center about using the unit with cars with a positive ground.

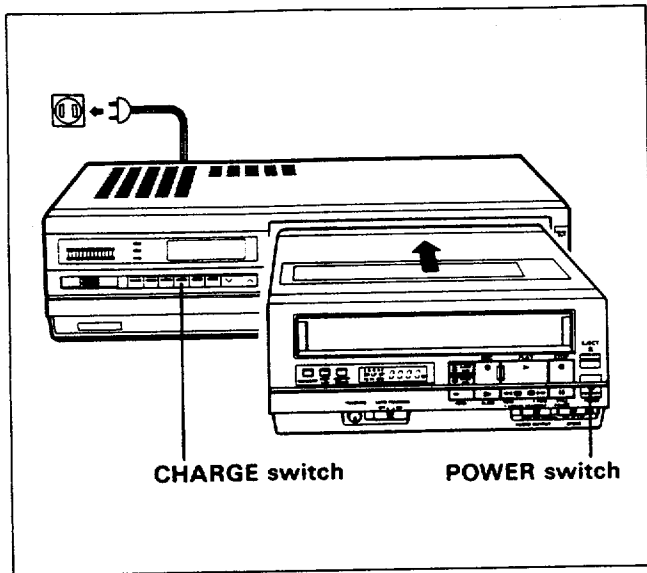
To use with household AC (AC Adaptor/Charger PV-A1000A Optional)



HOW TO CHARGE BATTERY PACK

PV-U2200A can be used as a battery charger for PV-BT01A, exclusive battery pack of Portable VTR.

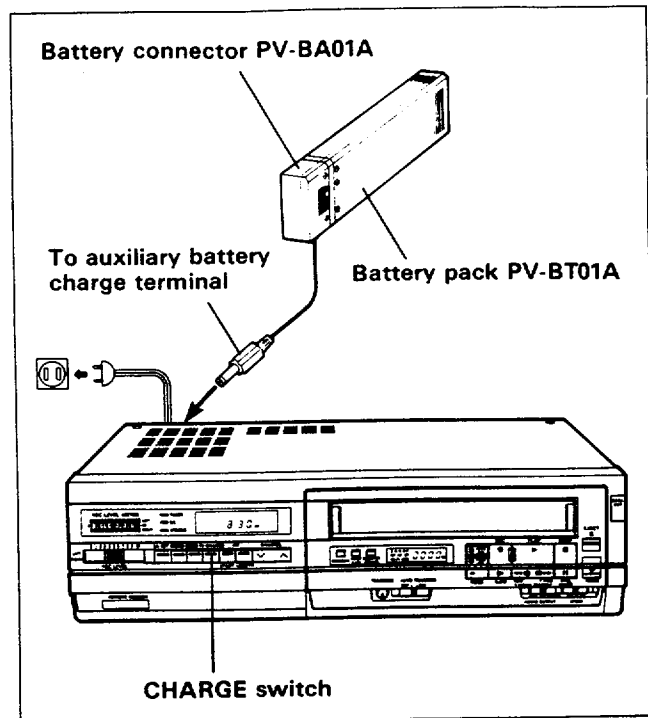
To charge battery pack installed in Portable VTR



1. Insert the battery pack into the portable VTR then mount the VTR into the tuner main frame.
2. Turn off power switch of Portable VTR.
3. Press Charge switch to "ON". When charging starts, the charge indicator will go on. When charging is complete, the indicator will go off to indicate that charging is complete.

Note: If you turn on power switch of Portable VTR, the charging will stop.

To charge a battery not installed in the VTR



1. Connect optional battery connector PV-BA01A to battery pack PV-BT01A.
2. Connect battery connector PV-BA01A to Auxiliary battery charge terminal of VTR.
3. Press Charge switch to "ON". When charging starts, the indicator will go on. When charging is complete, the indicator will go off to indicate that charging is complete.

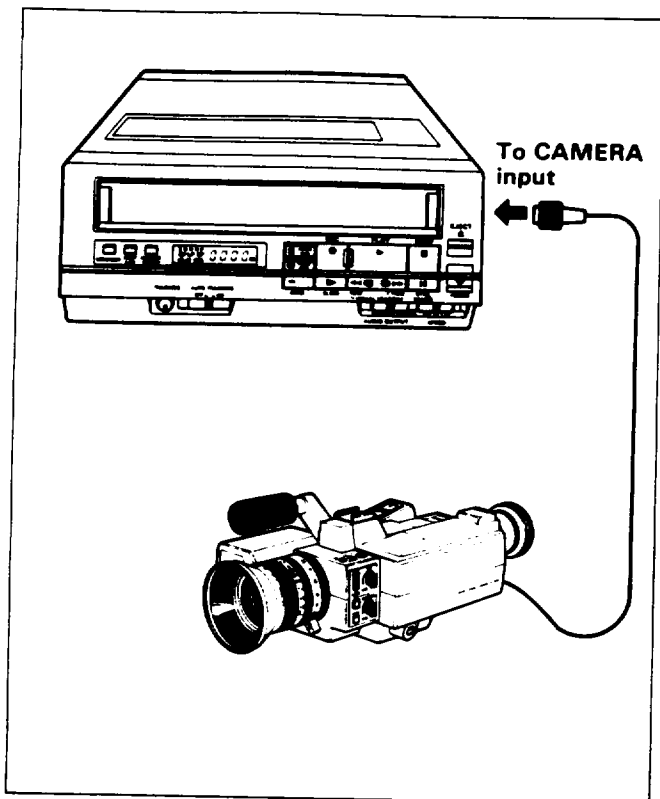
Note: Video Tuner and Portable VTR need not be connected when charging a battery at the auxiliary battery jack.

Note: Exclusive Battery Pack PV-BT01A can be used repeatedly by recharging it, however, its service life depends upon the conditions of use. The following are points to be remembered.

1. Be careful not to short the plugs of battery.
2. When 2 battery packs are connected (one in the battery compartment, the other connected to Auxiliary battery charge terminal) simultaneously, the battery pack connected to Auxiliary battery charge terminal will be charged but built in battery pack will not be charged.
3. The time required for charging is approx. 1 hour.
4. Use the PV-U2200A or PV-A1000A Adaptor/Charger to charge the battery pack. Using other equipment is dangerous.
5. Power to Portable VTR is "OFF" when battery is connected to auxiliary battery charge terminal on PV-U2200A.
6. Be sure to charge battery before using.

RECORDING FROM A VIDEO CAMERA

Refer to the Instruction Manual of the Camera as well as these instructions.



1. Insert Cassette.
2. Select SPEED select switch to "EP", "LP" or "SP".
3. Adjust aperture, focus etc. on camera. Refer to Instruction Manual of the Video Camera.
4. Press RECORD button and PLAY button simultaneously.
5. Press Remote Control button on Camera. Recording begins.
6. Press Remote Control button again, to pause during recording.
7. Press STOP button to stop recording.

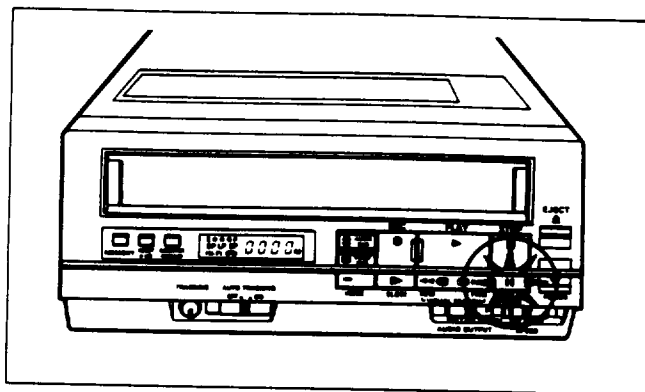
Note: Plug an earphone into the earphone jack of the VTR to monitor sound. Sound cannot be monitored when the earphone is connected to the earphone jack of the video camera.

Pause operation with camera remote pause control

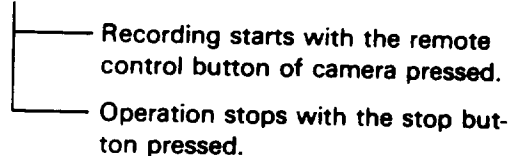
When a camera is connected and the VTR is placed in the RECORD mode, pause cannot be released with the VTR PAUSE button. It must be released using the camera remote pause control (Camera has pause priority in recording).

Power save function

Power consumption in the record pause mode is almost the same as that in recording during camera recording using the battery pack. The VTR enters the power save mode when the record pause mode continues for 5 minutes or more, and reduces power consumption to approx. 1W. The pause indicator flashes in the power save mode.



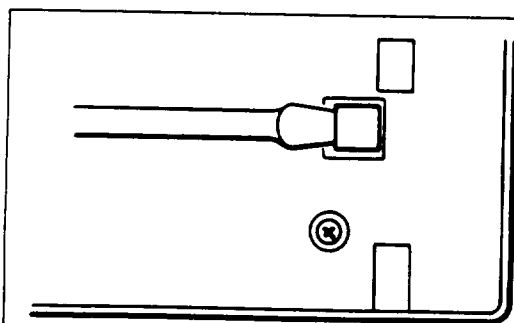
Pause indicator flashes.



The unit also enters the power save mode with the power save switch of the camera set to "POWER SAVE". In this case, recording starts again when the power save switch of the camera is returned to "NORM" and the remote control button of the camera is pressed.

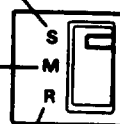
* The power save function does not work when the VTR is operating with the video tuner/timer.

Camera Select Switch at the bottom of VTR



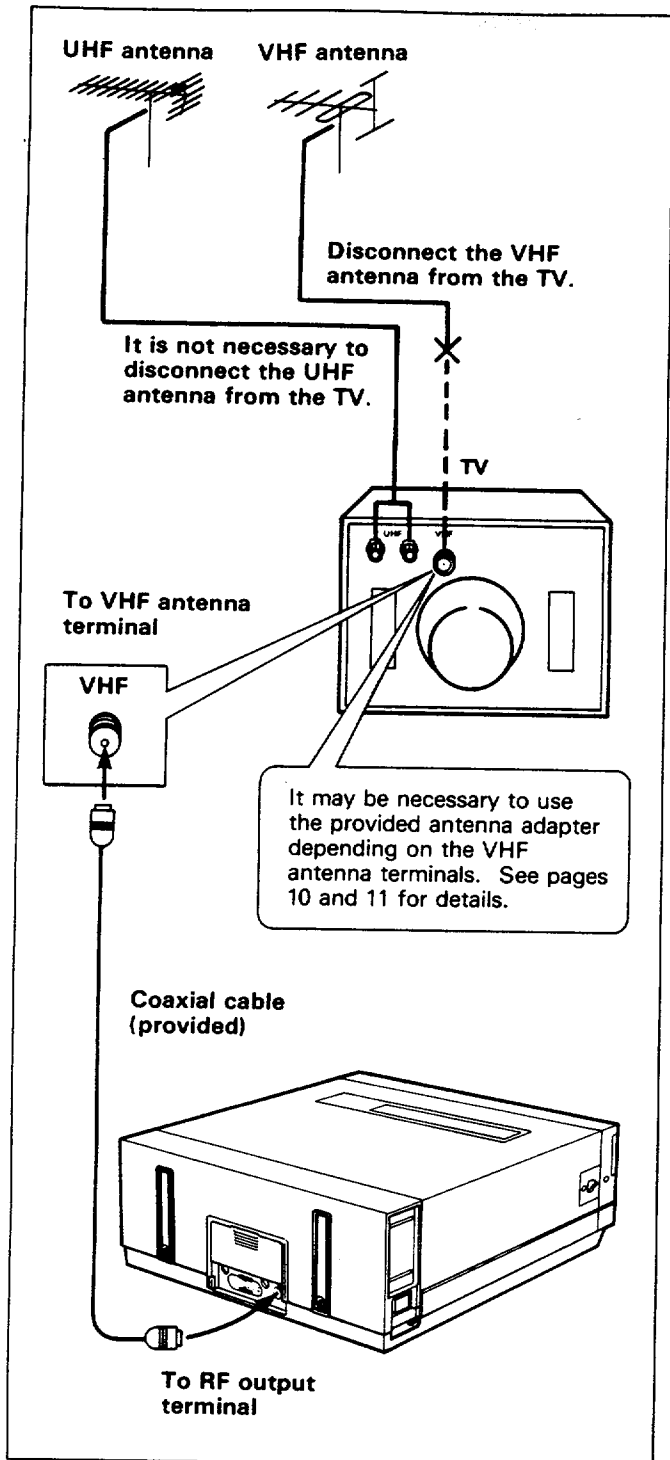
Remove the cap using a small screwdriver.

- For stereo sound video camera
- For mono sound video camera or cameras which have not provided a recording check function.
- For mono sound video camera or cameras which have provided a recording check function.



When Connecting the Portable VTR to a TV

Connect the portable VTR directly to a TV when you are travelling, and you can play back the tape immediately after it is recorded or view the picture being recorded on the TV screen.



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 VTR 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 VTR 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"> • Is power cord connected? 	<ul style="list-style-type: none"> • Connect power cord to AC outlet.
Unit does not operate with PV-BT01A battery.	<ul style="list-style-type: none"> • Is battery fully charged? 	<ul style="list-style-type: none"> • Charge or replace battery.
Timer recording is not possible.	<ul style="list-style-type: none"> • Is the program timer set correctly? • Is the POWER switch set to "OFF"? 	<ul style="list-style-type: none"> • Set the program timer correctly. • Set the POWER switch to "OFF".
REC mode cannot be engaged.	<ul style="list-style-type: none"> • Is the record safety tab missing? 	<ul style="list-style-type: none"> • Place cellophane tape over missing safety tab.
Picture is poor in playback.	<ul style="list-style-type: none"> • Is the TV channel selector on the proper channel? • Is the TV fine tuning set correctly? 	<ul style="list-style-type: none"> • For playback, the TV channel selector should be set to channel 3 or 4. • Fine tune your TV.
Noise in picture in playback.	<ul style="list-style-type: none"> • Are Video Heads clean? 	<ul style="list-style-type: none"> • Head cleaning is necessary.
No picture in playback.	<ul style="list-style-type: none"> • Is the TV set to the proper channel? 	<ul style="list-style-type: none"> • Set to correct channel, CH3 or 4. (your video channel)
Playback picture is partially noisy.	<ul style="list-style-type: none"> • Is the TRACKING control set to center position? 	<ul style="list-style-type: none"> • Adjust TRACKING control for a better picture.
TV program cannot be recorded.	<ul style="list-style-type: none"> • Is the TUNER/SC/AUX selector set to "TUNER"? 	<ul style="list-style-type: none"> • Set it to "TUNER".
Off-the-air TV programs cannot be seen.	<ul style="list-style-type: none"> • Is connection correct? • Is the TUNER/SC/AUX selector set to "TUNER"? 	<ul style="list-style-type: none"> • Connect correctly. • Set it to "TUNER".
Hi-Fi sound is not heard entirely or is interrupted.	<ul style="list-style-type: none"> • Is the Hi-Fi/MIX/LINEAR Select switch set to "Hi-Fi"? • Is the tracking control set properly? • Are the rotary heads (Hi-Fi audio heads) dirty? Only the NORMAL sound is played back when the tape is traced with dirty heads. • Is the tape played back old or scratched? 	<ul style="list-style-type: none"> • Set the switch to "Hi-Fi". • Turn the control gradually to adjust for optimum sound. Return it to the center position after playback is completed. • It is necessary to clean the heads. Consult your nearest dealer or service center. • Replace the tape. Record audio on a new tape and play it back.
Built-in battery of Portable VTR cannot be charged.	<ul style="list-style-type: none"> • Is the power switch of Portable VTR set to "OFF"? • Is the spare battery disconnected? 	<ul style="list-style-type: none"> • Set the power switch of Portable VTR to "OFF". • Remove the spare battery.

SPECIFICATIONS

Recording:	Rotary two head Helical Scan Azimuth Recording															
Video:	NTSC Color EIA Standard															
Cassette:	VHS Type															
Heads	5 Video heads: 2 for SP, 2 for LP/EP, 1 for special effect 2 Hi-Fi audio heads 1 Combination head for control track, audio erase and 2 audio record/play (4 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) CATV MID. CH A-5 ~ A-1 and A ~ I (90 MHz - 174 MHz) CATV SUPER CH J ~ W (216 MHz - 300 MHz) CATV HYPER CH W+1 ~ W+23 (300 MHz - 438 MHz) UHF CHANNELS, 14 ~ 83 (470 MHz - 890 MHz)															
Video Input:	0.5 - 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:	Line: 316 mV rms (-7.8 dBs) 47 kohm Mic: -65 dBm 1 kohm 6.5 mmφ															
Output:	Line: 316 mV rms (-7.8 dBs) 600 ohm Headphone: 8 ohm 3.5 mmφ															
S/N Ratio:	43 dB (SP)															
Frequency Range:	50 Hz to 10 kHz (SP)															
Hi-Fi Audio																
Frequency Range:	20 Hz to 20 kHz															
Dynamic Range:	More than 80 dB															
Wow and Flutter:	0.005% WRMS															
Power Input:	AC 120V 60 Hz															
Power Consumption:	7.3W Nominal (recording with DC 12V power supply) (Portable VTR) 45W (Portable VTR + Tuner)															
Cabinet Size and Weight:	<table border="0" style="width: 100%;"> <tr> <td style="width: 80%;">9-3/16"(W) x 3-3/4"(H) x 10-1/16"(D)</td> <td rowspan="2" style="font-size: 3em; vertical-align: middle;">}</td> <td rowspan="2" style="vertical-align: middle;">(Portable VTR)</td> </tr> <tr> <td>23.3(W) x 9.5(H) x 25.6(D) cm</td> </tr> <tr> <td>6.4 lbs (2.9 kg)</td> <td></td> <td></td> </tr> <tr> <td>17-1/8"(W) x 4-1/2"(H) x 12-7/8"(D)</td> <td rowspan="2" style="font-size: 3em; vertical-align: middle;">}</td> <td rowspan="2" style="vertical-align: middle;">(Portable VTR + Tuner)</td> </tr> <tr> <td>43.5(W) x 11.5(H) x 32.7(D) cm</td> </tr> <tr> <td>19.4 lbs (8.8 kg)</td> <td></td> <td></td> </tr> </table>		9-3/16"(W) x 3-3/4"(H) x 10-1/16"(D)	}	(Portable VTR)	23.3(W) x 9.5(H) x 25.6(D) cm	6.4 lbs (2.9 kg)			17-1/8"(W) x 4-1/2"(H) x 12-7/8"(D)	}	(Portable VTR + Tuner)	43.5(W) x 11.5(H) x 32.7(D) cm	19.4 lbs (8.8 kg)		
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Design and Specifications subject to change without notice.

PENTAX

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PENTAX CORPORATION. 1101 Stewart Ave. Garden City, NY 11530
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PENTAX CORPORATION. 350 East Devon Ave. Itasca, IL 60143
Service information : (312) 250-9000

PENTAX CORPORATION. 8363 Reseda Blvd. Northridge, CA 91324
Service information : (818) 701-5080