

Thank you for choosing

EXHIBIT # 6
FCC ID: ACJ9271ZGAMP
MODEL NO. NV-HD8070PX
OUR REF: MKS98-FLLS

Panasonic
Omnivision **VHS**

Video Cassette Recorder

MODEL NV-HD8070PX

Operating Instructions



Easy Taping.

Please read these instructions carefully before attempting to connect, operate or adjust this product. Please save this manual.

Quick Use Guide is on the back cover.

P6 ~ P9
Connections

P10 ~ P16
Getting Started

P17 ~ P21
Basic Operation

P22 ~ P37
More You Can Do

P38 ~ Back Cover
Other Information

Things You Should Know

Congratulations

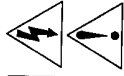
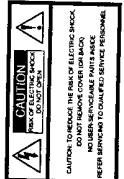
on your purchase of one of the most sophisticated and reliable products on the market today. Used properly, it will bring you and your family years of enjoyment. Please fill in the information at right. The serial number is on the tag located on the back of your VCR.

Date of Purchase _____
 Dealer Purchased From _____
 Dealer Address _____
 Dealer Phone No. _____
 Model No. **NV-HD8070PX** _____
 Serial No. _____

Safety Precautions

Warning: To prevent fire or shock hazard, do not expose this equipment to rain or moisture. This video recorder, equipped with the HQ (High Quality) System, is compatible with existing VHS equipment. Only use those tapes with the **VHS** mark. It is recommended that only cassette tapes that have been tested and inspected for use in 2, 4, 6, and 8 hour VCR machines be used.

FCC Warning: Any unauthorized changes or modifications to this equipment would void the user's authority to operate.



This symbol warns the user that uninsulated voltage within the unit may have sufficient magnitude to cause electric shock. Therefore, it is dangerous to make any kind of contact with any inside part of this unit.

This symbol alerts the user that important literature concerning the operation and maintenance of this unit has been included. Therefore, it should be read carefully in order to avoid any problems.

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Important Safeguards and Precautions

FOR YOUR SAFETY, READ AND OPERATING INSTRUCTIONS. HEED ALL WARNINGS IN THE MANUAL AND ON THE UNIT

INSTALLATION

1 POWER SOURCE CAUTION
 Operate only from a power source indicated on the unit or in this manual. If necessary, have your Electric Utility Service Company or Video Products Dealer verify the power source in your home.

2 POLARIZED OR GROUNDING PLUG
 As a safety feature, this Video product comes with either a polarized power cord plug (one blade is wider than the other), or a three-wire grounding type plug.

POLARIZED PLUG CAUTION:

This plug will only fit into an outlet one way. If you cannot fit the plug into the outlet, do not attempt to force it. An electrical fire could result if you do not defeat the safety feature by tampering with the plug.

GROUNDING PLUG CAUTION:

This plug will only fit into a three-hole grounding outlet. If you cannot fit the plug into the outlet, do not attempt to force it. Do not defeat the safety feature by tampering with the plug.

3 POWER CORD
 Make sure power cords are routed so that they are not lying on them, not over them, or be in the way of walking traffic. If an extension cord is used, make sure it also has either a polarized or grounded plug and that the cords can be securely connected. Damaged and frayed power cords and wires insulation are hazardous and should be replaced by a qualified service technician. Overloaded outlets and extension cords are fire hazards and should be avoided.

DO NOT BLOCK VENTILATION HOLES

Ventilation openings in the cabinet release heat generated during operation. If they are blocked, heat build-up inside the unit can cause failures that may result in fire or electric shock. For protection, follow these rules:

- Never cover ventilation slots or the unit while in use, or operate the unit when placed on a bed, sofa, rug, or other soft surface.
- Do not place the unit on a rack, such as a book case or rack, unless proper ventilation is provided.

AVOID EXTREMELY HOT LOCATIONS OR SUDDEN TEMPERATURE CHANGES

Do not place the unit near or under any kind of heater or radiator. Do not place the unit near closed valves, etc. Do not move the unit suddenly between areas of extreme temperature variation. If the unit is suddenly moved from a cold place to a warm place, moisture may condense in the unit and on the tape.

TO AVOID PERSONAL INJURY

- Do not place unsecured equipment on a sloping surface.

- Do not place this unit on any support that is not firm, level, and adequately strong. The unit is not designed for use on a child or adult and damage to the unit.

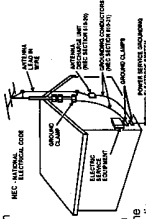
- An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

- Carefully follow all operating instructions and use the proper lifting technique when operating this unit or connecting it to any other equipment.



OUTDOOR ANTENNA INSTALLATION

- SAFE ANTENNA AND CABLE CONNECTION**
 The antenna system is connected to the equipment. Be sure the antenna or cable system is grounded so as to provide some protection against built up static charge surges. See the instructions for the antenna system. See also the instructions for the antenna system. See also the instructions for the antenna system. See also the instructions for the antenna system.



- KEEP ANTENNA CLEAR OF HIGH VOLTAGE POWER LINES OR CIRCUITS**
 An outside antenna system should be located well away from power lines, electric light or power circuits and where it will never come into contact with these power sources if it should happen to fall. When installing an outside antenna system, be sure that the antenna system is not in contact with power lines or other power sources as this could be fatal. Because of the hazards involved, antenna installation should be left to a professional.

USING THE VIDEO UNIT

If the unit has been in storage or moved to a new location, refer first to the **INSTALLATION** section of these safeguards.

- KEEP THIS VIDEO UNIT AWAY FROM WATER OR MOISTURE OF ANY KIND.**

- IF EQUIPMENT IS EXPOSED TO RAIN, MOISTURE, OR STRONG IMPACT,** unplug the unit and have it inspected by a qualified service technician before use.

DURING AN ELECTRICAL STORM

During a lightning storm, whether indoors or outdoors, or before leaving the home, unplug the unit and disconnect all equipment from the power source as well as the antenna and cable system.

- WHEN THE UNIT IS PLUGGED IN, DO NOT OPERATE** if liquid has been spilled into the unit. Immediately unplug the unit, and have it inspected by a service technician. Fire and shock hazards can result from electrical shorts caused by liquid contact inside.

- Never drop or push any object through openings in the unit. Some internal parts may be damaged by hazardous voltages and contact can cause electric shock or fire hazard.
- Avoid placing the unit directly above or below your TV set as this may cause electrical interference. Keep all magnets away from electronic equipment.

USING ACCESSORIES

Use only accessories recommended by the manufacturer to avoid risk of fire, shock, or other hazards.

CLEANING THE UNIT

Unplug the unit. Then, use a clean, dry, chemically untreated cloth to gently remove dust or debris. **DO NOT USE** cleaning fluids, aerosols, or forced air. Any substance spray, or seep into the unit can cause electrical shock. Avoid cleaning the unit with any liquid. Avoid cleaning the unit with any surface. Exposure to greasy, humid, or dusty areas may adversely affect internal parts.

SERVICE

- DO NOT SERVICE THIS PRODUCT YOURSELF**
 If, after carefully following the detailed operating instructions, this Video product does not operate properly, do not attempt to open or remove covers, or make any adjustments not described in the manual. Unplug the unit and contact a qualified service technician.

- IF REPLACEMENT PARTS ARE REQUIRED**
 Make sure the service technician uses only parts specified by the manufacturer, and that the technician is qualified to do the work. The use of unapproved substitutes may result in fire, electric shock, or other hazards.

HAVE THE SERVICE TECHNICIAN PERFORM A SAFETY CHECK

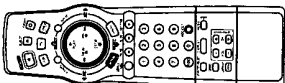
After any service or repairs to the unit, request the service technician to conduct a thorough safety check as described in the manufacturer's service literature to insure that the video unit is in safe operating condition.

Unpacking Your VCR • Product Features

Unpacking Your VCR

The accessories below are provided to help you use or set up your VCR.

Accessories



Light Tower™ Universal Remote Control VSQS1578

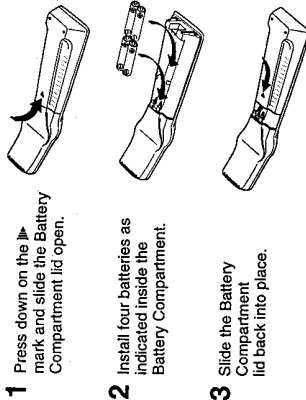


Power Plug Adaptor VJSS0070



RF Coaxial Cable VJAS0196

Loading the Batteries



Battery replacement caution

- Do not mix old and new batteries.
- Do not mix alkaline with manganese batteries.

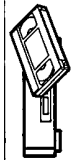
Caution:

- Voltage 110V, 220V and 240V are not for use in USA.
- Operation at a voltage higher than 120V AC may require the use of a different AC Plug. Please contact either a local or foreign Panasonic Distributor Center for assistance in selecting an alternate plug.

Product Features

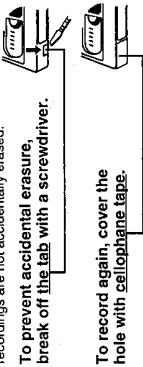
Auto Clock Set	12 - 14
Auto Daylight Saving Time	5
Auto Features for a Quality Picture	17
Auto Operation Functions (Auto Playback, Rewind, Tape Eject, Power Off)	17
Auto Repeat Function	24
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VCR and Cassette Information



Erase Protection (Record Tab)

Cassettes have a record tab to ensure that recordings are not accidentally erased.



To prevent accidental erasure, break off the tab with a screwdriver.

To record again, cover the hole with cellophane tape.

Reset all VCR Memory Functions

Use when moving the VCR to a new location, or if a mistake was made in the One Time VCR Setup section.

- Make sure a tape is not inserted in the VCR.
- 1) Turn VCR Power on.
- 2) Press and hold both **PLAY** and **CHANNEL** ▲ on the VCR for more than 5 seconds.
- The power will shut off.
- 3) Perform the One Time VCR Setup section on page 12.

D.S.T. (Daylight Saving Time)

Your VCR can be set to automatically adjust the clock for Daylight Saving Time. (Page 13.)

Spring (First Sunday in April)

When set to DST-ON, the VCR will automatically set the clock ahead one hour.

Autumn (Last Sunday in October)

When set to DST-ON, the VCR will automatically set the clock back one hour.

- If your area does not observe Daylight Saving Time, select DST-OFF.
- Keep these time changes in mind when programming the VCR for timer recordings.

Specifications

- Power Source:** 110/120/220/240V AC Auto 50/60 Hz
- Power Consumption:** Approx. 23 watts (Power on) Approx. 3.7 watts (Power off)
- Video Signal:** EIA Standard NTSC color
- Video Recording System:** 4 rotary heads helical scanning system
- Audio Track:** 1 track (Normal)
- Tuner:** For USA: 2 channel (Hi-Fi Audio Sound)
- For EUROPE: VHF input ch2-ch13, cable "A"-E, "B"-E, "C"-E, "D"-E, "E"-E, "F"-E, "G"-E, "H"-E, "I"-E, "J"-E, "K"-E, "L"-E, "M"-E, "N"-E, "O"-E, "P"-E, "Q"-E, "R"-E, "S"-E, "T"-E, "U"-E, "V"-E, "W"-E, "X"-E, "Y"-E, "Z"-E
- For USA:** VHF input ch2-ch13 (USA) UHF input ch21-ch62 (C.C.I.R.)
- Operating Temperature:** 41°F - 104°F (5°C - 40°C)
- Weight:** 19% - 75%
- Dimensions:** 16-15/16" (W) x 7-13/16" (H) x 11-13/16" (D)
- Weight:** 7.9 lbs. (3.5 kg)
- Dimensions:** 430 (W) x 98 (H) x 300 (D) mm

Note: Designs and specifications are subject to change without notice.

Build-in Head Cleaner

A clean video head helps produce a clear picture. So, we have equipped the VCR with a built-in head cleaning system that helps prevent clogging of the video heads. Cleaning is performed each time you load or unload a video cassette.

Note: This feature is preventative only. If your video heads are seriously clogged, consider the use of a chemical nonabrasive head cleaning kit or take your VCR to a Service Center.

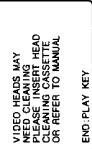
Head Cleaning

Your VCR will not normally require head cleaning, however, the heads may become clogged when playing an old or damaged tape.

Video Heads Sensor System

If head cleaning becomes necessary, the VCR will display the screen shown to the right while playing back a Video Tape. To exit this screen, push **PLAY** on the remote control or VCR.

- Use "dry" type head cleaning cassette* only.
- Be sure to follow the cleaning tape instructions carefully.
- Do not use any other cleaning products on the video heads.
- If using a head cleaning cassette does not solve the problem, contact your nearest Factory Service Center or authorized Service Center.
- Cleaning cassette part No. NV-TCL30PT is recommended.

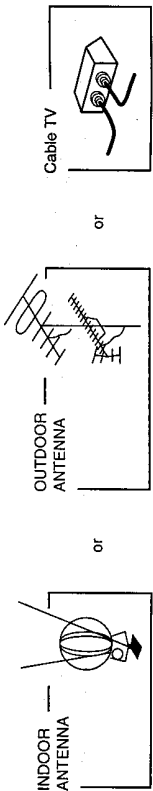


VIDEO HEADS MAY BECOME CLOGGED. PLEASE INSERT HEAD CLEANING TAPE OR REFER TO MANUAL FOR INSTRUCTIONS. END: PLAY KEY

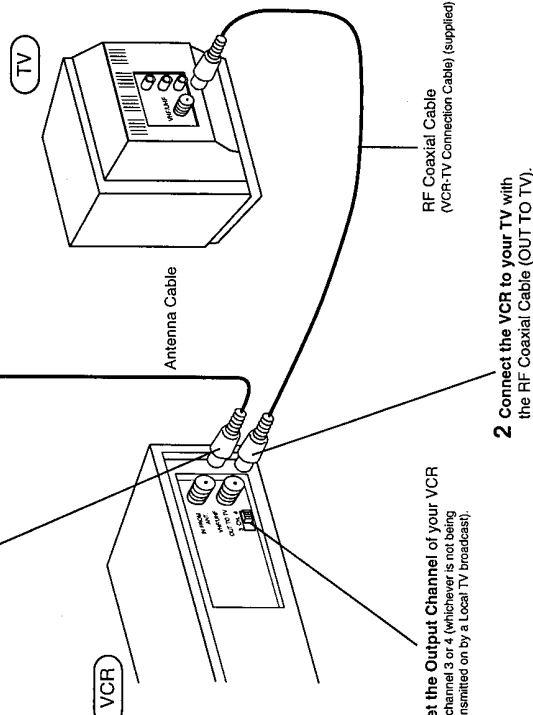
Basic Connection



ANTENNA



1 Disconnect the antenna or cable from your TV and connect it to the VCR (IN FROM ANT.)



3 Set the Output Channel of your VCR to channel 3 or 4 (whichever is not being transmitted on by a Local TV broadcast).

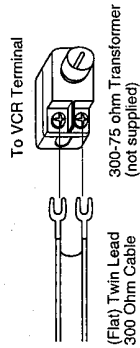
2 Connect the VCR to your TV with the RF Coaxial Cable (OUT TO TV).

WARNING

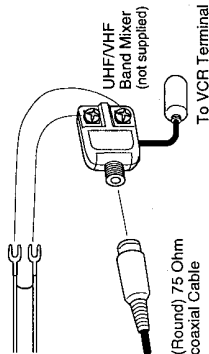
When using "Nut type" RF coaxial cables, tighten with fingers only. Overtightening may damage terminals.

Between Antenna and VCR

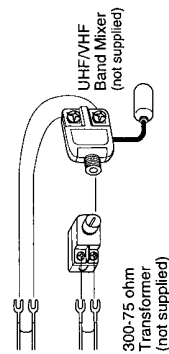
Case 1: Twin Lead Cable Only



Case 2: Twin Lead & Coaxial Cables



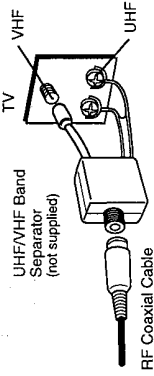
Case 3: Two Twin Lead Cables



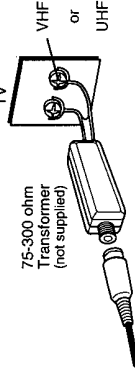
If your TV has both post and plug-type VHF terminals, the post connection is recommended to minimize signal loss.

Between VCR and TV

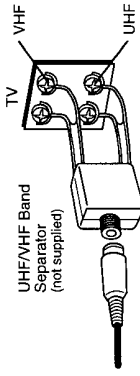
Case 1: Screw & Plug Type Terminal



Case 2: Screw Type Terminal

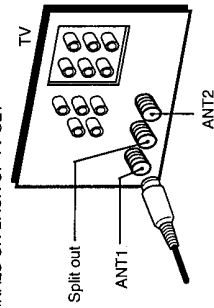


Case 3: Double Screw Type Terminal



Case 4: Complex TV Terminal

TERMINALS ON BACK OF TV SET



Connect to one of the ANT terminals and select the same antenna number on the TV.

Other Connections

CABLE CONNECTIONS

All connections on these pages are made with 75 Ohm coaxial cables.

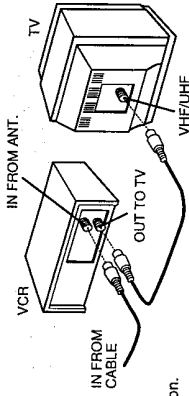
Without a Converter/Descrambler Box

You can:

- 1) Use your VCR Remote Control to select channels.
- 2) Program one or more unscrambled channels for unattended recording.

You cannot:

- record or view scrambled channels with this connection.



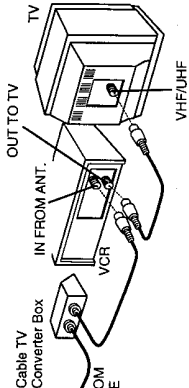
With a (CABLE to VCR) Converter/Descrambler Box

You can:

- 1) Record and view any channel including scrambled channels; channel selection must be made at the Cable TV Converter Box.
- 2) Program one channel for unattended recording.

You cannot:

- select channels from VCR or TV.
- watch one station while recording another.
- place channels in memory other than the Cable box output channel.



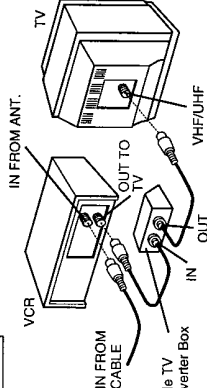
With a (VCR to TV) Converter/Descrambler Box

You can:

- 1) Use your VCR Remote Control to select channels.
- 2) Program unattended recordings of more than one unscrambled channel.

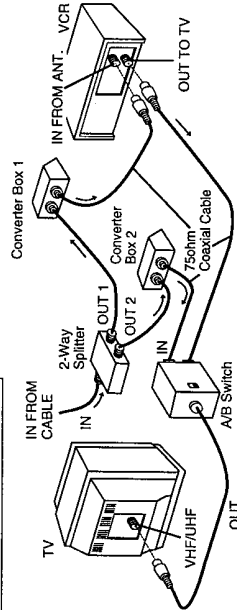
You cannot:

- record scrambled channels with this connection.



With Two Converter/Descrambler Boxes

If you want to record and view a combination of scrambled and unscrambled channels, you will need additional equipment. This connection requires two converter boxes, an A/B switch, and a 2-way splitter as shown here.



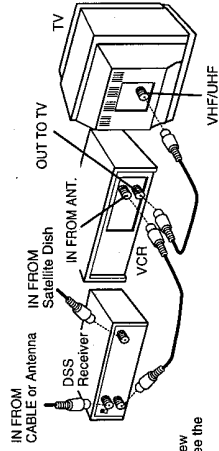
Connections

With a DSS Receiver

You can:

- 1) Record and view any channel including scrambled channels; channel selection must be made at the DSS Receiver.
- 2) Program one channel for unattended recording.

NOTE: The DSS receiver must be turned off to view programs from a cable box or antenna. See the DSS manual for details.

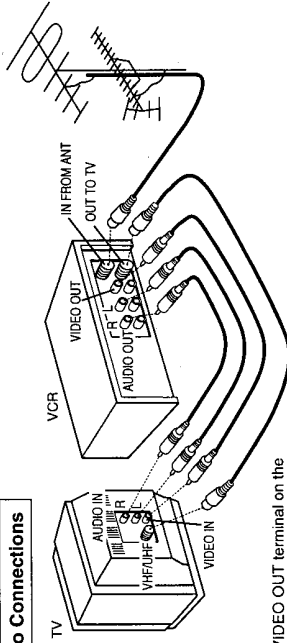


*DSS® is a registered trademark of DIRECTV, INC., a unit of GM Hughes Electronics.

Audio/Video Connections

If your TV has AUDIO IN and VIDEO IN terminals, you can connect your VCR to them to receive a higher quality picture and sound. If your TV is not stereo, you can connect a stereo amplifier to the VCR to enjoy stereo sound.

Audio/Video Connections



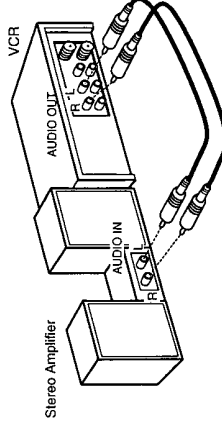
- 1 Connect the VIDEO OUT terminal on the VCR to the VIDEO IN terminal of your TV.
- 2 Connect the "L" and "R" AUDIO OUT terminals on the VCR to the "L" and "R" AUDIO IN terminals of your TV.
- 3 Set the VIDEO/TV selector of your TV (Monitor/Receiver) to "VIDEO."

NOTE: To use your TV as a VCR monitor, set the VIDEO/TV selector on the TV (Monitor/Receiver) to "VIDEO." Use the L Audio In Jack for proper sound reproduction when connecting to a monaural TV.

Stereo Amplifier Connections

When you connect your VCR to a Stereo Component System, you can view the picture from the VCR while enjoying stereo from your audio system.

Connect the "L" and "R" AUDIO OUT terminals on the VCR to the "L" and "R" AUDIO IN terminals of your stereo.



Note to CABLE system installer: This reminder is provided to call the CABLE system installer's attention to Article 620-40 of the NEC in USA (and to the Canadian Electrical Code in Canada) that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

Location of Controls

Remote Control Buttons

- EJECT** See pages 17, 37.
- POWER** See pages 12, 20, 21, 35-37.
- VCR/TV** See pages 12, 19, 37.
- PLAY** See pages 17, 23, 37.
- SELECT UP** See pages 12-16, 20-22, 24-28, 31, 33-35.
- REWIND/SEARCH SET/BACKSPACE** See pages 12-14, 20, 21, 26, 27, 34, 35.
- ACTION** See pages 12-16, 24-28, 31, 33, 34.
- ZERO SEARCH/1 MINUTE SKIP** See pages 24, 37.
- PAUSE** See pages 17, 18, 29, 37.
- NUMBERED KEYS** See pages 14, 18, 22, 35, 37.
- COUNTER RESET** See pages 24, 37.
- SPEED** See pages 18, 37.
- SAP/Hi-Fi** See pages 31, 37.
- TV** See pages 36, 37.
- LIGHT** See pages 10, 37.
- CABLE/DSS** See pages 36, 37.
- INPUT** See pages 18, 19, 23, 37.
- FAST FORWARD/SEARCH** See pages 17, 22, 23, 37.
- STOP** See pages 15, 17, 18, 21, 23, 37.
- SELECT DOWN** See pages 12-16, 20-22, 24-28, 31, 33-35.
- PROGRAM** See pages 20, 21, 35.
- RECORD/TIME** See pages 18, 37.
- SLOW** See pages 17, 37.
- ADD/DELETE** See pages 14, 21, 26, 27, 34, 35.
- INDEX/ENTER** See pages 22, 37.
- DISPLAY** See pages 16, 18, 24, 30, 37.
- CHANNEL UP/DOWN (TRACKING UP/DOWN)** See pages 12-15, 17-19, 37.
- VOLUME UP/DOWN** See page 37.

Light Tower Universal Remote Control

Light button: When the LIGHT button is pressed, the buttons which can be activated in the selected mode will light and the selected mode button (TV/VCR or CABLE/DSS) will flash for 5 seconds. If no buttons are pressed within 5 seconds, the light will turn off in order to conserve battery power. Also, while holding down the buttons, the selected mode button will flash so you will be able to see, in the dark, which mode has been selected.

EJECT button: When EJECT is pressed, the tape in the cassette will be ejected.

If EJECT is pressed during recording, the VCR will not respond to the command.

Front View of the VCR

- POWER** See pages 12, 20, 21, 35.
- VIDEO Input Connector** See page 29.
- AUDIO Input Connector (L/R)** See pages 11, 17-21, 35.
- VCR/TV Selector** See pages 12, 19, 29.
- Multi Function Display** See pages 11, 17-21, 35.
- REMOTE SENSOR**
- Cassette Compartment** See pages 17, 18, 29.
- REWIND/SEARCH** See pages 17, 21, 22, 23.
- PLAY** See pages 17, 21, 23, 29.
- FAST FORWARD/SEARCH** See pages 17, 21-23.
- STOP/EJECT** See pages 17, 18, 21, 23, 29.
- RECORD/TIME** See pages 18, 21, 25, 29.

Multi Function Display

- Cassette-In Indicator** Lights when a tape is in the VCR.
- SPEED Display** Displays the recording speed.
- Power Indicator** Lights when power is on.
- Hi-Fi Indicator** Lights when Hi-Fi audio is monitored or played back.
- REC(ord) Indicator** Lights during recording.
- SP** Lights when the station you are tuned to is broadcasting SAP.
- STEREO Indicator** Lights when the station you are tuned to is broadcasting stereo.
- Timer Indicator** Lights when the VCR is set for a Timer Recording, or when a length is set for a normal recording. The Timer Indicator flashes when a Timer Recording is set, but a tape has not been inserted into the VCR.
- Hi-Fi** Lights when Hi-Fi audio is monitored or played back.
- VCR Indicator** Lights when the VCR/TV selector is set to VCR.
- Function Indicator** Shows what the VCR is doing.
 - REC and ► Record
 - REC and ◀ Playback
 - ◀ Play-pause
 - ▶ Slow motion or Frame advance
 - ▶ Play-pause
 - ▶ Rewind or Rewind search
 - ▶ Fast forward or Forward search
 - ▶ Cassette ejecting
- Clock/Status/Channel Display** Displays the current time. Briefly displays VCR status when a function button is pressed. Briefly displays the channel number, or "L1" or "L2" when a channel or line input is selected. Displays the tape counter during tape operation.

Rear View of the VCR

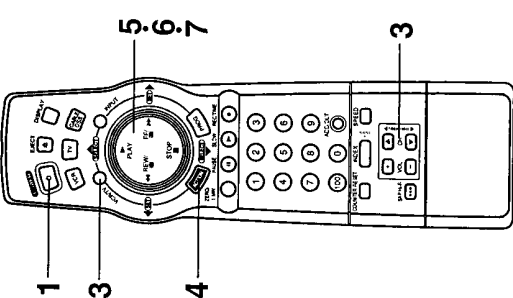
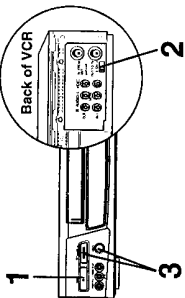
- AC Power Plug** While plugged into an AC outlet, the VCR consumes 3.7 W of electrical power in OFF condition.
- Video Output Connector** See pages 9, 29, 30.
- VHF/UHF Antenna Input Terminal** See pages 6-9, 30, 33.
- VHF/UHF Antenna Output Terminal** See pages 6-9, 29, 30, 32.
- Channel 3/4 Switch** See pages 6, 12.
- Video Input Connector (L/R)** See pages 29, 32.
- Audio Input Connector (L/R)** See pages 29, 32.
- Audio Output Connector (L/R)** See pages 9, 29, 30.

One Time VCR Setup

***Important:** If the remote control POWER, ACTION, PROG, CH▲, INDEX or ADD/DLT button does not work when pressed, press the VCR button on the remote and try the button again.

To Set the Language, Channels and Auto Clock

- 1 Turn the TV and VCR on.*
- 2 Tune your TV to the VCR output channel (the same one you set on the back of the VCR, CH3 or CH4).
 - If you used audio/video jack connection, tune the TV to its video input.
- 3 Press CH▲ for English on-screen displays. Or, press CH▼ for Spanish on-screen displays. Or, press VCR/TV for French on-screen displays.
 - If wrong language is set, see the "Reset all VCR Memory Functions" section on page 5.
 - You can also set the language using the buttons on the VCR.
 - The VCR should be connected to an antenna or cable box (page 6-9).

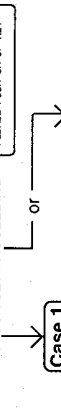


- 4 Press ACTION within 1 minute to display the "SET CLOCK" screen.
- 5 Press ▲ and ▼ to select and set "AUTO SET" or "MANUAL SET".
 - If you selected "AUTO SET", continue with step 6. If you selected "MANUAL SET", go to step "b" and "c" below left on page 13.
- 6 Press ▲ to select your hookup, and then press ▼ to set.
 - If you selected "CABLE/DSS BOX" VCR▶TV, continue with step 5. If not, go to step 7.
 - If you are using the CABLE/DSS BOX VCR▶TV connection method, only the cable box output channel will be placed in memory.
- 7 Press ▲ to select your cable box or DSS receiver output channel number, and then press ▼ to enter.
 - If necessary, refer to your cable box manual.
 - If you are using Audio/Video Jack connections to your cable box, select set "VIDEO OUT" as the output channel.

- 8 Turn on the cable box and set it to the PBS channel in your time zone.
 - If you use a DSS receiver, it must be turned off.

9 Press CH▲ to start Channel Auto Set and Clock Auto Set.

- The following messages appear: "CH AUTO SET PROCEEDING", "AUTO CLOCK SET PROCEEDING"



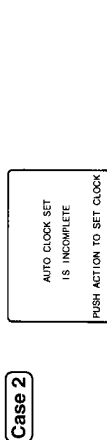
Case 1
1/ 4/2000 TUE 12:00PM
SETTING : CH 02
AUTO CLOCK SET COMPLETED
END : PUSH CH UP KEY

Case 2
CHANNEL/CLOCK AUTO SET
CONNECT ANTENNA CABLE BOX TIME TO YOUR CHANNEL LOCAL PBS CH THEN...
PLEASE PUSH CH UP KEY

See below left.

If the displayed time is correct, press CH▲ to exit.
 • This concludes one time VCR setup.
 • See important note at the bottom of this page.
 If the displayed time and DST are not correct...
 If you happen to live close to two time zones, the VCR may have recognized the PBS channel (setting channel) in the wrong time zone. Please do the following to correct the situation.

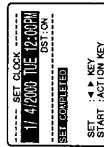
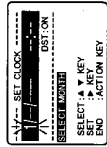
- 1 Make a note of the SETTING:CH number shown on-screen and press CH▲ to exit.
- 2 Delete the setting channel from the VCR channel memory. (See "To Add or Delete a Channel" section on page 14.)
- 3 Press ACTION to display the menu.
- 4 Press ▲ to select "SET CLOCK" and then press ▼ to display the "SET CLOCK" screen.
- 5 Press ▲ to select "AUTO CLOCK SET" and then press ▼ to display the "CLOCK AUTO SET" screen.
- 6 Press CH▲ to start Clock Auto Set.
 - If you use a cable box and have multiple PBS stations, tune the cable box to a different PBS station and try auto clock set using the menu.



Case 2
AUTO CLOCK SET IS INCOMPLETE
PUSH ACTION TO SET CLOCK

If the CASE 2 Screen "AUTO CLOCK SET IS INCOMPLETE" appears, auto clock set is not available in your area. Please set the clock manually as described below.

- Press ACTION to display the SET CLOCK screen.
 - Press ▲ and ▼ to select and set the month, date, year, time, and DST. (Daylight Saving Time).
- To Make Corrections, repeatedly press ▲ to move the cursor to the incorrect entry and make the correction.
- Press ACTION twice to start the clock and exit this mode.



IMPORTANT NOTE FOR AUTO CLOCK SET WHEN USING CABLE BOX OR DSS RECEIVER

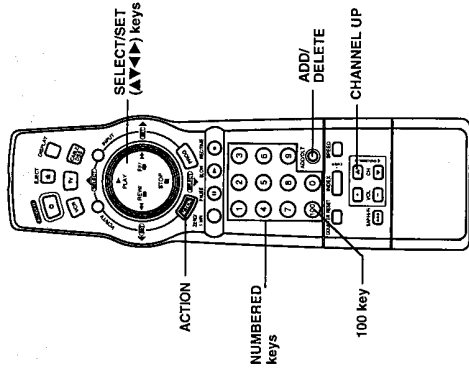
- Auto clock set will be performed when the VCR is turned off the first time each day. If you use a cable box and you want auto clock set to be performed, the cable box must be left on and tuned to the PBS channel before the VCR power is turned off.
- If you use a DSS receiver, it must be turned off for auto clock set.
- If you use Audio/Video Jack connection between the VCR and Cable Box or DSS receiver, you must also connect the RF coaxial cable in order to use the auto clock set and channel auto set features.

Using ▲▼ keys

Whenever a menu or program screen is displayed, the PLAY, STOP, REWIND, and FF keys on the remote control function as ▲▼ keys. Use these keys for play, stop, rewind, and fast forward functions. When a program screen is displayed, the REC, FF, REW, and PLAY buttons on the remote control and the VCR functions as ▲▼ keys only. (See Timer Recording Using VCR Buttons on page 21.)

One Time VCR Setup

*Important: If the remote control POWER, ACTION, PROG, CH▲, INDEX or ADD/DLT button does not work when pressed, press the VCR button on the remote and try the button again.

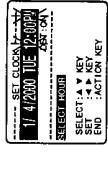
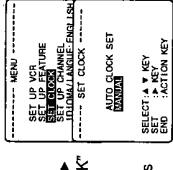


To Set or Reset the Clock

In case the clock is wrong, or a power failure occurred.

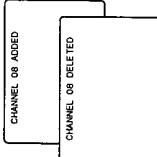
- 1 Press ACTION* to display the menu.
- 2 Press ▲ to select "SET CLOCK", and then press ► to display the "SET CLOCK" screen.
- 3 Press ▲ to select "MANUAL", and then press ► to display the SET CLOCK screen.
- 4 Press ▲ and ◀ to select and set the date, time, and DST. (Daylight Saving Time).
- 5 Press ACTION twice to start the clock, and exit this mode.

* For Auto Clock Set, select "AUTO CLOCK SET", and then press CH ▲ in step 3.



To Add or Delete a Channel

- 1 Select a channel using the NUMBERED keys to add or CH ▲/▼ to delete.
- 2 Press ADD/DLT to add or delete the channel.
 - To select a channel once it's deleted, use the NUMBERED keys on the remote control.



When Using the 100 key

When selecting CABLE channels 100 to 125 with the NUMBERED keys, first press the 100 key and then enter the remaining two digits. For example, to select channel 125; Press NUMBERED keys 100, then 2, then 5.

* This VCR will accurately maintain its calendar up to Dec. 31, 2099, 11:59PM.
 * Normal TV or Cable channels are automatically selected and placed in memory depending on how your VCR is hooked up.

Getting Started

Antenna System in Europe

Select the "EUROPE" antenna system on the screen. Use channel auto set for the UHF and VHF bands in channel auto set, the antenna system is automatically set to the "TV" mode. This will allow you to receive C.C.I.R. broadcast such as AFN.

TV Brand Channel Chart		
Selected Channel indication	Channel Band designations	Channel Received off the Air
02-13	VHF	2-13 (USA)
21-62	UHF	21-62 (C.C.I.R.)

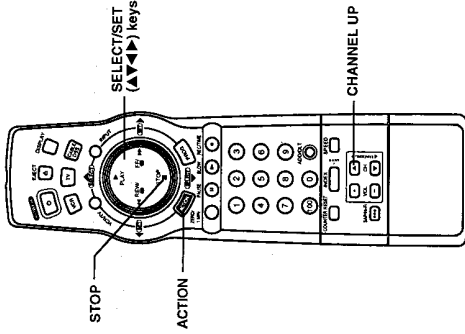
Antenna System in USA

Your VCR is capable of receiving the OFF-THE-AIR and Cable broadcasts available in your area from the standard U.S. reception system.

TV Brand Channel Chart		
Selected Channel indication	Channel Band designations	Channel Received off the Air
02-13	VHF	2-13
14-69	UHF	14-69

Cable Chart

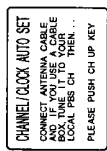
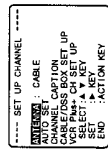
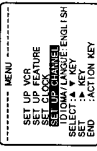
Selected Channel indication	Channel Band designations	Channel Received off the Air
02-13	Broadcast VHF	2-13
14-36	CATV Mid/Super Bands	A-W
37-64	CATV Hyper Band	2-13
65-94 100-125	Ultra Band	65-94 100-125
95-99	CATV Low band	A-5-A-1
01	Special CATV Channel	5A (between 4 and 5)



To Change Antenna System and Replace Channels in Memory

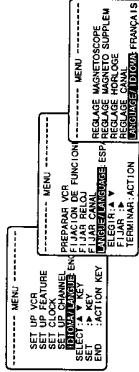
Example, if you have cable installed, etc. This VCR is capable of receiving channels with the US or the European C.C.I.R. standards. The reception of channels in charts shown here are based on menu screen for Tuning System you have chosen and depend on proper cable connections being made between the TV, VCR and antenna.

- 1 Press ACTION to display the menu.
- 2 Press ▲ to select "SET UP CHANNEL", and then press ► to display the "SET UP CHANNEL" screen.
- 3 Press ▲ to select "ANTENNA", and then press ► to set your antenna system (TV, CABLE or Europe).
- 4 Press ▲ to select "AUTO SET", and then press ► to display the "CHANNEL/CLOCK AUTO SET" screen.
 - If you use a cable box, turn it on and set it to the PBS channel in your time zone.
 - See at right for channel chart of USA and EUROPE.
- 5 Press CH ▲ to start Channel Auto Set.
 - Clock Auto Set will be performed when channels are received. The message "STORING CHANNELS" appears on-screen.
 - "AUTO CLOCK SET PROCEEDING" appears on-screen.
 - To exit this mode, press ACTION twice.



To Change On-Screen Display Language

- 1 Press ACTION to display the menu.
- 2 Press ▲ to select the language.
 - English: LANGUAGE
 - Spanish: IDIOMA
 - French: LANGUE
- 3 Press ► repeatedly to change the language.



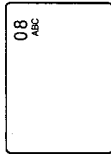
4 Press ACTION to exit this mode.

On-Screen Displays (OSD)

*Important: If the remote control POWER, ACTION, PROG, CH▲▼, INDEX or ADD/DLT button does not work when pressed, press the VCR button on the remote and try the button again.

Function & Channel Display

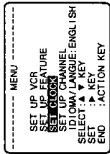
When a function button is pressed, e.g. PLAY, or you change channels, a 4 second display appears first in large and then small characters. (Some Station names may also appear if Channel Caption is set. See pages 26, 27.)



Menu Screen

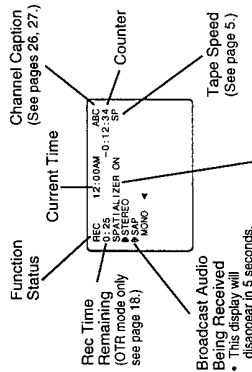
- 1 Press ACTION* to display the menu.
- 2 Press ▲▼ and ◀▶ to make your selection.

* To get the most from each feature, please read the Operating Manual before attempting any operation.



VCR Status & Clock Display

Press DISPLAY to display or remove the overlay shown below.



Spatializer (See page 31.)

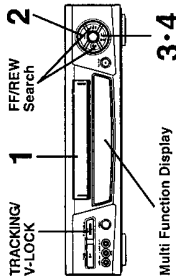
Blank Tape/ No Video Signal Indication

Whenever a blank section of a tape comes up in Play mode, or when the selected channel has no broadcast signal with the Blue Back ON/OFF Feature (page 28) set to ON, the TV screen will turn solid blue.

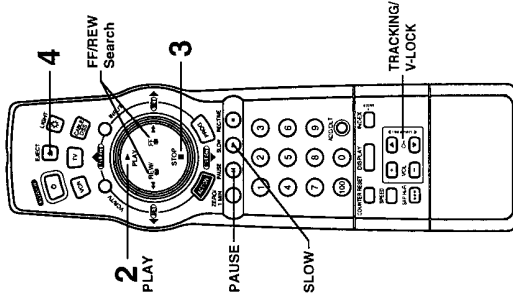


Playback a Tape

- 1 Check list before you begin.
 - All connections are made. (See pages 6-9.)
 - TV and VCR are plugged in.
 - TV is turned on and set to the VCR channel (CH 3 or 4).



3•4 Multi Function Display



Caution:

Please inspect your cassette tapes and remove any loose or peeling labels to prevent them from becoming jammed in your unit.



1 Insert a cassette.

- VCR power comes on automatically.
- VCR lights in the Multi Function Display.

2 Press PLAY on the remote or VCR to start playback.

- Playback begins automatically if cassette has no record tab.

3 Press STOP on the remote or VCR to stop playback.

- To rewind the tape, press REW.

4 Press EJECT on the remote or VCR to eject the cassette.

- You may eject a cassette with power on or off.

To Find a Particular Scene During Playback

Press REW or FF during playback to search for a scene.

- Search speed for SP mode tapes is 7 times and SLP mode tapes is 21 times the normal speed.
- Some noise bars will appear during search.

Special Effects During Playback

These features work best in SP or SLP mode. The sound will be muted.

Slow Motion Playback

Press SLOW to start slow motion playback during playback. Press PLAY or SLOW to release.

Still (Freeze) Frame Picture

Press PAUSE to freeze and release the picture.

- To reduce picture noise, first press SLOW. Then, use CH (TRACKING) ▲▼ to clear up the picture. Now, press PAUSE.

Frame by Frame Advance

In Still mode, hold down SLOW to advance the still picture one frame at a time. Press PAUSE to release.

Features for a Quality Picture

Digital Auto Picture
This feature automatically controls the video output signal for less noise depending on the tape condition.

Digital Auto Tracking

This feature continuously analyzes the signal and adjusts for optimum picture quality.

Manual Tracking Control (to reduce picture noise)

Use during Playback and Slow Motion mode to reduce picture noise. Press CH (TRACKING) ▲▼ during playback until the picture clears up. To return to Auto Tracking mode, press POWER off and then on again.

V-Lock Control (to reduce picture jitter)

In Still mode, CH (TRACKING) ▲▼ operate as a V-Lock control. Press ▲▼ until the picture is stabilized.



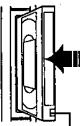
- After the VCR is in Still or Slow mode for 3 minutes, it will switch to the Stop mode automatically to protect the tape and the video head.

Record On a Tape

***Important:** If the remote control POWER, ACTION, PROG, CH▲▼, INDEX or ADD/DLT button does not work when pressed, press the VCR button on the remote and try the button again.

1 Check list before you begin.

- All connections are made. (See pages 6-9)
- VCR is plugged in.
- TV is turned on and set to the VCR channel (CH 3 or 4).



1 Insert a cassette with record tab.

- VCR power comes on automatically.

2 Press CH ▲▼ or NUMBERED keys to select a channel.

- Or, press CHANNEL ▲▼ on the VCR.
- Holding down CH ▲▼ will increase the channel search speed.
- To record from an outside source, press CH ▲▼ or INPUT to select "LINE1" or "LINE2" (see page 19).

3 Press SPEED to change the recording speed.

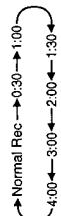
- SP = Standard Play
- LP = Long Play
- SLP = Super Long Play (See page 5.)

4 Press REC/TIME on the remote control or VCR to start recording.

- To edit out unwanted portions, press PAUSE to pause the recording in progress. To release, press PAUSE again. (After the VCR has been in Pause mode for 5 minutes, it will stop automatically to protect the tape and video head.)

One Touch Timer Recording (OTR)

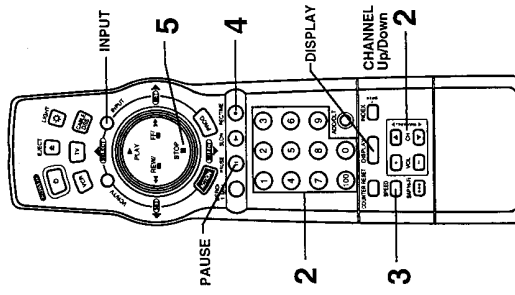
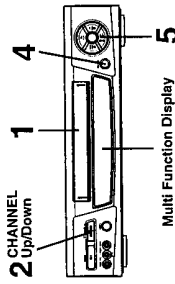
The VCR starts recording and turns itself off at a preset time. In step 4, press REC/TIME repeatedly to set the length of the recording. Each press will change the stop time as shown.



- "TIMER" lights in the Multi Function Display.
- The remaining recording time can be displayed by pressing DISPLAY in OTR mode.

5 Press STOP to stop recording.

- Or, press STOP/EJECT on the VCR.



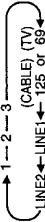
Selecting the Input Mode

Press INPUT. The display will change in the order below.



Press CH ▲▼.

The display will change in the order below.



- LINE1: For rear audio/video connection.
- LINE2: For front audio/video connection.

- When LINE is selected, "L1" or "L2" is displayed in the Multi Function Display for about 4 seconds.

Record One Program While Watching Another

- 1 Press VCR/TV while recording is in progress to turn off the VCR indicator in the Multi Function Display.
- 2 Use the TV channel controls to select a program. The VCR will continue to record your program while you watch any channel you choose.

- To switch back and forth between the recording and viewing channel, press VCR/TV.

Selecting Channels at the VCR

- 1 Turn your TV and VCR on.
 - VCR indicator lights on the Multi Function Display. If indicator doesn't light, press VCR/TV to turn it on.
- 2 Use CH ▲▼ on the remote control or VCR to select channels.
 - To switch back to TV channel selection, press VCR/TV to turn VCR indicator off, or simply turn the VCR power off.



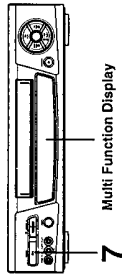
Timer Recording

Important: If the remote control POWER, ACTION, PROG, CH▲, INDEX or ADD/DLT button does not work when pressed, press the VCR button on the remote and try the button again.

You can set up the VCR to record a one time, daily, or weekly program while you are away or otherwise occupied. Up to 8 programs can be stored in memory.

Check list before you begin.

- All connectors are made.
- (See page 6-3)
- TV and VCR are plugged in and turned on.
- VCR TV selector is set to "VCR."
- Clock is set to correct time.
- Record tab in place. (See page 5.)



1 Press PROG* to display the "SET PROGRAM" screen.



2 Press ▲▼ to select "TIMER PROGRAM," and then press **▶** to display the program screen.

• If a program is already in memory, press **▲▼** and **▶** to select an unused program number.

3 Press ▲▼ and ▶ to select and set one of the following:

- 1-31 = One time recording
- DAILY = Same time MON-FRI
- WEEKLY (SUN-SAT) = Same time once a week

Example
Today's Date — 7 **SELECT ▲▼** Selection Order DAILY
WEEKLY (MON) — WEEKLY (SUN)

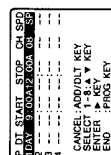
4 Press ▲▼ and ◀▶ to select and set each of the remaining items at right.

- Remaining items to be set:
- START time
 - STOP time
 - CH (channel) number, or LINE for outside source recording
 - Category (N/A not applicable), MUSIC, DRAMA, COMEDY,
 - Speed (SP, LP, SLP)

To Make Corrections
Repeatedly press **▶** to move the cursor to the right, or **◀** to move to the left to the incorrect entry and make the correction.

5 Press PROG to end the program.

• This screen appears for confirmation.



To Enter More Programs
Press **▲▼** and **▶** to select and set a blank program number, and then repeat steps 3 and 4.

6 Press PROG to exit this mode.

7 Press POWER off to set the timer.

• When recording programs via a cable box, make sure the cable box is left ON and tuned to the desired channel.



Important notes when using a DSS receiver

- When recording programs via a DSS receiver, the DSS receiver must be turned off.
- When recording programs via an antenna or cable, the DSS receiver must be turned off.

- A cassette with no record tab is ejected and "TIMER" flashes when the power is turned off to set the timer.
- If the start times of two programs overlap, the lower numbered program will be recorded and the timer recording will not be performed.
- If there is a power interruption of more than one minute, the recording will not be performed or continue.



Cancel a Timer Recording:

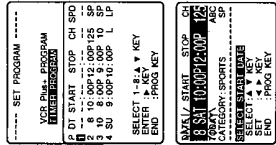
(Recording is in progress)
Press POWER and then STOP within 10 seconds to cancel the timer recording.

- The TIMER indicator goes out in the Multi Function Display.

Replace Program Contents:

(Recording is not in progress)

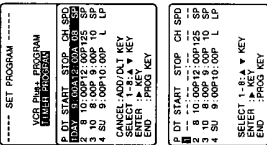
- 1 Press PROG to display the "SET PROGRAM" screen.
- 2 Press ▲▼ to select "TIMER PROGRAM," and then press **▶** to display all currently set programs.
- 3 Press ▲▼ and **▶** to select and set a program number.
- 4 Press ▲▼ and ◀▶ to select and set replacement timer information.
- 5 Press PROG twice to exit this mode.



Review or Clear Program Contents:

(Recording is not in progress)

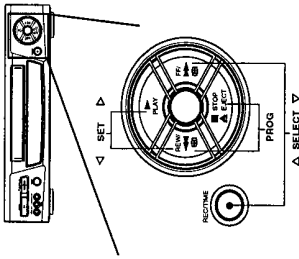
- 1 Press PROG to display the "SET PROGRAM" screen.
- 2 Press ▲▼ to select "TIMER PROGRAM," and then press **▶** to display all currently set programs.
- 3 Press ▲▼ to select a program number.
- 4 Press ADD/DLT if you want to clear the program.
- 5 Press PROG to exit this mode.



Timer Recording Using VCR Buttons

(Make sure a cassette tape is not inserted in the VCR.)

- 1 Hold down STO/EJECT and press REW to enter the Program mode.
- 2 Press FF or REC/TIME repeatedly or hold down to make selections.
- 3 Press PLAY to set the item and move on.
 - To make corrections, repeatedly press PLAY to move the cursor to the right, or REW to move to the left to the incorrect entry and make the correction.
- 4 Press STO/EJECT and REW together to display program contents after all items have been entered.
 - You cannot clear programs with the VCR buttons.
- 5 Hold down STO/EJECT and press REV, (release REW first, and then release STO/EJECT) to exit this mode.
- 6 Insert a cassette with record tab and press POWER off to set the timer.



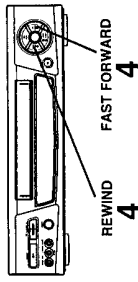


Tape Operation

*Important: If the remote control POWER, ACTION, PROG, CH▲, INDEX or ADD/DLT button does not work when pressed, press the VCR button on the remote and try the button again.

VHS Index Search System

Each time you start a recording, an invisible index mark is placed on the tape. When timer recordings are made, program index and program information (see "Time Stamp Feature" on page 28) are also included. You can then use these index marks to access or scan your recordings.

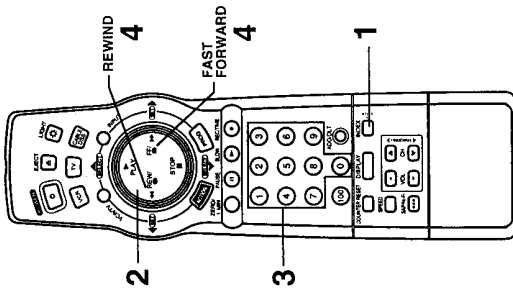


Direct Access

(For normal and/or timer recordings)

This feature allows you to go directly to the recording you want from anywhere on the tape by entering the appropriate index number.

- 1 Press INDEX* to display the "SELECT SEARCH MODE" screen.
 - * This screen appears only if there are timer recordings on the Program Index list. If this screen does not appear, go to step 3.
- 2 Press ▲ to select "INDEX SEARCH", and then press ► to display the "INDEX" screen.
- 3 Press a NUMBERED key to select the desired recording.
 - * To calculate the number, see below.
- 4 Press REW or FF to start a reverse or forward search.
 - * When the designated location is reached, the VCR goes into Playback mode.



To calculate the Index Number
Count forward or backward each recording starting point, including the recording you want to see, from wherever you are on the tape.

Example 1:
If you are watching recording 4 and you want to watch recording 2, count the start points to number 2. The total is 3. Enter 3 in step "3" and press REW.



Example 2:
If you are watching recording 2 and you want to watch recording 6, count the start points to number 6. The total is 4. Enter 4 in step "3" and press FF.

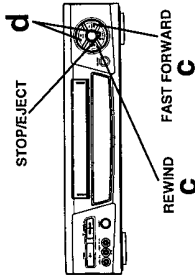


NOTE: ↓ indicates start points of each recording.

NOTES

- Make each entry within 10 seconds, or the Index Search mode will be canceled.
- Index marks will be placed for Timer recordings as well.
- If any of the VHS Index Search System are initiated extremely close to an index mark, the index mark may not be counted in the search.
- In the Program Index Search mode, this VCR can memorize a total of 8 programs in order of recording.
- If you memorize more than 8 programs, the first program will be deleted and the new program will be listed.

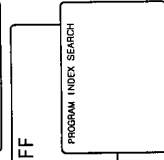
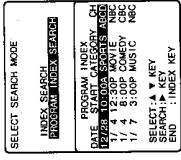
Important for Program Index Search:
Timer recordings must be recorded back to back in order for them to be placed on the Program Index list. If a timer recording is followed by a function, such as REW or PLAY, the data is lost.



Program Index Search

(For timer recordings only)
This feature allows you to choose a timer recorded program from a Program Index list and then start a search for that program. Once the tape is ejected or normal recording is started, all program Index data are deleted.

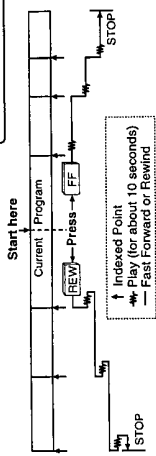
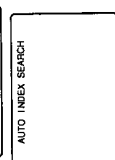
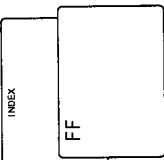
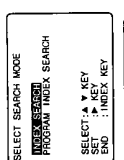
- 1 Press INDEX to display the "SELECT SEARCH MODE" screen.
- 2 Press ▲ to select "PROGRAM INDEX SEARCH" and then press ► to display the "PROGRAM INDEX" screen.
- 3 Press ▲ to select the desired recorded program, and then press ► to start the forward or rewind search.
 - * When the designated program is reached, the VCR automatically goes into Playback mode.



Index Scan

(For normal and/or timer recordings)
This feature allows you to scan (forward or reverse) each recording for 10 seconds in Playback mode.

- Press INDEX to display the "SELECT SEARCH MODE" screen.
 - * This screen appears only if there are timer recordings on the Program Index list. If this screen does not appear, go to step c.
- Press ▲ to select "INDEX SEARCH", and then press ► to display the "INDEX" screen.
- Press REW or FF to begin the scan.
 - * As each index mark is reached, a short playback will be performed after which FF or REW resumes.
- Press PLAY to cancel the scan and begin playback.
 - * You may also press STOP to stop the tape.



Special VCR Features

Check list before you begin.

- All connections are made. (See pages 6-8).
- VCR is plugged in.
- TV is turned on and set to the VCR channel (CH 3 or 4).

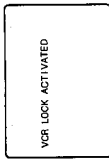


VCR Lock Feature

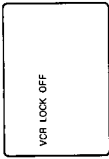
When activated, this feature prohibits all operations except for timer recording and tape eject. This feature may be used to keep young children from operating the VCR.

Hold down **REC/TIME** on the VCR without a cassette inserted for 7 seconds during Power On mode.

- **NO CASSETTE PLEASE INSERT A CASSETTE** is displayed when **REC/TIME** is pressed. Please disregard this warning and continue to hold down **REC/TIME** for 7 seconds.



To **Cancel the VCR Lock feature**, with or without a cassette inserted, hold down **REC/TIME** on the VCR for 7 seconds again while in Stop mode.

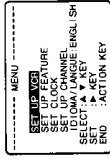


- VCR Lock mode is cancelled automatically after about 24 hours as long as the clock is set.

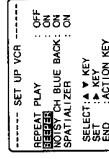
Warning Beeper Feature

When you select **BEEPER ON**, a short warning will sound each time an invalid entry or incomplete operation is made.

1 Press ACTION to display the menu.



2 Press ▲▼ to select "SET UP VCR," and then press **▶** to display the "SET UP VCR" screen.



3 Press ▲▼ to select "BEEPER," and then press **▶** to select "ON" or "OFF."

4 Press ACTION twice to exit this screen.

Tape Operation (continued)

*Important: If the remote control **POWER**, **ACTION**, **PROG**, **CH▲▼**, **INDEX** or **ADD/DLT** button does not work when pressed, press the **VCR** button on the remote and try the button again.

Repeat Play

The VCR will play your recording over and over.

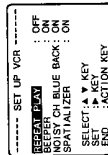
1 Press ACTION to display the menu.

2 Press ▲▼ to select "SET UP VCR," and then press **▶** to display the "SET UP VCR" screen.

3 Press ▲▼ to select "REPEAT PLAY," and then press **▶** to select "ON" or "OFF."

- When "ON" is selected, the VCR plays the tape to its end or until a blank portion of over 30 seconds is detected (erased portions are not considered blank). The tape is then rewound and played again and again until Repeat Play is turned off.

4 Press ACTION twice to return to the normal screen.

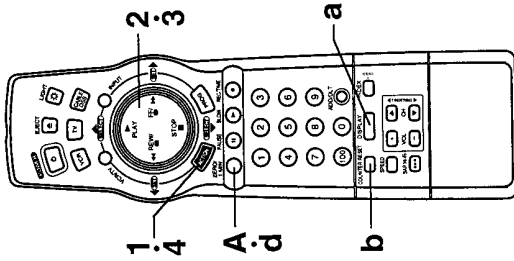


One Minute Skip

The VCR rapidly skips over one minute of tape.

A Press ZERO/1 MIN in Play mode.

- The VCR will go into FF search mode and skip over 60 seconds of recorded time. Normal playback will then resume.



Auto Operation Functions

Auto Playback

When a tape is inserted, the power turns on (Auto). If the record tab* is removed, playback begins (Auto).

Auto Rewind

When a tape reaches its end during playback, fast forward or manual record, the VCR will rewind and go into Stop mode.

Playback Auto Eject (Repeat Play is "OFF")

When a tape without a record tab* is played to its end, the VCR will rewind and then eject the tape.

Memory Rewind Off

When the **POWER** button is pressed during rewind, the VCR will turn off after rewind is complete.

* For record tab information, see page 5.

Zero Search

To quickly return to a specific tape location.

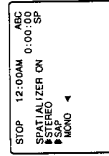
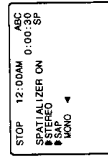
a Press DISPLAY to display the Time Counter overlay during playback.

b Press COUNTER RESET to reset the Time Counter to "0:00:00" at the desired position.

c Continue playback, rewind, or fast forward.

d Press ZERO/1 MIN in Stop mode when you want to return to "0:00:00."

- The VCR will go into FF or REW mode and stop at the last point the Time Counter was set to 0:00:00.



More You Can Do

Special VCR Features

*Important: If the remote control POWER, ACTION, PROG, CH▲▼, INDEX or ADD/DLT button does not work when pressed, press the VCR button on the remote and try the button again.

Channel Caption

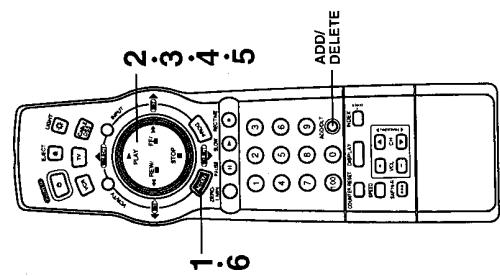
You can set channel names, i.e. ABC, CBS, so that when selected, the channel name and number appear on-screen for easy identification. You can go with preset names (up to 24), or manually create your own (up to 10). Note: You will need a list of channels received in your area and the channel numbers you receive them on.

Preset Caption

- 1 Press ACTION to display the menu.
- 2 Press ▲ to select "SET UP CHANNEL," and then press ► to display the "SET UP CHANNEL" screen.
- 3 Press ▲ to select "CHANNEL CAPTION," and then press ► to display the "CHANNEL CAPTION" screen.
- 4 Press ▲ to select "PRESET CAPTION," and then press ► to display the "PRESET CAPTION" screen.
 - You can set up to twenty-four channel captions. If you want to set a station name other than these, go to the "Manual Caption" section on next page.
- 5 Press ► to move the shaded area to the right side. Then, press ▲ to change the memorized channel number to match the caption. Next, press ◀ to set the memorized channel number. Now, press ▲ to continue. Repeat step 5 until the Caption List is complete.

To Make Corrections Press ▲ and ► to select the memorized channel number. Then, press ▲ to change, or ADD/DLT to delete the channel number.

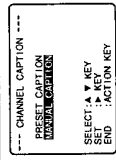
- 6 Press ACTION four times to exit this mode and return to the normal screen.



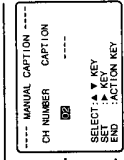
Manual Caption

- a Follow steps 1-3 in the "Preset Caption" section on page 26.

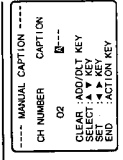
b In step 4, press ▲ to select "MANUAL CAPTION" and then press ► to display the "MANUAL CAPTION" screen.



c Press ▲ to select "CH NUMBER," and then press ► to move the shaded area to the right. Channels already set in the "Preset Caption" section and channels deleted from Channel Memory are not displayed. You can set a total of ten channel captions with up to four characters each.



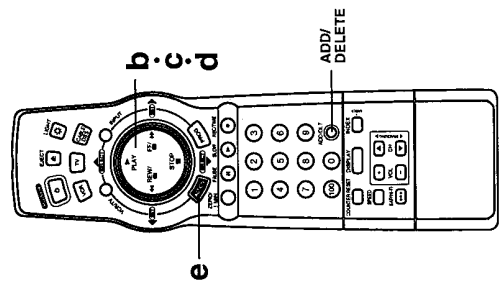
d Press ▲ to select, and then press ► to enter each character of the caption. Characters will change in the following order:



Now, press ◀ repeatedly to move the cursor back to CH NUMBER. Repeat steps 'c' and 'd' as desired.

To Make Corrections, repeatedly press ► to move the cursor to the right, or ◀ to move to the left to the incorrect entry and make the correction. To Clear the Caption, press ADD/DLT.

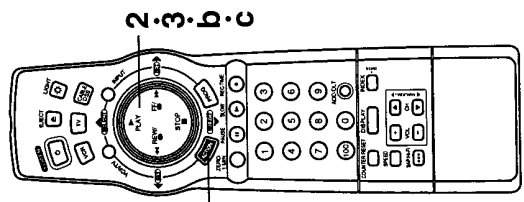
- e Press ACTION four times to exit this mode and return to the normal screen.



Special VCR Features (continued)

***Important:**
If the remote control POWER, ACTION, PROG, CH▲, INDEX or ADD/DLT button does not work when pressed, press the VCR button on the remote and try the button again.

- Check list before you begin.
- Clock is set to correct time.

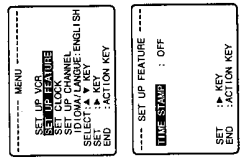


1 4 a d

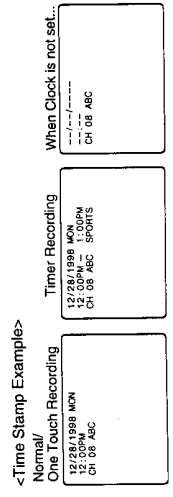
Time Stamp Feature

For about the first 10 seconds of each recording, the VCR automatically writes the following program data on the tape: Date, Start Time, Scheduled stop time (for Timer Rec. only), Channel, Noise Cancel, and Copy (for Timer Rec. only). Then, if playback is started at the starting point of the recording, this information will be displayed about 7 seconds after playback begins for a few seconds.

- 1 Press **ACTION*** to display the menu.
- 2 Press **▲** to select "SET UP FEATURE," and then press **▶** to display the "SET UP FEATURE" screen.
- 3 Press **▲** to select "TIME STAMP" and then press **▶** to select "ON" or "OFF."
 - * When "OFF" is selected, the program data is written on the tape, but will not be displayed for the first 7 seconds of playback.



4 Press ACTION twice to exit.

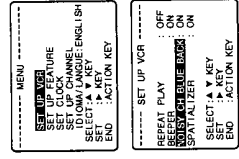


* If the tape speed is changed immediately after recording begins, the display may be incorrect.

Blue Back ON/OFF Feature

You may choose whether or not you want the VCR to display a solid blue screen when the broadcast signal is very weak or nonexistent.

- a Press **ACTION** to display the menu.
- b Press **▲** to select "SET UP VCR," and then press **▶** to display the "SET UP VCR" screen.
- c Press **▲** to select "NOISY CH BLUE BACK," and then press **▶** to select "ON" or "OFF."
 - * When "ON" is selected, a solid blue screen appears whenever the signal is nonexistent. When "OFF" is selected, the picture is displayed regardless of the signal condition.
 - * The picture can not always be seen clearly when "OFF" is selected.

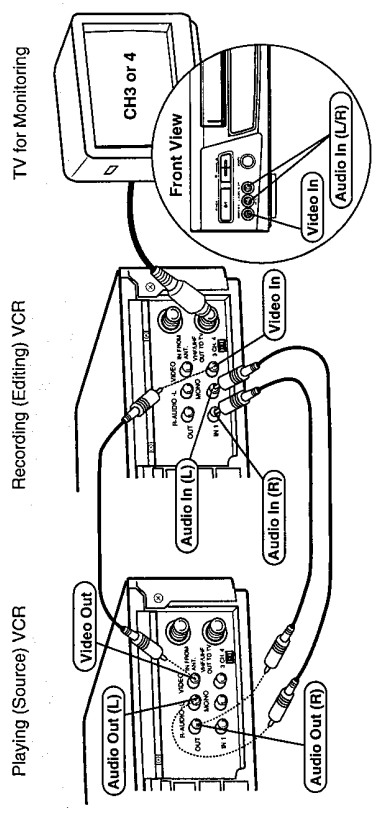


d Press ACTION twice to exit.

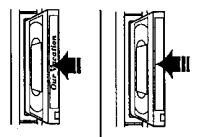
(NOTE)
When the VCR is connected to a Combination VCR which has a Blue Back feature, even if the VCR Blue Back is set to "OFF" on the VCR, the screen will go to a blue background.

Copying Your Tapes (Dubbing)

Connections you'll need to make. (Choose front or rear connection.)
• When connecting to a normal VCR, use the L Audio In jack for proper sound reproduction.



- 1 Insert a pre-recorded tape into the Playing (Source) VCR.
- 2 Insert a blank tape with record tab into the Recording (Editing) VCR.
- 3 Select "LINE" Input mode on the Recording (Editing) VCR. (See "Selecting the Input Mode" on page 19.)
- 4 Press **PLAY** on the Playing VCR. Press **PAUSE** at the desired starting point.
- 5 Press **REC** on the Recording VCR, and then press **PAUSE** immediately thereafter.
- 6 Press **PAUSE** on both VCRs at the same time, to begin copying.
- 7 Press **STOP** on both VCRs to stop copying.



To Edit Out Unwanted Parts
Press **PAUSE** on the recording VCR while copying is in progress. Press **PAUSE** again to resume copying.

To Monitor Dubbing on Your TV
1 Turn your TV on and tune to the Recording VCR channel (CH3 or CH4).
2 Set the VCR/TV Selector on the Recording VCR to "VCR."

Caution:
Unauthorized exchanging and/or copying of copyrighted recordings may be copyright infringement.

More You Can Do

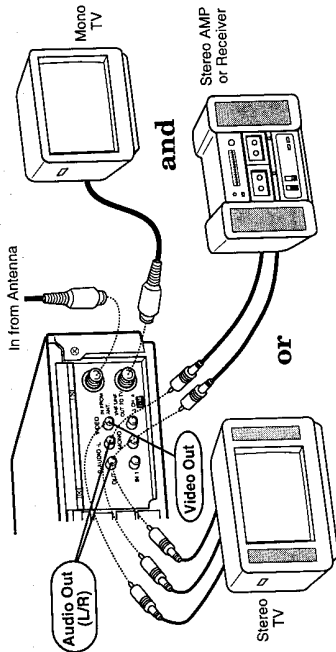
MTS Broadcast/ VHS Hi-Fi Stereo System



Check list before you begin.

- The VCR is connected to a stereo TV, or a mono TV and an external stereo amp or receiver with speakers.
- The VCR and other components are plugged in and turned on.

Connections to Make



When recording, you may monitor in stereo, by connecting the VCR to either a stereo TV, or a mono sound TV with an external stereo amp and speakers.

Receivable Broadcast Types

The following are possible audio broadcast types and on-screen displays. The signal being received is indicated with an "R" mark while the selected audio mode is indicated with an arrow.

Press **DISPLAY** to display the broadcast signal currently being received.

MTS Stereo and SAP broadcast

Multi-channel Television Sound Stereo (main language) and Secondary Audio Program (sub language) broadcasts are being received simultaneously. Select STEREO or SAP audio mode.

MTS Stereo broadcast

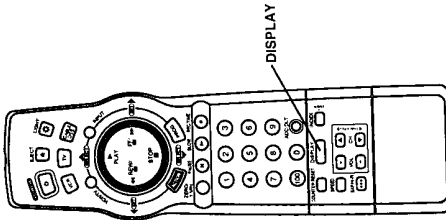
Multi-channel Television Sound Stereo broadcast. Select STEREO audio mode. If a stereo broadcast is weak and the display flickers, you may want to select the MONO audio mode for better results.

SAP broadcast

Secondary Audio Program (sub language) broadcast. Select SAP audio mode for the sub language.

MONO broadcast

Normal monaural sound broadcast.



Equipped with **dbx**™ -TV Noise Reduction for true MTS reproduction. **dbx**™ -TV Noise Reduction is required for good stereo separation and audio fidelity. **dbx**™ is a registered trademark, and is licensed by **dbx**™ Technology Licensing.

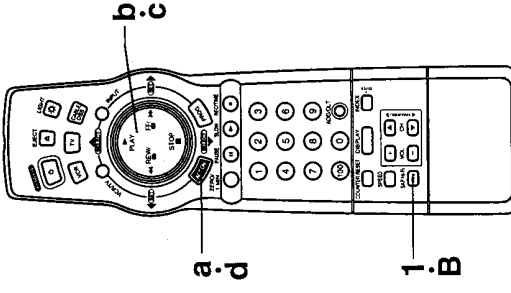
*Important:

If any of the remote control **POWER**, **ACTION**, **PROG**, **CH**, **INDEX** or **ADD/DEL** buttons do not work when pressed, press the **VCR** button on the remote and try the button again.

With the proper audio mode setting, your VCR can:

- 1) record and playback an MTS stereo broadcast (main language) in stereo Hi-Fi.
- 2) record and playback a monaural broadcast in stereo Hi-Fi.
- 3) playback non-Hi-Fi tapes in monaural.

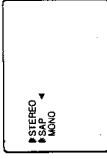
When recording, the selected broadcast sound is always recorded on the left and right Hi-Fi tracks as well as the normal monaural track. This means your tapes can be played back on Hi-Fi as well as non-Hi-Fi VCRs.



Audio Mode for Recording

- 1 Press **SAP/Hi-Fi** repeatedly (each press within 5 seconds) to select the desired audio mode (STEREO, SAP, or MONO).

- Please refer to the "Receivable Broadcast Types" section on page 30.
- The arrow indicates your selection.



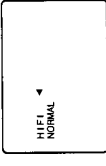
- 2 Make a recording. See the "Record On a Tape" section on page 18.

Audio Mode for Playback

- A Playback the tape. See the "Playback a Tape" section on page 17.

- B Press **SAP/Hi-Fi** repeatedly (each press within 5 seconds) to select the desired audio mode (Hi-Fi or NORMAL).

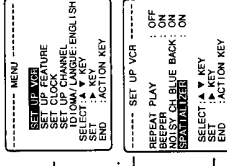
- Select "Hi-Fi" to listen to your stereo recordings with stereo sound, or "NORMAL" for monaural sound.
- The arrow indicates your selection.



Spatializer Feature

This feature allows you to enhance the stereo sound so that it seems to surround you. Note: Your VCR needs to be hooked up to a stereo TV or stereo amp/receiver with speakers (see page 30). For playback, the program must be recorded in Hi-Fi stereo. For TV viewing, programs must be broadcast in stereo.

- Press **ACTION** to display the menu.
- Press **▲** to select "SET UP VCR", and then press **▶** to display the "SET UP VCR" screen.
- Press **▲** to select "SPATIALIZER", and then press **▶** to select "ON" or "OFF."
- Press **ACTION** twice to exit this screen.



Portions of this product manufactured under a license from Desper Products, Inc. SPATIALIZER, and the circle-in-square device are trademarks owned by Desper Products, Inc.



- When purchasing or renting prerecorded tapes, remember that only those recorded in Hi-Fi stereo will play back with true stereo sound. Standard stereo tapes will play back with monaural sound.
- In order to listen to Hi-Fi stereo playback, the VCR AUDIO (L/R) jacks must be connected to a stereo TV or an external stereo amp and speakers. (See page 30.)
- When adjusting the tracking during playback, the Hi-Fi audio sound may revert to normal audio sound. This is normal.
- There may be a difference in audio level between Hi-Fi and normal audio playback.

More You Can Do

VCR Plus+ Setup

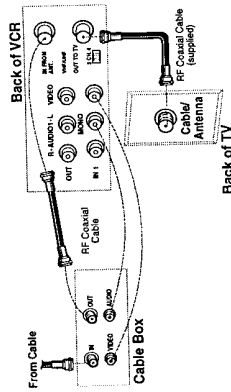
Easy Taping.

VCR Plus+ programming allows you to set most items of a timer recording by simply entering a special code (PlusCode) found in TV GUIDE magazine as well as the TV listings in selected newspapers. In order for your VCR to do a VCR Plus+ recording, or a timer recording of cable stations, some setup is required.

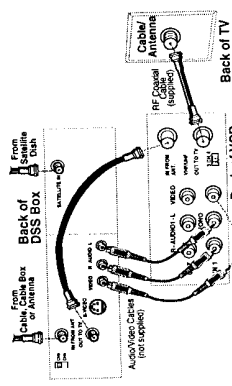
At first, choose your Connection Type.
(Then, follow the instructions under the diagram.)

Connection Type A

<CABLE BOX → VCR → TV>



Or, <ANT/CABLE BOX → DSS BOX → VCR → TV>

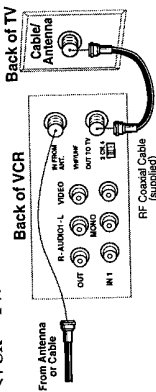


If your system connection looks like one of the diagrams above, do the following.

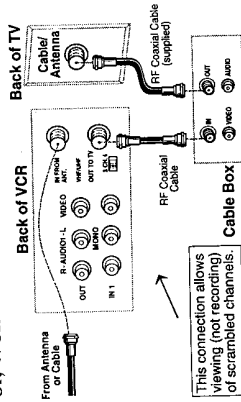
1. Complete "Cable Box Setup" on page 33.
2. Skip page 34 and go directly to page 35 for VCR Plus+ Programming.

Connection Type B

<VCR → TV>



Or, <VCR → CABLE BOX → TV>



This connection allows Video (not recording) of scrambled channels.

If your system connection looks like one of the diagrams above, do the following.

1. Skip "Cable Box Setup" on page 33 and turn to page 30.
2. Complete "VCR Plus+ Channel Setup" on page 34.
3. Turn to page 35 for VCR Plus+ Programming.

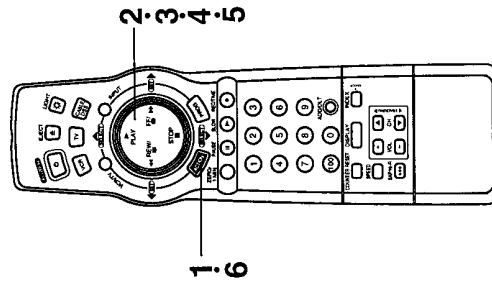
*Important: If the remote control POWER, ACTION, PROG, CH▲▼, INDEX or ADD/DLT button does not work when pressed, press the VCR button on the remote and try the button again.

If you are using a cable box and it is connected to your VCR in one of the ways shown in Connection Type A on page 32, you will need to complete the Cable Box Setup steps below.

Cable Box Setup

Complete this page only if Type A connection method (pg.32) is used.

- 1 Press ACTION* to display the menu.
- 2 Press ▲▼ to select "SET UP CHANNEL," and then press ► to display the "SET UP CHANNEL" screen.
- 3 Press ▲▼ to select "CABLE/DSS BOX SET UP," and then press ► to display the "SELECT HOOKUP" screen.
- 4 Press ▲▼ to select your hookup, and then press ► to set.
 - If you selected CABLE/DSS BOX VCR-TV, continue with step 5.
 - If not, press ACTION three times and turn to page 34.
- 5 Press ▲▼ to select your cable box or DSS receiver output channel number, and then press ► to enter.
 - If necessary, refer to your cable box manual.
 - If you are using Audio/Video jack connections to your cable box, select and set "VIDEO OUT" as the output channel.
- 6 Press ACTION twice to end the setup and return to the normal screen.



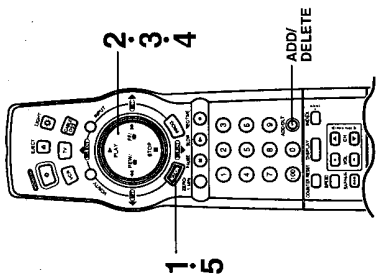
More You Can Do

VCR Plus+ and PlusCode are trademarks of Gemstar Development Corporation. The VCR Plus+ system is manufactured under license from Gemstar Development Corporation.

VCR Plus+ Setup (continued)

***Important:** If the remote control POWER, ACTION, PROG, CHAN, INDEX or ADD/DLT button does not work when pressed, press the VCR button on the remote and try the button again.

In order for the VCR to read the VCR Plus+ code, some set up is required. A Guide (VCR Plus+) channel number is assigned to each local broadcast and cable station. Because this number sometimes differs from the channel your TV receives the station on, it is necessary to program the VCR with local channel information.



VCR Plus+ Channel Setup

complete this page only if Type B connection method (pg.32) is used.

- Before you begin, complete the Channel Setup Preparations below left.
- Important Note:**
If your VCR connection type changes from type A to B, repeat steps 1-4 of page 33 and select VCR ► CABLE/ DSS BOX ► TV or VCR ► TV before proceeding with these steps.

----- MENU -----
SET UP VCR TUNER
SET CLOCK
RECALL FAVORITE CHANNELS
SELECT: ▲ KEY
END: .PROG KEY

----- SET UP CHANNEL -----
ANTENNA: CABLE
AUTO SET
CABLE/DSS BOX SET UP
VCR PLUS+ CH SET UP
SELECT: ▲ KEY
END: .PROG KEY

- 1 Press ACTION* to display the menu.
- 2 Press ▲ to select "SET UP CHANNEL," and then press ► to display the "SET UP CHANNEL" screen.
- 3 Press ▼ to select "VCR Plus+ CH SET UP," and then press ► to display the "VCR Plus+ CH SET UP" screen.

Channel Setup Preparations

- NOTE:** Complete the steps on this page if your cable box can be controlled with the VCR, or your VCR hook-up resembles "B" on page 32.
- Prepare a list like the example below. This list will help you smoothly enter the information needed in step "4," at right.
- You will need the following to complete the list:
 - The name and address of cable stations your TV receives along with the channel numbers your TV receives them on. A cable channel line-up chart is supplied by your cable company.
 - A list of Guide (VCR Plus+) channel numbers assigned to a station you receive. This list is available in TV Guide and the TV listings found in selected newspapers.

- 1 Make a chart with 3 columns like the example below. In the left column, fill in the name or call letters of the stations you receive.
- 2 In the middle column, fill in each station's assigned Guide (VCR Plus+) number found in TV Guide, newspapers, etc.
- 3 In the right column, fill in the channel number that your TV receives the station on from your channel line-up.

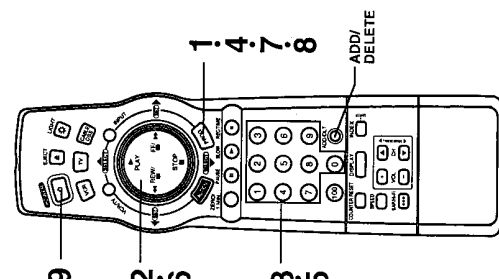
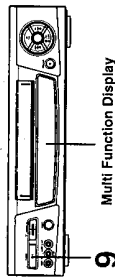
EXAMPLE ONLY

Broadcast or Cable Station Name	Assigned Guide (VCR Plus+) channel no.	Channel no. your TV receives the station on
HBO	33	15
Nickelodeon	38	20
CBS	04	04
FOX	11	

VCR Plus+ Programming

Easy Taping.

- ✓ Check list before you begin.
- The clock is set.
- VCR Plus+ Setup is complete (see pages 32-34).



- 1 Press PROG to display the "SET PROGRAM" screen.
- 2 Press ▲ to select "VCR Plus+ PROGRAM," and then press ► to display the "VCR Plus+" screen.
- 3 Press the NUMBERED keys to enter the PlusCode number.
 - Refer to your local TV listings.

- 4 Press PROG to lock in your program.
- 5 Press the 1, 2 or 3 key to select the program type.
- 6 Press ▼ and ► to select and set each of the remaining items as follows.
 - Category (N/A (not applicable), SPORTS, MOVIE, COMEDY, MUSIC, DRAMA)
 - Speed (SP, LP, SLP)

- 7 Press PROG if contents are acceptable.
- 8 Press PROG to complete the program.
 - If you're using a Cable Box, make sure that it is tuned to the desired channel and the power is left on for timer recording.

- 9 Press POWER off to set the timer.

----- SET PROGRAM -----
VCR PLUS+ PROGRAM
ENTER PLUSCODE NUMBER
USING 0-9 KEYS
END: .PROG KEY

----- VCR PLUS+ -----
ENTER PLUSCODE NUMBER
123456
USING 0-9 KEYS
BACKSPACE: ▲ KEY
ENTER: .PROG KEY

----- SET PROGRAM -----
1 ONE TIME (NON-PRG)
3 WEEKLY
DATE START STOP CH SPD
TO SELECT PUSH 1, 2, OR 3
8 SAT 10:00P 11:30P 13
TODAY
----- CATEGORY -----
SELECT: ▲ KEY
SET: ► KEY
END: .PROG KEY

----- VCR PLUS+ -----
1 ONE TIME (NON-PRG)
3 WEEKLY
DATE START STOP CH SPD
TO SELECT PUSH 1, 2, OR 3
8 SAT 10:00P 11:30P 13
TODAY
----- CATEGORY -----
SELECT: ▲ KEY
SET: ► KEY
END: .PROG KEY

----- VCR PLUS+ -----
1 ONE TIME (NON-PRG)
3 WEEKLY
DATE START STOP CH SPD
TO SELECT PUSH 1, 2, OR 3
8 SAT 10:00P 11:30P 13
TODAY
----- CATEGORY -----
SELECT: ▲ KEY
SET: ► KEY
END: .PROG KEY

Use normal Timer Recording steps if:

- the PlusCode for a program is not listed.
- you anticipate the program, such as a sporting event, to run over the scheduled stop time.

See page 21 to:

- cancel a timer recording in progress.
- replace program contents.
- review or clear program contents once set.

Important notes when using a DSS receiver:

- When recording programs via a DSS receiver, the DSS receiver must be left on.
- When recording programs via an antenna, or cable, the DSS receiver must be turned off.

NOTES

- You can obtain unlisted PlusCode numbers by calling 1 - 900 - 454 - 7587. Call costs approximately \$.95 per minute.
- VCR PlusCodes can not be used to program the VCR to record DSS channels.
- Avoid overlapping program times.
- An on-screen display will indicate if an invalid PlusCode number has been entered or when all timer programs are full.

More You Can Do

- 9 Press POWER off to set the timer.

----- TURN VCR OFF FOR TIMER RECORDING -----
LEAVE CABLE BOX POWER ON
ENTER: ► KEY
END: .PROG KEY

----- MULTI FUNCTION DISPLAY -----

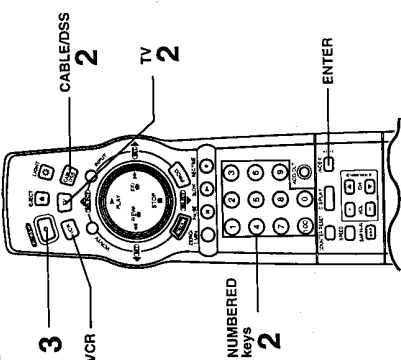


Multi-Brand Control Feature

The Remote Control may be set up to control some of the functions on your TV or Cable Box.

TV Brand Code Numbers	
Panasonic	01, 02
Chrysler	01, 03
GE	03
Zenith	04
Magnavox	05
Sylvania	05, 07, 13
Sharp	06, 07
Sony	08
Toshiba	09
Sanyo	10
Fisher	10
Magnavox/Uniden 1	11
Magnavox/Uniden 2	11
Sony	10, 11
RCA	10, 11
Panasonic	09

DSS Brand Code Numbers	
Toshiba	103
Hitachi/Hughes	104
Magnavox/Uniden 1	105
Magnavox/Uniden 2	105
Sony	106
RCA	108
Panasonic	109



Cable Box Brand Code Numbers	
Archer	01, 29, 44, 88, 91
Cableview	04, 30, 42, 44, 52, 63, 85, 88
Chizen	04, 30, 42, 44, 52, 63, 85, 88
Curtis	08, 09, 56, 61, 87, 90
Diamond	01, 29, 44, 88, 91
Drake	13, 20, 22, 26, 40, 56, 62, 78
Eastern	04, 30, 42, 44, 52, 63, 85, 88
GC Brand	04, 30, 42, 44, 52, 63, 85, 88
General Electric	04, 85
General Instruments	04, 57
Hamlin	01, 02, 03, 04, 34, 55, 83, 85, 91, 93, 95
Hitachi	14, 15, 28, 41, 97, 100, 102
Jerrold	01, 02, 03, 04, 34, 55, 83, 85, 91, 93, 95
Macom	31, 79
Magnavox	15, 25, 40
Matsushita	16, 1, 25, 40
Movietime	29, 32, 38, 39, 40, 42, 44, 88
NSC	29, 32, 38, 39, 40, 42, 38, 40
Pakasonic	10, 11, 46, 99
Philips	16, 17, 101
Pioneer	13, 20, 23, 24, 96
Pulsar	05, 06, 78
Radio Shack	04, 30, 42, 44, 52, 63, 85, 88
RCA	44
Realistic	16, 17, 101
Regal	44, 51, 88
Regency	14, 28
Rembrand	29, 32, 38, 42, 44, 88
Satara	32, 40, 42, 78, 94
Scientific Atlanta	08, 09, 56, 61, 87, 90
Sherritech	27
SL Marx	32, 40, 42, 78, 94
Spencer	16, 17, 101
Stargate	04, 30, 32, 40, 42, 44, 52, 63, 78, 85, 88, 94
Sylvania	19
Teknika	77, 95
Telescopion	77, 95
Televue	32, 40, 42, 78, 94
Texscan	32, 40, 42, 78, 94
Tocoin	01, 33, 34, 42, 48, 49, 91
Tristar	36
United Satellite	65, 69
Unika	01, 29, 44, 88, 91
Universal	42, 43, 44, 52, 63, 88
Viewstar	13, 20, 22, 26, 40, 56, 62, 88
Vid Tech	07, 23, 50
Vidter	64
Zenith	07, 23, 50

Using the Multi-Brand Control

Once the remote control has been properly set up, you can select VCR, TV, or CABLE/DSS mode depending on which functions you wish to control.
Press VCR or TV or CABLE/DSS on the remote control to select the desired mode.
(See below for the controllable functions of each mode.)

NOTE:
In TV or CABLE/DSS mode, it may be necessary to press ENTER after pressing NUMBERED keys for channel selection.

VCR Mode

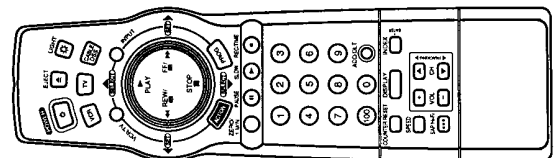
In VCR mode, the following buttons are available.
VCR
All function buttons.
TV
VOL UP/DOWN

TV Mode

In TV mode, the following buttons are available.
TV
POWER, INPUT, NUMBERED keys, ENTER, CH UP/DOWN, VOL UP/DOWN
VCR
EJECT, LIGHT, VCR/TV, PLAY, STOP, FF, REW, PAUSE, ZERO/1 MIN, SLOW, REC, SAP/HI-FI, SPEED, COUNTER RESET, DISPLAY

CABLE/DSS Mode

In CABLE/DSS mode, the following buttons are available.
CABLE/DSS
POWER, NUMBERED keys, ENTER, CH UP/DOWN
TV
VOL UP/DOWN
VCR
EJECT, LIGHT, VCR/TV, PLAY, STOP, FF, REW, PAUSE, ZERO/1 MIN, SLOW, REC, SAP/HI-FI, SPEED, COUNTER RESET, DISPLAY



Multi-Brand Control Setup

- 1 Find your TV or Cable Box or DSS Box Brand Code Number from one of the charts on this page.
- 2 Hold down TV or CABLE/DSS. Use the NUMBERED keys to enter your TV or Cable Box Brand code number.
• For code numbers 100 or greater, first press the 100 key. Then, enter the remaining digit. E.g. for 102, press 100, then press 2.
- 3 To confirm that the correct code was entered, press POWER to turn your TV or Cable Box or DSS Box On/Off.

4 Try each of the functions listed on page 37.

- Due to changes in infra-red commands used by some manufacturers, more than one code may be listed for some TV or Cable Box brands. If your TV or Cable Box does not respond to the first code, please try entering the next code.

• Please repeat the TV/Cable Box Set Up procedure when you replace the remote's batteries.
• The remote control is designed to control the brands listed. However, it will not operate all TVs, Cable Boxes or DSS Boxes made by these manufacturers. If you get no results, your particular product brand cannot be controlled by this remote control.

More You Can Do

- NOTES**
- Some TV, Cable Box and DSS Box brands require you to turn on the power manually.
 - Not all functions listed may be controlled by this remote control.

Memo

Before Requesting Service

Check the following points once again if you are having trouble with your VCR.



<p>Power</p> <p>No power...</p>	<p>Correction</p> <ul style="list-style-type: none"> • Completely insert the Power Plug into an AC outlet. • Set the POWER button to ON.
<p>Recording & Playback</p> <p>TV program cannot be recorded...</p>	<p>Correction</p> <ul style="list-style-type: none"> • Check connections between VCR, external antennas, and your TV. • Make sure your antenna system (CABLE or TV or EUROPE) is correctly set. (To Change Antenna System and Replace Channels in Memory (P.15)) • Make sure that the record tab is intact on the cassette. (P.5)
<p>Timer recording cannot be performed...</p>	<ul style="list-style-type: none"> • Set the recording start/stop times correctly. (P.20) • Make sure that the POWER button is set to OFF. (P.20) • Timer recording may not be performed or continued if a power interruption of more than 1 minute occurs before, or during, a Timer Recording, even after power is restored.
<p>There is no playback picture, or the playback picture is noisy or contains streaks...</p>	<ul style="list-style-type: none"> • Select channel 3 or 4 on the TV to match the Channel 3/4 switch located on the rear panel of the VCR. (P.6) • Set the VCR/TV selector to "VCR". • Check that channel 3 or 4 of the TV is properly tuned in. • Adjust the TRACKING control in either direction. (P.17)
<p>Special effects playback picture may contain some vertical jitter when using a TV with an Automatic Vertical Hold Control...</p> <p>VCR cannot be controlled...</p>	<ul style="list-style-type: none"> • Set the TV's Vertical Hold Control to "MANUAL" and then adjust it. • Make sure that VCR LOCK is set to off. (P.25)
<p>Remote Control</p> <p>VCR cannot be remote controlled...</p>	<p>Correction</p> <ul style="list-style-type: none"> • Aim the Remote Control directly at the remote sensor on the VCR. (P.10) • Avoid all obstacles which may interfere with the signal path. • Inspect the remote batteries for possible replacement. (P.4) • Make sure that VCR LOCK is set to off. (P.25) • Exposing the VCR remote sensor to direct fluorescent or outdoor light may cause signal interference. • Press the VCR button to select VCR mode. (P.37)
<p>ACTION and PROG buttons cannot be used...</p>	<p>Correction</p> <ul style="list-style-type: none"> • Set the VCR/TV selector to "TV." (P.19) • Insert the cassette with window side up; record tab facing you. • Completely insert the Power Plug into an AC wall outlet. • Make sure the record tab is intact on the cassette. (P.5)
<p>Miscellaneous</p> <p>Programs cannot be viewed on TV...</p> <p>Video cassette cannot be inserted...</p> <p>Video cassette cannot be removed...</p> <p>Video cassette ejects when a recording is started or the power is turned off for timer recording...</p> <p>In Stop mode, the motor (CYLINDER) continues to rotate...</p> <p>The top of the playback picture waves back and forth excessively...</p>	<ul style="list-style-type: none"> • To enable the quick play mechanism, the cylinder will rotate for about 5 minutes. This reduces response time from Stop to Play mode from Play to Rewind/Search mode. • Because the VCR playback signal is not as stable as an off-the-air TV signal, the top of your TV screen may be bent or unstable during playback. Slowly turn the horizontal hold control on your TV to correct the wavy picture. If your TV does not have a horizontal hold control or adjusting the control does not help, please contact your local TV service center.