VR653HF

USER'S GUIDE

VIDEO CASSETTE RECORDER

Important Information

WARNING

To reduce the risk of fire or shock hazard, do not expose this VCR to rain or moisture.

WARNING

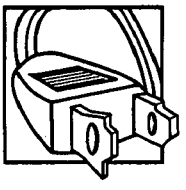
RISK OF ELECTRIC SHOCK DO NOT OPEN

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

This symbol indicates "dangerous voltage" inside the product that presents a risk of electric shock or personal injury.

This symbol indicates important instructions accompanying the product.

Cautions



CAUTION: To reduce the risk of electric shock, match wide blade of plug to wide slot, fully insert.

ATTENTION: Pour éviter les chocs électriques, introduire la lame la plus large de la fiche dans la borne correspondante de la prise et pousser jusqú au fond.

For U.S.A. — Operate VCR only on 120 volts, 60Hz AC power (normal house power).

FCC Regulations state that unauthorized changes or modifications to this equipment may void the user's authority to operate it.

Note To Cable TV Installer

This reminder is provided to call your attention to Article 820-40 of the National Electrical Code (Section 54 of the Canadian Electrical Code, Part 1) which 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.

Product Registration

Please fill out the product registration card and return it immediately. Returning this card allows us to contact you if needed.

Keep your sales receipt to obtain warranty parts and service and for proof of purchase. Attach it here and record the serial and model numbers in case you need them. The numbers are located on the back of the VCR.

Model No. VR653HF

Serial No. _____

Purchase Date: _____

Dealer/Address/Phone: _____

_____

_____

Table of Contents

Important Information

Warnings ____ i
Cautions ____ i
Note to Cable TV Installer ____ i
Product Registration ____ i

Hooking Up the VCR

Choosing a Hookup ____ 2
Antenna or Cable System Without a Cable Box ____ 3
Cable System With Cable Box to Unscramble All Channels ____ 4
Cable System With Cable Box to Unscramble Pay Channels ____ 5
Satellite Receiver ____ 6-7
Connecting Two VCRs for Copying Tapes ____ 8

Setting Up the VCR

Startup
- Check Accessories With VCR ____ 9
- Attach Power Cord to Back of VCR ____ 9
- Insert Batteries in Remote ____ 9
- Turn on the TV ____ 10
- Use the On-Screen Menu System ____ 10
- Turn on the VCR ____ 10
- Use SETUP Menu to Auto Channel Search and Auto Clock Set ____ 11
- Manual Clock Set ____ 12
- Setup VCR Plus+ Channels ____ 12
- Program VCR for VCR1 or VCR2•DVD Button ____ 12
- Add or Remove Channels from VCR's Memory ____ 13
- Auto Channel Search Using the CHANNELS Menu ____ 13
- Select the Language/Choisissez une Langue ____ 14
- Use TV•VCR Button ____ 14
- Set the Auto TV/VCR Feature ____ 15

Using the Remote Control

Component, VCR, TV, Cable Box, and Satellite Receiver Buttons ____ 16-17
Using the VCR2•DVD Button
- Controlling a VCR ____ 18
- Controlling a LaserDisc Player or DVD Component ____ 18

Controlling a TV ____ 19
Controlling a Cable Box or Satellite Receiver ____ 20
Controlling an Auxiliary RCA Component ____ 21

Playing a Tape

Operating Instructions ____ 22
Using the Playback Features
- Tape Playback: HI-FI/LINEAR/MIX Feature ____ 23
- Auto Play Feature ____ 23
- Pause for Stop-Action ____ 24
- Slow Motion ____ 24
- Automatic Tracking ____ 24
- Manual Tracking ____ 24
- Picture Search ____ 25
- Variable Speed Picture Search and Frame Advance Using JOG SHUTTLE and Arrow Buttons on Remote ____ 25
- Index Search ____ 26
- Go-To Search ____ 27
- Blank Search ____ 27
- DISPLAY Button ____ 28
- Program Information ____ 29
- Time Counter ____ 29

COMMERCIAL▸▸ADVANCE™ Feature

Recording and Playback ____ 30-31

Recording a Program

Types of Recordings ____ 32
Using the Recording Features
- Recording Speeds ____ 32
- Recording Pause ____ 32

Basic Recording – Operating Instructions ____ 33
Watch a TV Channel While VCR is Recording a Different Channel ____ 33
Recording While You're Away
- VCR Plus+ Recording ____ 34-36
- Timer Recording ____ 37
- Check, Edit, or Clear a VCR Plus+ or Timer Recording ____ 38
- Timer Recording From the VCR's Line Input ____ 38

Express Recording (XPR) ____ 39
Recording Broadcast Stereo TV or SAP ____ 40
Recording Audio Only ____ 41
Using Two VCRs for Copying and Editing Tapes ____ 42
Using Dual Remote with AutoEdit ____ 42

References

Location of Controls
- Front Panel ____ 43
- Back Panel ____ 44
- Display Panel ____ 44-45

Specifications ____ 46
Cleaning the VCR ____ 46
Limited Warranty ____ 47
Trouble Checks ____ 48-50
Questions and Answers About COMMERCIAL▸▸ADVANCE™ ____ 51
Index ____ 52-53

Choosing a Hookup

The hookups on pages 3 through 7 are divided into two hookup types: Basic (A) and Advanced (B and C).

The basic hookups show the backs of TVs that have only an antenna/cable connection. It is the easier of the two and additional accessories may not be needed.

The advanced hookups show the VCR hooked up to a monitor/receiver (TV with audio and video jacks). This connection may improve the picture quality as well as convenience of operation.

Answer the questions to choose the hookup for your VCR.

1. How do you receive your TV signals?

Choose one answer from below.

A. Outside antenna – Turn to page 3.

B. Rabbit ears (set-top) and/or bow tie antenna – Turn to page 3.

C. Cable System – Go to question 2.

D. Satellite System and another source (A, B, C) – Go to question 3.

2. What type of Cable-TV system* do you have?

Choose one answer from below.

A. Cable without a box – Turn to page 3.

B. Cable box to unscramble all the channels – Turn to page 4.

C: Cable box to unscramble only pay channels, such as HBO, Showtime, Cinemax, etc. – Turn to page 5.

*You may need to contact your local cable company for assistance.

3. What type of satellite system do you have?

Choose one answer from below.

A. Satellite receiver connected to TV without audio/video inputs – Turn to page 6.

B. Basic satellite receiver connected to TV with audio/video inputs – Turn to page 7.

C. Deluxe satellite receiver connected to TV with audio/video inputs – Turn to page 7.

Optional Hookups

How to hook up two VCRs for copying tapes?

A. Select a hookup by answering the questions above.

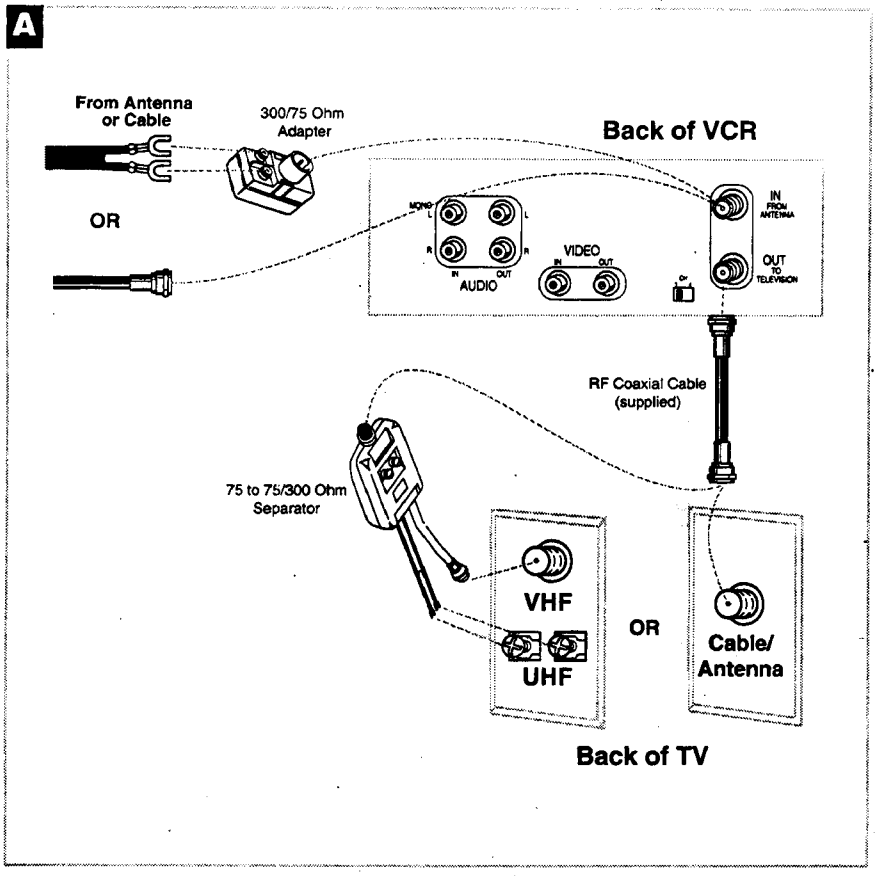
B. Then modify the connections as shown on page 8.

Antenna or Cable System Without a Cable Box

A. Basic hookup.

Use this hookup for a simple connection which requires fewer accessories.

1. **Set the CH3 CH4 switch on back of VCR to either channel 3 or 4.**
   You will tune the TV to this channel and use the TV•VCR button to watch the VCR.
2. **Connect as shown.**
   This connection may require additional accessories not provided.
3. **Plug in power cords of VCR and TV.**
4. Continue to page 9.

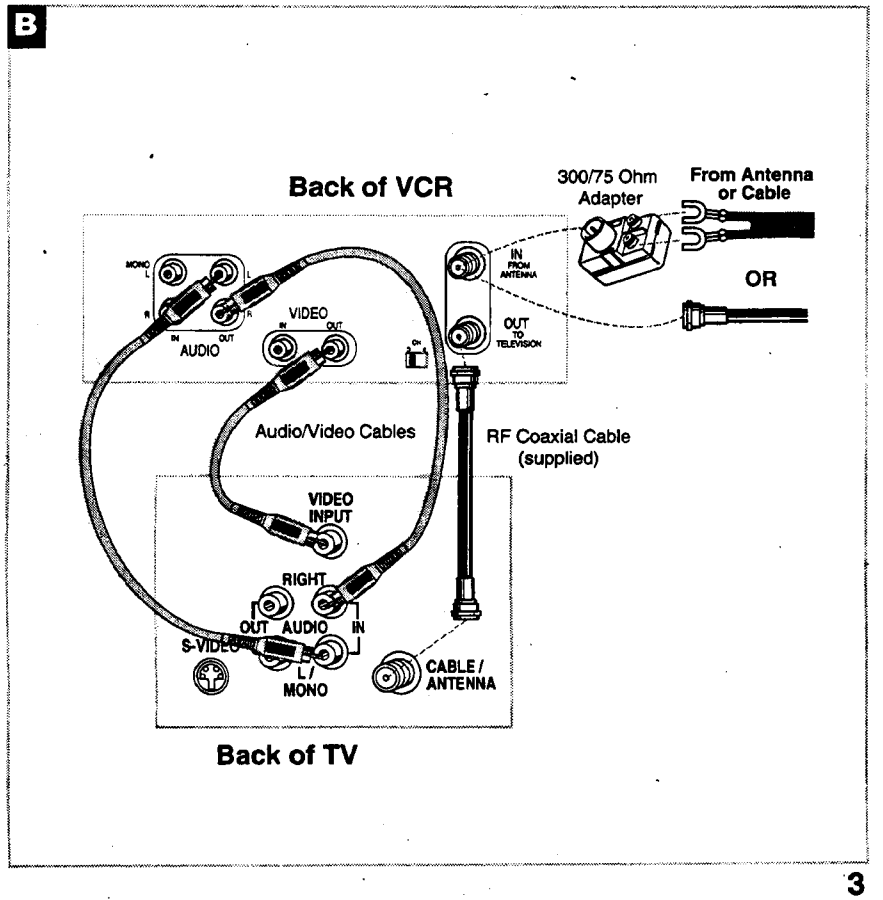


B. Advanced hookup.

Use this hookup for slightly improved picture quality, hi-fi stereo sound, and more convenient operation — use of TV•VCR button not required.

1. **Connect as shown.**
   This connection requires additional accessories not provided.
   If your TV is not stereo, you may need a Y-adapter to hear sound from both left and right channels.
2. **Plug in power cords of VCR and TV.**
3. Continue to page 9.

   You will tune the TV to its video input to watch the VCR.
   Set the Auto TV/VCR feature to OFF. *See page 15.*

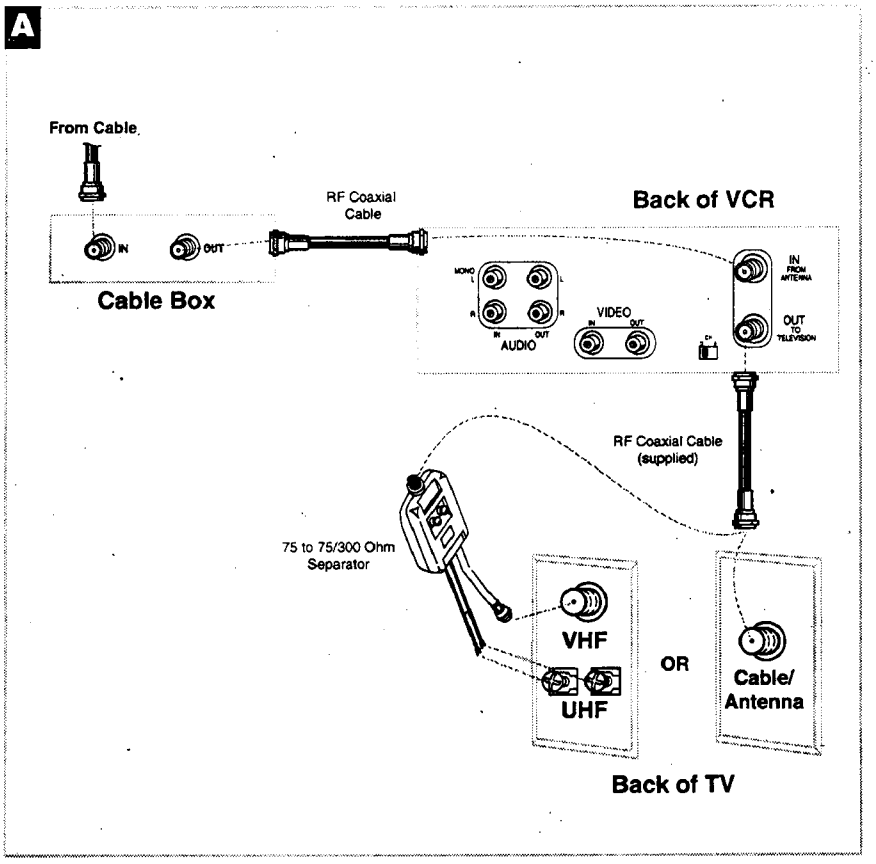


Cable System With Cable Box to Unscramble All Channels

A. Basic hookup.

Use this hookup for a simple connection which requires fewer accessories.

1. **Set the CH3 CH4 switch on back of VCR to either channel 3 or 4.**
   You will tune the TV to this channel and use the TV•VCR button to watch the VCR.
2. **Connect as shown.**
   This connection may require additional accessories not provided.
3. **Plug in power cords of VCR, TV, and cable box.**
4. Continue to page 9.

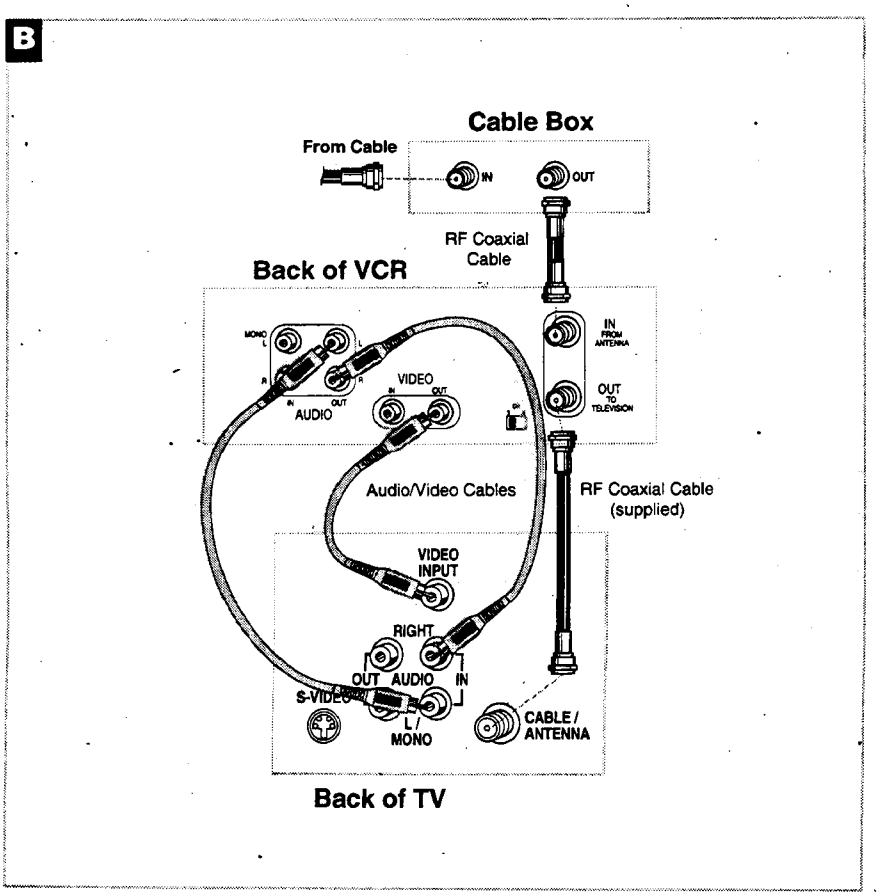


B. Advanced hookup.

Use this hookup for slightly improved picture quality, hi-fi stereo sound, and more convenient operation — use of TV•VCR button not required.

1. **Connect as shown.**
   This connection requires additional accessories not provided.
   If your TV is not stereo, you may need a Y-adapter to hear sound from both left and right channels.
2. **Plug in power cords of VCR, TV, and cable box.**
3. Continue to page 9.

   You will tune the TV to its video input to watch the VCR.
   Set the Auto TV/VCR feature to OFF. *See page 15.*



Caution: The unauthorized recording of satellite broadcasts, television programs, or other materials may infringe the rights of others.

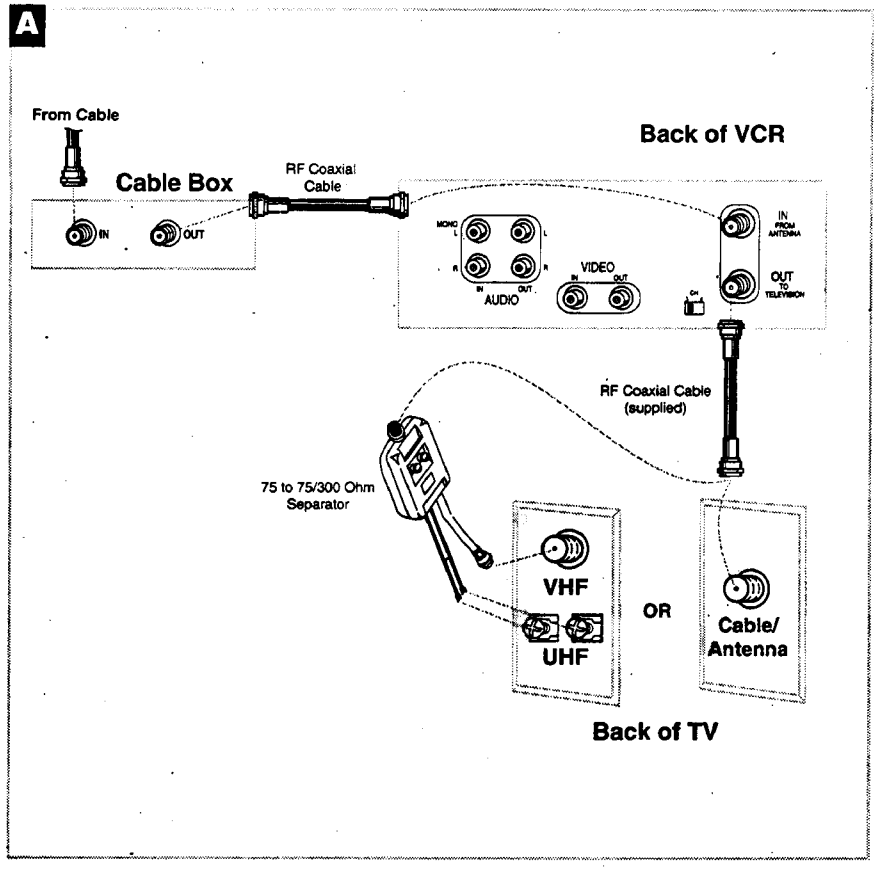
Cable System With Cable Box to Unscramble Pay Channels Only

(such as HBO, Showtime, Pay-Per-View, etc.)

A. Basic hookup.

Use this hookup for a simple connection which requires fewer accessories.

1. **Set the CH3 CH4 switch on back of VCR to either channel 3 or 4.**
   You will tune the TV to this channel and use the TV•VCR button to watch the VCR.
2. **Connect as shown.**
   This connection may require additional accessories not provided.
3. **Plug in power cords of VCR, TV, and cable box.**
4. Continue to page 9.

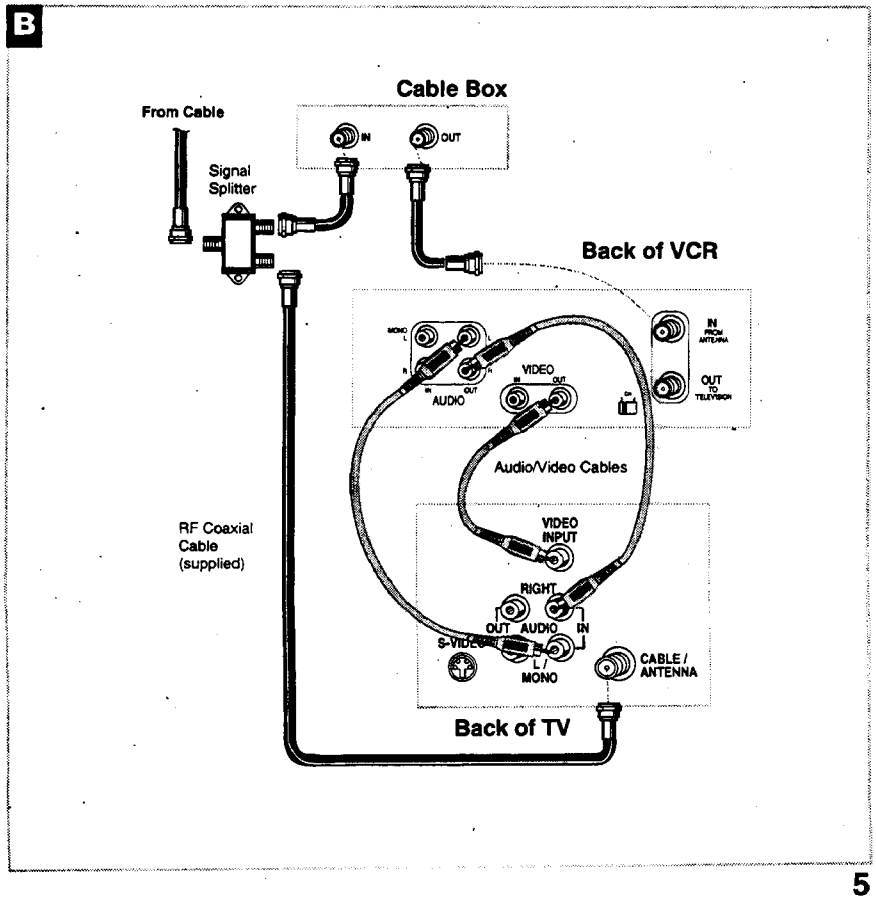


B. Advanced hookup.

Use this hookup for slightly improved picture quality, hi-fi stereo sound, and more convenient operation — use of TV•VCR button not required.

1. **Connect as shown.**
   This connection requires additional accessories not provided.
   If your TV is not stereo, you may need a Y-adapter to hear sound from both left and right channels.
2. **Plug in power cords of VCR, TV, and cable box.**
3. Continue to page 9.

   Set the Auto TV/VCR feature to OFF. *See page 15.*
   You will tune the TV to its video input to watch the VCR. All pay channels are viewed through the VCR.



Satellite Receiver

Position Satellite Receiver

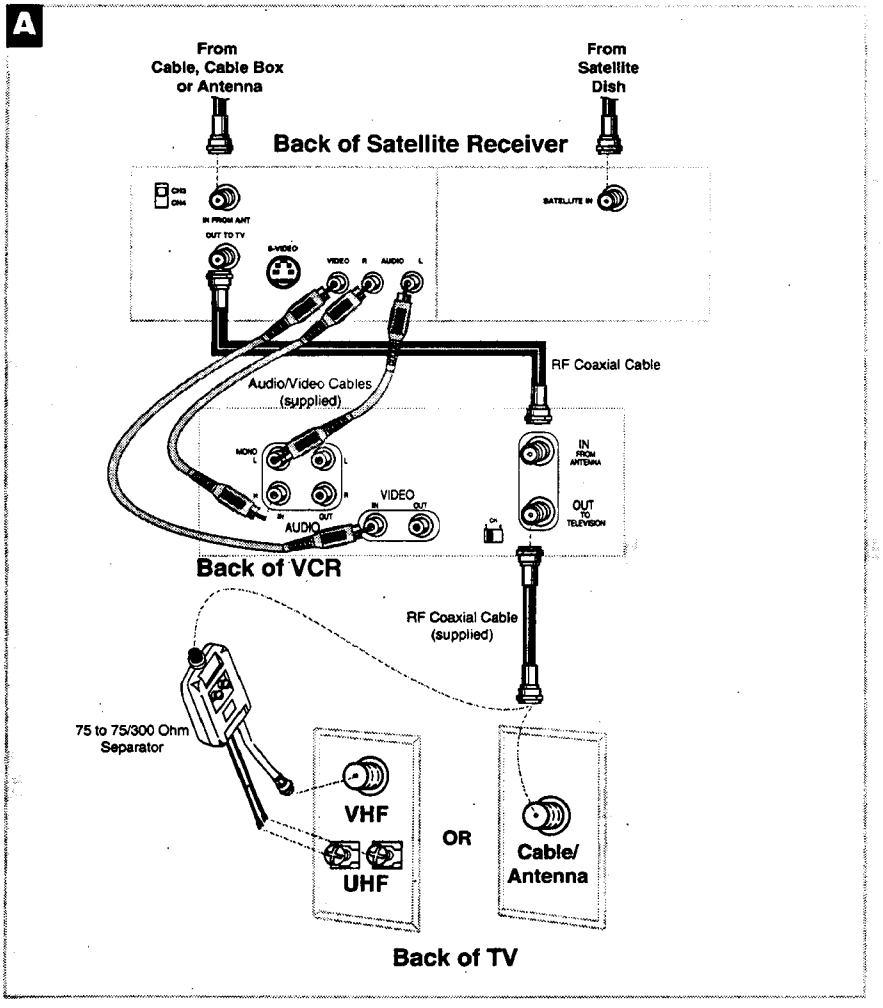
Do not stack electronic components or other objects on top of the receiver. The slots on top of the receiver must be left uncovered to allow proper airflow to the unit. Blocking the airflow to the unit could impair performance or damage your receiver and other components. Also, do not stack the receiver on top of a "hot component" such as an audio power amplifier.

A. Basic hookup.

Use this hookup if your TV does not have audio/video jacks.

1. **Set the CH3 CH4 switch on back of satellite receiver to either channel 3 or 4.**
   You will tune the VCR to this channel or its line (audio/video) input to record from the receiver. To watch the satellite receiver, turn off the VCR. If you want to watch or record the signal from your antenna, cable, or cable box, make sure the satellite receiver is turned off.
2. **Set the CH3 CH4 switch on back of VCR to either channel 3 or 4.**
   You will tune the TV to this channel and use the TV•VCR button to watch the VCR.
3. **Connect as shown.**
   This connection may require additional accessories not provided.
4. **Plug in power cords of VCR, TV, and receiver.**
5. Continue to page 9.

Caution: The unauthorized recording of satellite broadcasts, television programs, or other materials may infringe the rights of others.

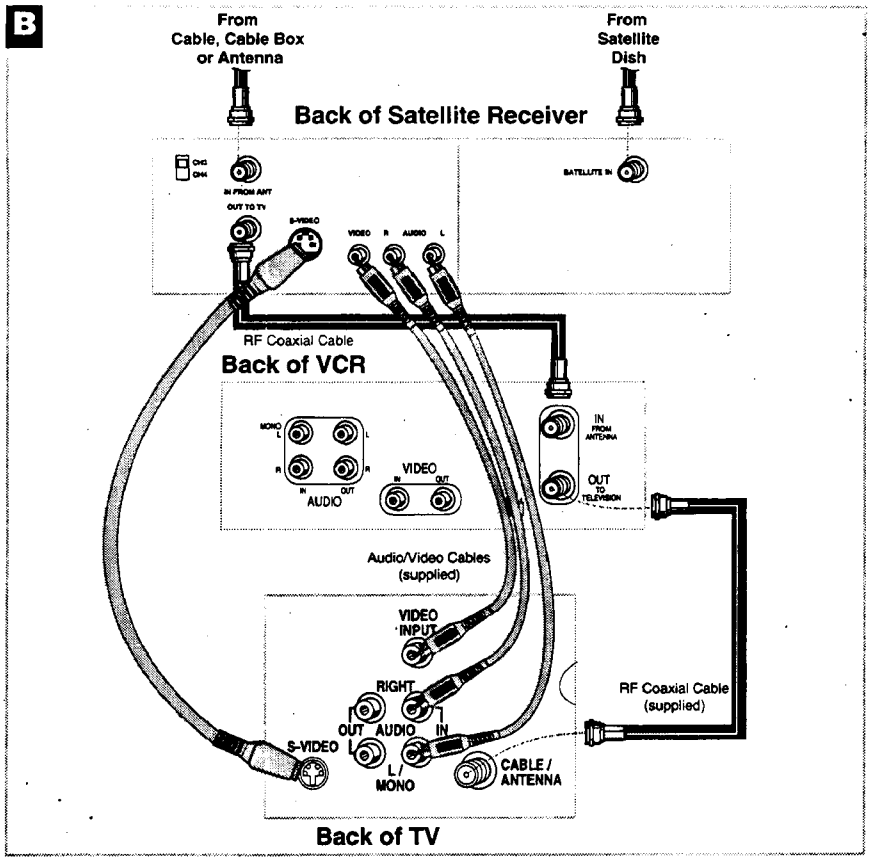


Satellite Receiver

B. Advanced hookup with basic receiver.

Use this hookup if your TV has audio/video jacks and your receiver has one set of AUDIO/VIDEO jacks.

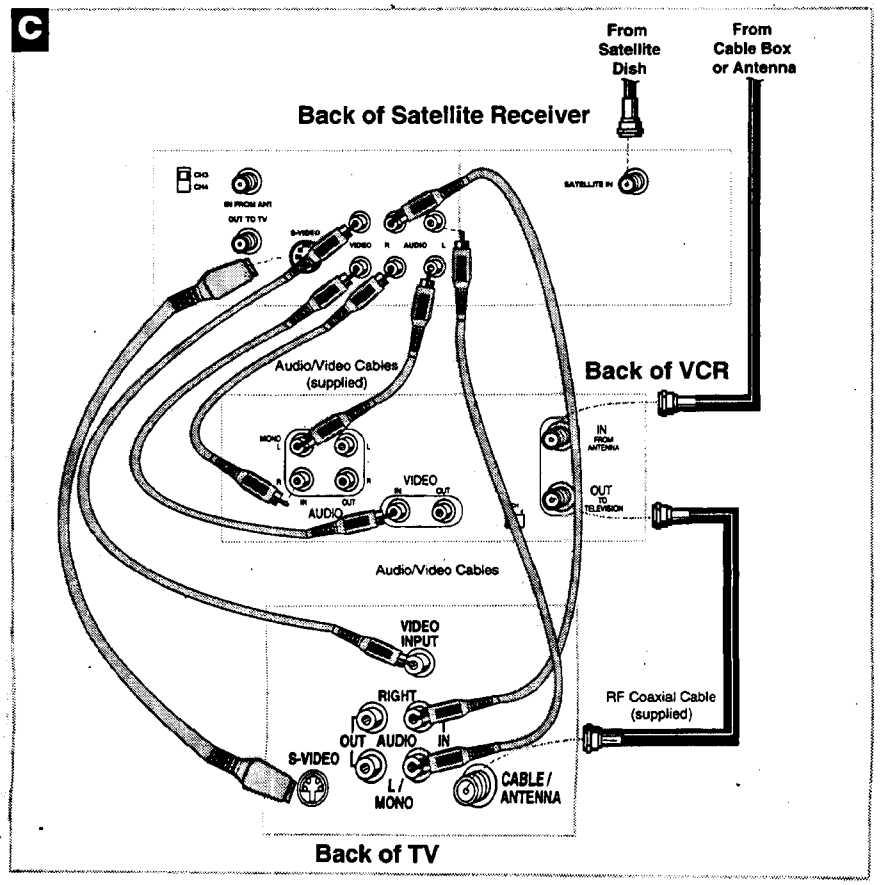
1. **Set the CH3 CH4 switch on back of receiver to either channel 3 or 4.**
   You will tune the VCR to this channel to record from the satellite receiver.
   To watch the satellite receiver, tune your TV to its video input channel.
   If you want to watch or record the signal from your antenna, cable, or cable box, make sure the satellite receiver is turned off.
2. **Set the CH3 CH4 switch on back of VCR to either channel 3 or 4.**
   You will tune the TV to this channel and use the TV•VCR button to watch the VCR.
3. **Connect as shown.**
   This connection may require additional accessories not provided.
4. **Plug in power cords of VCR, TV, and receiver.**
5. Continue to page 9.



C. Advanced hookup with deluxe receiver.

Use this hookup if your TV has audio/video jacks and your receiver has two sets of AUDIO/VIDEO jacks.

1. **Set the CH3 CH4 switch on back of VCR to either channel 3 or 4.**
   You will tune the TV to this channel and use the TV•VCR button to watch the VCR.
   To record from the satellite receiver, you will tune the VCR to its line (audio/video) input.
   To watch the satellite receiver, tune your TV to its video input channel.
2. **Connect as shown.**
   This connection may require additional accessories not provided.
3. **Plug in power cords of VCR, TV, and receiver.**
4. Continue to page 9.



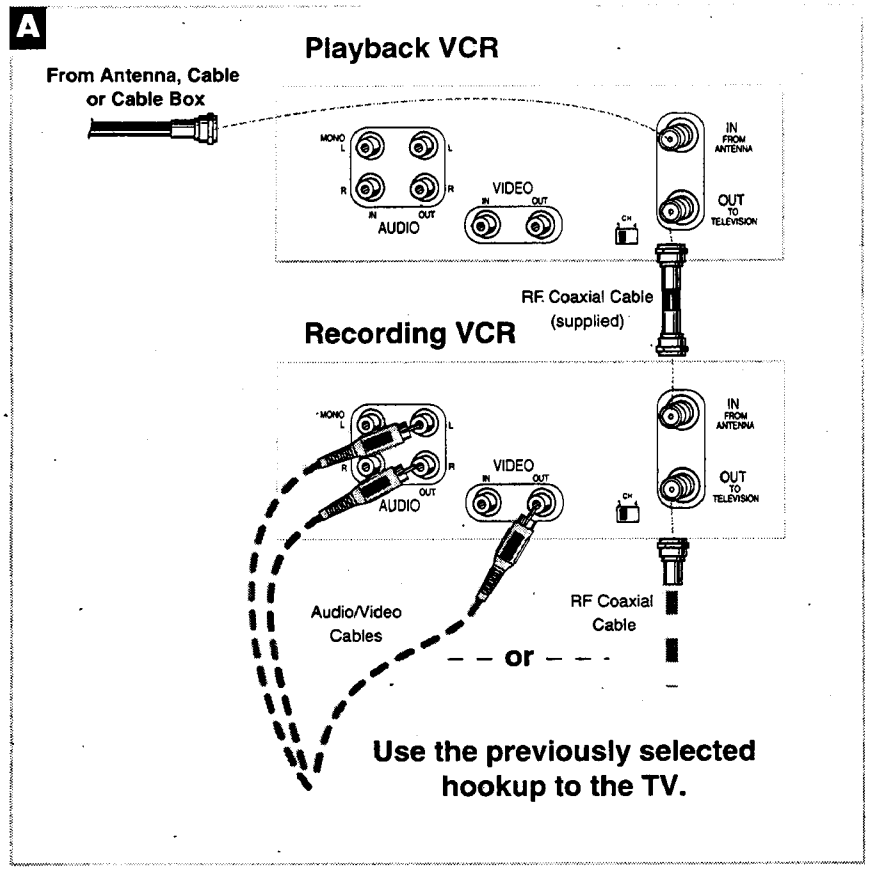
Caution: The unauthorized recording of satellite broadcasts, television programs, or other materials may infringe the rights of others.

Connecting Two VCRs for Copying Tapes

Option A hookup.

Use this hookup for a simple connection which requires fewer accessories.

1. **Select a hookup from pages 2 through 7 and then modify with this connection.**
2. **Set the CH3 CH4 switch on the playback VCR to either channel 3 or 4.**
   You will tune the recording VCR to this channel to receive the signal from the playback VCR.
3. **Connect as shown.**
   This connection may require additional accessories not provided.
4. **Plug in power cords of VCRs and TV.**
5. Continue to page 9.

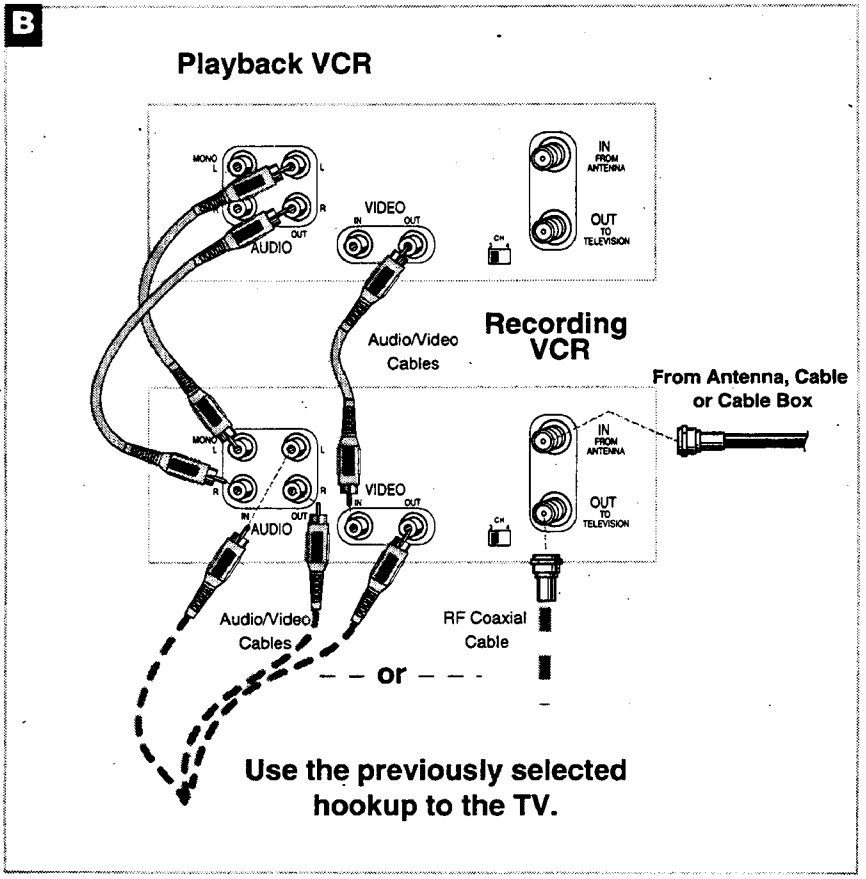


Option B hookup.

Use this hookup for slightly improved copy quality, hi-fi stereo sound, and more convenient operation — use of TV•VCR button not required.

1. **Select a hookup from pages 2 through 7 and then modify with this connection.**
2. **Connect as shown.**
   This connection requires additional accessories not provided.
   If your other VCR is not stereo, plug it into the AUDIO L (MONO) jack of this VCR to hear sound from both left and right channels.
3. **Plug in power cords of VCRs and TV.**
4. Continue to page 9.

   You will select the line (audio/video) input on the recording VCR to receive the signal from the playback VCR.

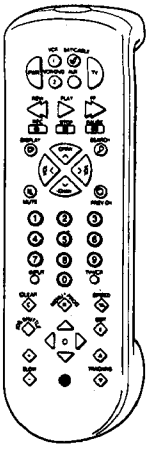


Caution: The unauthorized recording of satellite broadcasts, television programs, or other materials may infringe the rights of others.

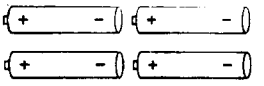
Startup

1. Check accessories with VCR.

Contact your dealer if any items are missing.



Remote
(Stock No. 231546)

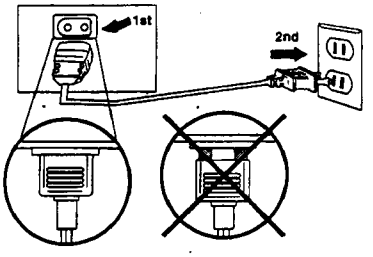


4 "AAA" Batteries

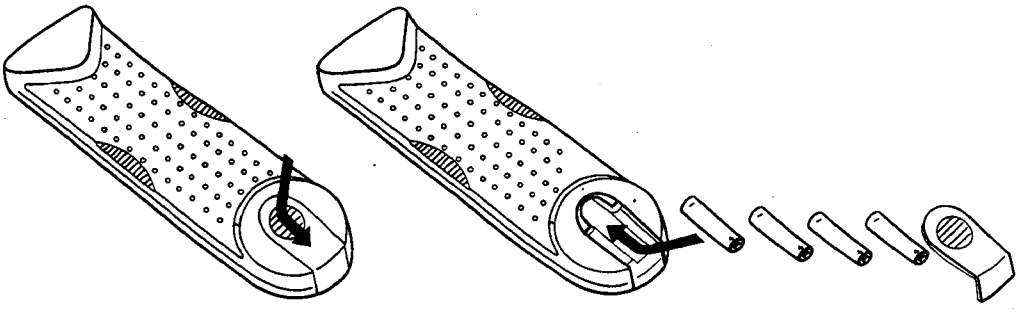
Power Cord
(Stock No. 218104)

RF Coaxial Cable
(Stock No. 221396)

2. Attach power cord to back of VCR.



3. Insert batteries in remote.



continued on next page

Startup

4. Turn on the TV.

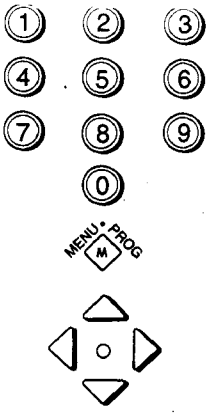
A. Turn on the TV.

B. If you used one of the basic hookups, tune the TV to the channel selected with the CH3 CH4 switch on back of VCR.

If you used one of the advanced hookups, tune the TV to the TV's video input. (See TV owner's manual for details.)

5. Use the on-screen menu system.

Point and Select is the method you use to move through the menu system. There are two ways to select (or change) a menu or feature.



- **Using the Number Buttons:** Press MENU•PROG to display the VCR MAIN MENU. Then use the number button on the remote that corresponds to the number on the menu to select (or change) an item. Using the number button allows you to point and select a menu item at the same time.
- **Using the Arrow buttons:** Press MENU•PROG to display the VCR MAIN MENU. Then use the △ or ▽ arrow button to point to a menu or item. Press MENU•PROG to select (or change) the item.

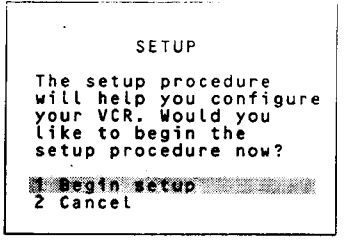
  Although there are two ways to access the menu system, only the number buttons are referenced throughout this manual to explain the VCR features and operations.

6. Turn on the VCR.

A. Press VCR1 on the remote.

Setup Menu Appears Automatically

The first time you turn on the VCR, the SETUP menu will appear. Follow the steps on the screen to automatically auto channel search, automatically set the time, and select some feature options.



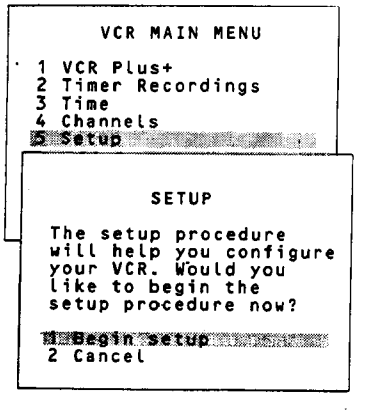
1. Press number button 1 on the remote to Begin setup. *Proceed to Step 7.*
2. Press number button 2 on the remote to Cancel the setup.

   If you choose not to use the SETUP menu, follow the steps in this section to manually set up the VCR so it will operate properly.

   If you skip auto channel search during setup, the auto clock set feature will not be performed in this sequence.

Select SETUP Menu Using VCR MAIN MENU

If the SETUP menu does not appear, you can select it using the VCR MAIN MENU. Each of these features (except the automatic clock set) may also be performed individually.



To select the SETUP menu.

1. Press MENU•PROG to display the VCR MAIN MENU.
2. Press 5 to display the SETUP menu.

Startup

7. Use SETUP menu to auto channel search and auto clock set.

Follow the steps on the screen to auto channel search and automatically set the clock*. If the SET TIME ZONE or SET DAYLIGHT SAVINGS screen appears, follow step A or B below. If the SETUP menu appears, skip to step C.

```
SET TIME ZONE
What is your time zone?
1 Eastern
2 Central
3 Mountain
4 Pacific
5 Alaska
6 Hawaii
7 Automatic
Press MENU to continue
```

A. **If the SET TIME ZONE screen appears, select a time zone:**

Press the number on the remote (1-6) corresponding to the "standard" time zone you live in. If you do not know your time zone, press 7 and an automatic setting will be made.

If you select Automatic for your time zone, the VCR will set the clock using the first Coordinated Universal Time information it finds. If the time is not correct, select a time zone or set the clock manually. If the time is incorrect by a few minutes (more than one minute), the local station may not be transmitting the correct time.

```
SET DAYLIGHT SAVINGS

Does your area observe
Daylight Savings Time
from April to October?

1 Yes, DST is observed
2 No
3 Automatic
Press MENU to continue
```

B. **If the SET DAYLIGHT SAVINGS screen appears:**

Press 1 if your area observes daylight savings time from April to October or press 2 if your area does not observe daylight savings time. If you do not know, press 3.

The VCR will set the time according to the information received from the broadcast.

```
SETUP

Would you like the VCR
to search for and store
all available channels?

1 Search for channels
2 Skip this step
```

C. **When the auto channel search SETUP screen appears:**

Press 1 if you would like the VCR to search for and store all available channels. Press 2 if you wish to skip this step.

If you skip auto channel search during setup the auto clock set feature will not be performed in this sequence.

D. Press MENU•PROG on the remote if all antenna or cable connections are completed. Auto Channel Search will be performed followed by automatic clock set.

If The Auto Clock Set was unsuccessful message appears, you can try auto clock set again or press 1 to set the clock manually. The clock must be set before you can use the timer recording feature.

```
SETUP
The Auto Clock Set
was unsuccessful.
Would you like to set
the time and date?

1 Set Time and Date
2 Skip this step
```

```
Make sure all antenna
connections to the VCR
are complete.

Press MENU when ready
```

```
SETUP

The VCR is now setting
the clock. This may
take several minutes.

Press MENU to cancel
```

Try Auto Clock Set Again: If you think there is a local station (usually PBS) broadcasting the XDS (time) information, make sure the Auto Clock Set feature is set to ON on the TIME menu (press 2 to exit SETUP, press MENU•PROG to display the VCR MAIN MENU, press 3 to display the TIME menu, and press 2 to turn the Auto Clock Set feature ON). Tune the VCR to the channel you believe is broadcasting the information before turning off the VCR. If the time does not set within ten minutes, XDS is not available and you will have to set the clock manually.

Set Clock Manually: Press 1 and follow the directions *on the following page* to manually set the clock.

* Signal not available in all areas.

continued on next page

Startup

Manual clock set.

If the AUTO CLOCK SET was unsuccessful:

A. Press 1 to display the SET TIME AND DATE screen.

B. Enter the time and date with the number buttons on the remote.

- Press 0 before single-digit numbers.

  Example: press 0, then 5, then 0, then 7 for a time of 5:07. Press 1 for AM or 2 for PM.

- Press CLEAR on the remote to change incorrect entries.

C. Press MENU•PROG on the remote to remove the SET TIME AND DATE screen from the TV screen and start the clock.

The time will appear in the VCR's display panel and the time and date will appear on the TV screen when you press DISPLAY.

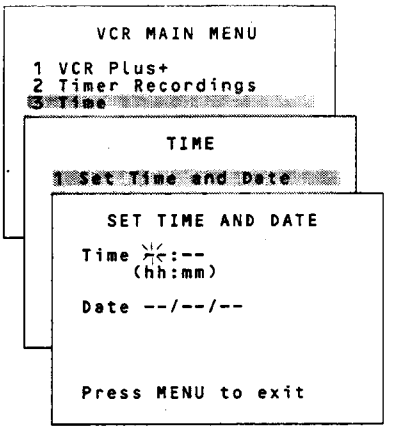
If you ever need to set the clock manually at a later time:

A. Press MENU•PROG on remote to display the VCR MAIN MENU on the TV screen.

B. Press 3 to display the TIME menu.

C. Press 1 to display the SET TIME AND DATE screen.

If you set the clock manually, Auto Clock Set will be set to OFF.

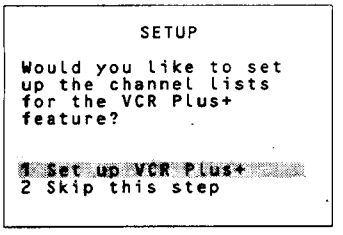


8. Setup VCR Plus+ channels.

The VCR must be setup with the VCR Plus+ channels before you can record using VCR Plus+. This can be done now or at a later time.

Press 1 if you would like to setup the VCR Plus+ channels now. Press 2 if you wish to skip this step.

Details are on page 34.



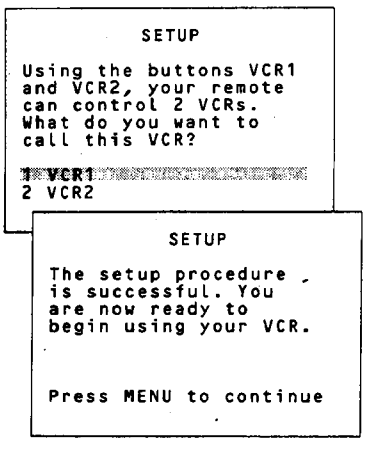
9. Program VCR for VCR1 or VCR2•DVD button.

You can program this VCR to respond to the VCR1 or VCR2•DVD button on the remote. *Details are on page 18.*

Press 1 if you want your VCR to respond to the VCR1 button or press 2 if you want your VCR to respond to the VCR2•DVD button on the remote.

Remember you must press VCR1 or VCR2•DVD on the remote — whichever you selected in the menu — before the remote will operate this VCR.

Setup is complete. Press MENU•PROG to return to the VCR MAIN MENU.

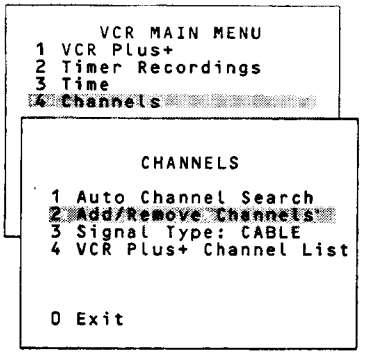


Startup

10. Add or remove channels from the VCR's memory.

You may want to add or remove channels if some of the channels are not active, have weak signals, or you do not want to watch them.

We recommend channels be placed in memory using the Auto Channel Search feature before adding or removing channels. Channels 2-13, L1, and L2 are preset at the factory.



A. Press VCR1 (VCR2•DVD) on the remote.

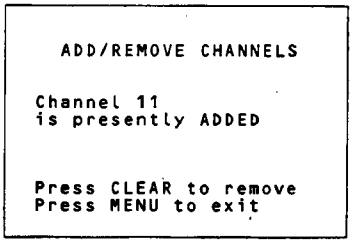
B. If the VCR MAIN MENU does not appear on the TV screen, press MENU•PROG on the remote.

C. Press 4 to display the CHANNELS menu.

D. Press 2 to display the ADD/REMOVE CHANNELS menu.

E. Follow the directions on the screen.

F. Add or remove more channels by entering channel numbers or using CHAN up or down.

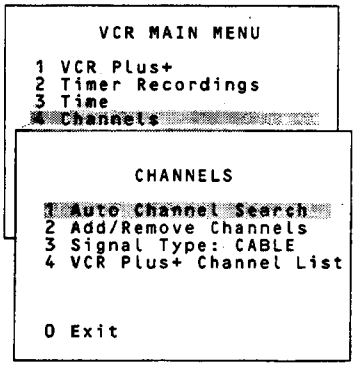


Auto channel search using the CHANNELS menu.

If you ever need to repeat Auto Channel Search because you change cable or antenna signals:

A. Press MENU•PROG to display the VCR MAIN MENU on the TV screen. If this menu does not appear:

- Make sure TV is tuned to same channel as the CH3 CH4 switch on the back of the VCR or the TV's video input (refer to TV's manual).
- Press VCR1 (VCR2•DVD), then press MENU•PROG again.
- If you use a basic hookup, check VCR indicator in display panel – it should be on. Press TV•VCR to turn it on.
- Check the connections.



B. Press 4 to display the CHANNELS menu.

C. Press 1 to begin Auto Channel Search.

The VCR automatically selects the Signal Type: CABLE (cable TV) or ANTENNA. If you need to change the setting manually, press 3.

continued on next page

Startup

11. Select a language./Choisissez une langue.

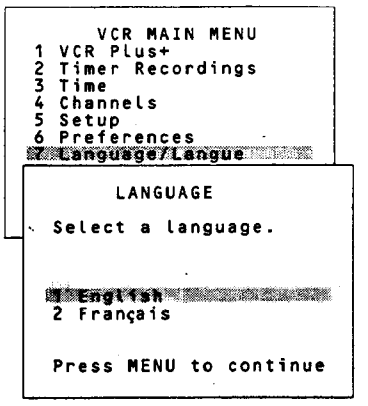
You can select the language for the displays on the VCR.

A. Press MENU•PROG on the remote to see the VCR MAIN MENU on the TV screen.

B. Press 7 to display the LANGUAGE menu.

C. Select English or French.

- Press 1 to select English.
- Press 2 to select Français (French).



12. Use TV•VCR button.

Skip this step if you used one of the advanced hookups.

When using one of the basic hookups, the TV•VCR button lets you switch between the picture coming from the VCR or the picture from the TV channel. This button lets you record a program on the VCR while watching another channel on the TV. *Details are on page 32.*

A. Press VCR1 (VCR2•DVD) to set the remote to control the VCR.

B. Press TV•VCR to see the picture from the VCR.
The VCR indicator lights in the display panel.

C. Press CHANNEL up or down on the VCR or CHAN on VCR's remote to change channels on the VCR.
The channel number changes in the display panel.

D. Press TV•VCR to see the TV channels.
The VCR indicator does not light in the display panel. Change channels using the TV's remote.

E. Return the TV to the VCR viewing channel — CH3 or CH4.

F. Press VCR1 (VCR2•DVD), then TV•VCR to switch back to the picture from the VCR.

Startup

13. Set Auto TV/VCR feature.

If you used one of the basic hookups and did not connect the audio/video jacks of the VCR to the TV, leave the Auto TV/VCR feature set to ON.

If you have connected your VCR using the audio/video input of your TV, you can prevent the VCR indicator from turning on automatically and interrupting the cable or antenna signal to your TV.

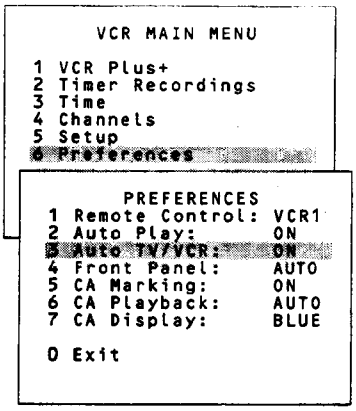
A. Press MENU•PROG on remote to see VCR MAIN MENU on the TV screen.

B. Press 6 to display PREFERENCES.

C. Press 3 to select Auto TV/VCR: ON or OFF.

- Select ON if you used one of the basic hookups and watch your VCR on channel 3 or 4 of your TV. The VCR will automatically switch the TV•VCR setting to VCR every time the VCR is turned on, a tape with the safety tab removed is inserted, or you press PLAY.
- Select OFF if you used one of the advanced hookups and watch your VCR on the video input channel of your TV. The VCR indicator will not turn on automatically and the signal from your antenna or cable to your TV will not be interrupted.

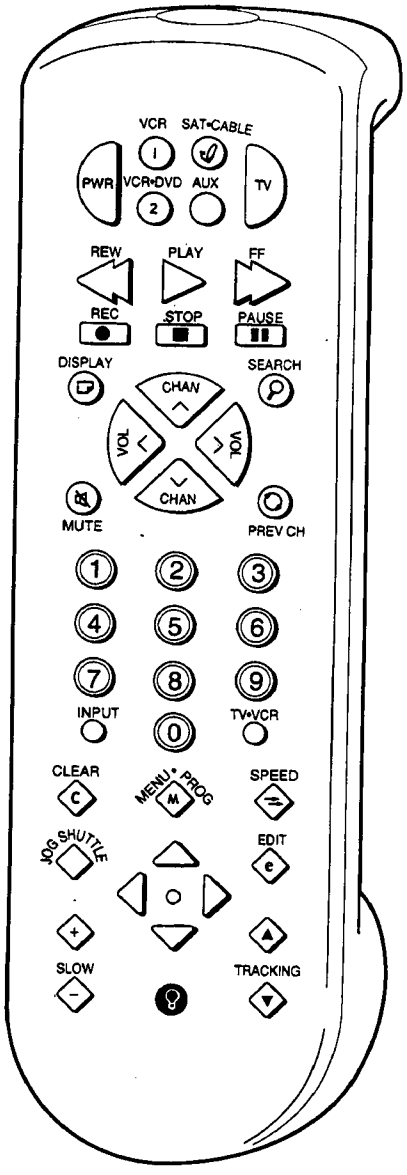
  Pressing TV•VCR on the remote will still turn the VCR indicator on or off and switch the antenna signal.



Remote Control

Your back-lit remote has a light button ( ) that glows in the dark. Press this button to light the buttons on the remote. The remote buttons remain lit when they are pressed within a few seconds of each other. If a button is not pressed within approximately ten seconds, the light turns off to conserve battery power.

Note: Home system theatre users — press PWR twice to turn off all RCA brand components.



Component Buttons

Press one of the buttons to set the remote to operate that component.

AUX (Auxiliary)
Can be programmed to control a compatible RCA audio or video component. *See page 21.*

SAT•CABLE
Turns on a compatible cable box or satellite receiver. *See page 20.*

Used with PWR button to turn on another brand of cable box or receiver, other than RCA, when the remote is programmed to control that cable box or receiver. *See page 20.*

TV
Turns on a compatible RCA, ProScan, or GE TV and sets the remote to control the TV.

Used with PWR button to turn on another brand of TV, other than RCA, when the remote is programmed to control that TV. *See page 19.*

VCR1
Turns on a compatible RCA, ProScan, or GE VCR and sets remote to control the VCR.

VCR2•DVD
Turns on a compatible RCA, ProScan, or GE VCR and sets remote to control VCR when it has been setup. *See page 18.*

Used with PWR button to turn on a compatible RCA or ProScan LaserDisc player. *See page 18.*

Can also be programmed to control a compatible RCA DVD player.

VCR Function Buttons

Press VCR1 (VCR2•DVD) to set remote to control the VCR to use the function

Arrow Buttons ( )
Allow you to move through the menus, enter data and change settings of selected features. *See page 10.*

CHAN Up or Down
Selects next higher or lower channel in the VCR's channel memory.

CLEAR
Resets time counter to 0:00:00.

Allows you to change entries when setting the clock or VCR for a VCR Plus+ or timer recording.

DISPLAY
Shows VCR operating displays on the TV screen.

Displays program information when available.

Displays the time counter.

EDIT
Signals two properly connected compatible VCRs to begin copying a tape. *See page 42.*

FF (Fast Forward)
Fast forwards the tape when the VCR is stopped.

Searches the picture in forward motion during playback.

INPUT
Turns the line input on or off. L1 or L2 will appear in the VCR's display panel and VIDEO1 or VIDEO2 will appear on the TV screen.

Line input refers to the signal coming from the component connected to the audio/video input jacks on the back (L1) or front (L2) of the VCR.

JOG SHUTTLE and indicator light
Used with arrow buttons for frame advance and variable speed search. *See page 25.*

The indicator in the middle of the arrow buttons lights when JOG SHUTTLE is turned on.

MENU•PROG
Displays the VCR MAIN MENU on the TV screen.

Removes a menu from the screen.

Numbers (0 through 9)
Select a channel up to 99 by pressing two numbers.

Select a cable channel over 99 by pressing and holding 1 until 1– – appears on the screen. Then press the other two numbers.

Buttons

VCR Function Buttons

(continued)

PAUSE
Pauses action for viewing during playback.

Pauses recording to prevent recording of unwanted scenes.

PLAY
Plays a tape.

PWR (Power)
Turns off VCR when remote is set to control the VCR.

PREV CH (Previous Channel)
Switches between two channels.

Select one channel and then use the number buttons to select another. Press PREV CH to switch between the two channels.

REC
Starts VCR recording.

Used for express recording (XPR). *See page 39.*

REW (Rewind)
Rewinds the tape when the VCR is stopped.

Searches the picture in reverse motion during playback.

SEARCH
Displays INDEX, GO-TO, and BLANK SEARCH menus on TV.

Used during playback with the COMMERCIAL▸▸ADVANCE™ feature. *See pages 30-31.*

SLOW - / +
Used for slow-motion playback.

SPEED (Tape Speed)
Selects a recording speed (SP, LP, or SLP).

STOP
Stops the normal functions such as record, playback, rewind, fast forward, and pause.

TRACKING Up and Down
Lets you manually reduce the streaks that may appear on the picture during play or pause.

Reduces picture "jitter" during stop-action playback.

TV•VCR
Switches the picture signal so that it either comes from the VCR or the TV channel. *See page 14.*

TV Function Buttons

Press the TV button to set remote to control a compatible TV. Some buttons may not work with every TV.

Arrow Buttons (⌃⌄)
Allow you to move through the menus, enter data and change settings of selected features.

CHAN Up or Down
Selects next higher or lower channel in the TV's channel memory when remote is set to control a TV.

CLEAR
Removes menus or status displays from the screen.

DISPLAY
Shows the status displays on the screen.

Removes menus or displays from the screen.

MUTE
Turns the TV sound on or off.

Numbers (0 through 9)
Select a channel up to 99 by pressing two numbers.

Select a cable channel over 99 by pressing and holding 1 until 1- - appears on the screen. Then press the other two numbers.

PWR (Power)
Turns off a compatible TV when remote is set to control TV.

Used with TV button to turn on a compatible TV, other than RCA, when the remote is programmed to control that TV. *See page 19.*

PREV CH (Previous Channel)
Switches between two channels.

Select one channel and then use the number buttons to select another. Press PREV CH to switch between the two channels.

Used as an ENTER button on some TVs.

SLOW - / +
Used with the TV's menus to select and adjust features.

VOL Up and Down
Raises and lowers sound.

Cable Box and Satellite Receiver Function Buttons

Press the SAT•CABLE button to set remote to control a compatible cable box or satellite receiver. Some buttons may not work with every cable box or receiver. If you have an compatible RCA brand receiver, test the "TV Function Buttons" to see which ones operate the receiver.

CHAN Up or Down
Selects next higher or lower channel.

Numbers (0 through 9)
Select a channel using the number buttons.

PWR (Power)
Turns off a compatible cable box or satellite receiver when remote is set to control it.

Using the VCR2•DVD Button

Controlling a VCR

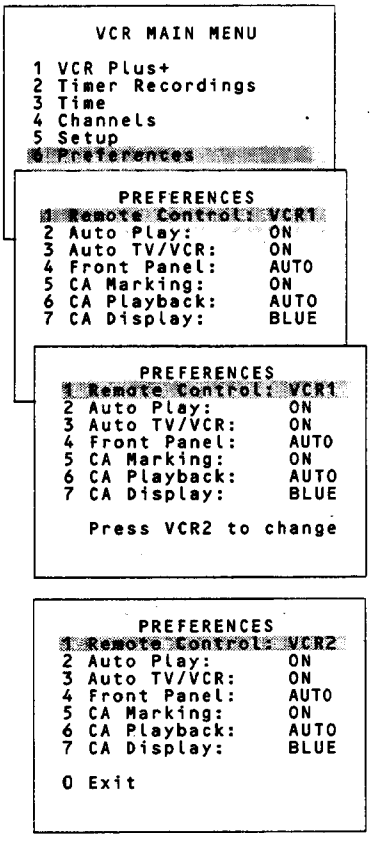
The VCR's remote controls two compatible RCA, ProScan, or GE VCRs with the VCR1 and VCR2•DVD buttons. Most compatible VCRs automatically respond to VCR1 without being programmed. If you own two compatible VCRs, test them to see if VCR1 turns on both VCRs. If it does, then you may want to program this VCR to respond to the VCR2•DVD button on the remote.

Program the VCR for Remote Control

Set the Remote Control feature of the VCR to the VCR1 or VCR2 position. The remote then controls the VCR with either the VCR1 or VCR2•DVD button — whichever position you select in the menu.

1. Press MENU•PROG to display the VCR MAIN MENU.
2. Press 6 to display PREFERENCES.
3. Press 1 to activate the Remote Control feature.
4. Press VCR1 or VCR2•DVD to change the setting and program this VCR to respond to the VCR1 or VCR2•DVD button — whichever you select.

Important Reminder: Remember you must press VCR1 or VCR2•DVD on the remote — whichever you selected in the menu — before the remote will operate this VCR.



Controlling a LaserDisc Player or DVD Component

The VCR2•DVD button on the VCR's remote will also control the primary functions of an RCA, ProScan, or GE LaserDisc player without being programmed. It can also be programmed to control an RCA DVD component using the code below. If you ever need to reprogram the remote to operate a VCR or LaserDisc player, use the code

Program the Remote Control

1. Turn on the component.
2. Point the VCR remote at the component
3. Hold the VCR2•DVD, button and press three numbers buttons to enter the code for the component.
4. Release the buttons.
5. Press PWR. If the component turns off, setup is complete.

RCA, ProScan or GE Codes		
VCR	LaserDisc Player	DVD
037	037	078

Operate the Component

After you have set up your remote to control your component, test the remote buttons to see which ones operate it.

1. Point the remote at the component and press VCR2•DVD.
2. If the component does not turn on in step 1, press VCR2•DVD and then PWR.
3. Test the remote buttons to see which ones operate the component.

Controlling a TV

The VCR's remote is preprogrammed to control the basic functions of a compatible RCA, ProScan, or GE TV. The remote can also be setup to control other manufacturer's brands. To program the remote, use the remote buttons that correspond to your brand.

Program the Remote for a TV

1. Turn on the TV.
2. Point the VCR's remote at the TV.
3. Hold the TV button and press three number buttons for your brand.
4. Release the buttons.
5. Press PWR on the remote. If the TV turns off, setup is complete.
6. Repeat steps 2 – 4 with three other buttons if the first ones do not work.

TV Codes

Brand*	Code
A-Mark	102
Admiral	005
Amtron	064
Akai	002,103
Anam	104,105
Anam National	038,106
AOC	011,019,027,088,107
Bell&Howell	005
Candle	011,027,033
Citizen	011,027,033,064
Colortyme	011,027,084
Concerto	011,027
Contec/Cony	036,037,040,042,064
Craig	064
Curtis Mathes	000,011,015,027,037
CXC	064
Daewoo	011,019,027,012
Daytron	011,027
Dimensia	000
Electrohome	006,011,014,027,038, 061,068
Emerson	011,026,027,028,029,030, 031,032,037,042,053,064,065,067, 075,076,078,079,094,095,096
Envision	011,027
Fisher	017,021,039,041
Funai	064
GE	000,008,009,011,012,027, 038,068,086,089,091
Goldstar	003,004,006,011,019, 027,037,050
Hallmark	011,027
Hitachi	009,011,027,036,037,040, 047,048,063,080,094,097,098
Infinity	013
JBL	013
Jensen	011,027
JVC	012,024,036,037,040,048,051,074
Kawasho	002,011,027
Kenwood	006,011,014,027
Kloss Novabeam	035,043
KTV	078
Loewe	013
Luxman	011,027
LXI	000,013,018,021,023,054
Magnavox	006,007,010,011,013,016, 027,033,035,043,049,066,087,089
Marants	013
Marantz	011,013,027,069
Memorex	005
MGA	006,011,014,019,022, 027,041,056,061,068
Mitsubishi	006,011,014,019,022, 027,041,055,056,061,068
MTC	011,019,027
Multivision	081
NAD	018,023
NEC	011,014,019,027,038,084
Panasonic	012,013,038,086,111
Penney	000,008,011,019,027,040, 068,077,086,088
Philco	006,007,010,011,013016,019, 027,033,035,037,038,043,087,089
Philips	002,006,007,010,011,013,016, 033,035,037,038,043,066,073
Pioneer	011,027,045,062,093
Portland	011,019,027,037
ProScan	000
Proton	011,027,037,072
Quasar	012,038,092
Radio Shack	000,021,025,036,037, 059,064,078
RCA	000,006,011,019,027,034, 038,044,046,088,100,101,109
Realistic	021
Sampo	011,027
Samsung	006,011,014,015,019 027,036,037,077,110
Sanyo	017,021,039,056,057,058
Scott	028,037,064
Sears	000,006,011,014,017,018,021, 023,027,039,040,041,051,071,083,095
Sharp	011,020,025,027,037 052,053,059,060,108
Signature	005,094
Sony	002
Soundesign	011,027,033
Sylvania	006,007,010,011,013,016, 027,033,035,043,049,066,087,089
Symphonic	064,076
Tatung	038
Technics	012
Techwood	011,027
Teknika	011,019,027,033,036 037,040,066
Telecaption	090
TMK	011,027
Toshiba	018,021,023,040,071, 077,085,090
Universal	008,009
Victor	051
Vidtech	019,027
Wards	000,005,006,007,008 009,010,011,013,019,025,027,028, 035,043,059,066,076,082,089
Yamaha	006,014,019,027
Zenith	001,099

* The remote may not be able to control every model TV of the brands listed.

Operate the TV

After you have set up your remote to control your TV, test the TV buttons to see which ones operate your TV.

1. Point the remote at the TV and press TV.
2. If TV does not turn on in step 1, press TV and then PWR.
3. Use the "TV Function Buttons" as described *on page 17.*

Helpful Hint: Notice the difference between the TV and VCR on-screen displays. This is one way to tell if the remote is set to control the VCR or the TV.

Controlling a Cable Box or Satellite Receiver

The SAT•CABLE button on the VCR's remote is preprogrammed to control either a compatible RCA cable box or satellite receiver. If your cable box or receiver is another manufacturer's brand and has its own remote, you will probably be able to program the VCR's remote to control it. To program the VCR's remote, enter the code that corresponds to your brand.

Program the Remote for a Cable Box or Satellite Receiver

1. Turn on the cable box or satellite receiver.
2. Point the VCR remote at the cable box or receiver.
3. Hold the SAT•CABLE button and press three number buttons to enter the code for your brand.
4. Release the buttons.
5. Press PWR on the remote. If the cable box or receiver turns off, setup is complete.
6. Repeat steps 2 – 5 with a different code if the first one does not work.

Cable Box Codes

Brand*	Code
ABC	022,046,053,054
Anvision	007,008
Cablestar	007,008
Diamond	056
Eagle	007,008
Eastern Int.	002
General Instuments	046
GI 400	004,005,015,023,024, 025,030,036
Hamlin	003,012,013,034,048
Hitachi	037,043,046
Jerrold	004,005,015,023,024, 025,030,036, 045,046,047,062,065
Macom	037,043
Magnavox	007,008,019,021,026, 028,029,032,033,040,041
NSC	009
Oak	001,016,038
Oak Sigma	016
Panasonic	003,027,039,061
Philips	007,008,019,021,026,028, 029,032,033,040,041
Pioneer	018,020,044
RCA	000,027
Randtek	007,008
Regal	003,012,013
Regency	002,033
Samsung	044
Sci. Atlanta	003,022,035,063,064
Signature	046
Sprucer	027
Starcom	046
Stargate 2000	058
Sylvania	011,059
Teknika	006
Texscan	010,011,059
Tocom	017,021,049,050,055
Unika	031,032,041
Universal	051,052,060
Viewstar	007,008,019,021,026,028 029,032,033,040,041
Warner Amex	044
Zenith	014,042,057,061

Satellite Receiver Codes

Brand*	Code
Chaparral	080,081
Cheyenne	081
Drake	082,083
GE	000
General Instruments	092,093,094
Realistic	084
RCA	000
Sierra I,OII,OIII	081
STS1	085
STS2	086
STS3	087
STS4	088
Toshiba	089
Uniden	090
Video Cipher II	091

* The remote may not be able to control every cable box or satellite receiver of the brands listed.

Operate the Cable Box or Satellite Receiver

After you have setup your remote (if required) to control your cable box or receiver, test the buttons to see which ones operate it.

1. Point the remote at the cable box or satellite receiver and press SAT•CABLE.
2. If the cable box does not turn on in step 1, press SAT•CABLE and then PWR.
3. Use the "Cable Box or Receiver Function Buttons" for the cable box and test the "TV Function Buttons" to see which ones operate the satellite receiver. *See page 17.*

Controlling an Auxiliary RCA Component

The remote that came packed with your VCR is also capable of controlling one compatible RCA audio component, such as an AM/FM radio, CD player, tape players, phonograph, RCA DSS® satellite receiver, or RCA DVD player. The remote must be programmed for the specific component it is to control. To program the remote, use the code that corresponds to your component.

Program the Remote for an Auxiliary Component

1. Turn on the component.
2. Point the VCR's remote at the component.
3. Hold the AUX button and press three number buttons to enter the code for your component.
4. Release the buttons.
5. Press PWR on the remote. If the component turns off, setup is complete.

Type of Auxiliary Equipment and Code								
	AM/FM	AUX	Phono	Cassette Tape1	CD	DSS	Cassette Tape2	DVD
RCA	003	004	005	006	007	008	009	010

*The remote may not be able to control every RCA model of auxiliary equipment listed.

Operate the Auxiliary Component

After you have setup your remote to control your component, test the buttons to see which ones operate the component.

1. Point the remote at the component and press AUX.
2. If the component does not turn on in step 1, press AUX and then PWR.
3. Test the buttons on the remote to see which ones operate your component. *Refer to the remote control section.*

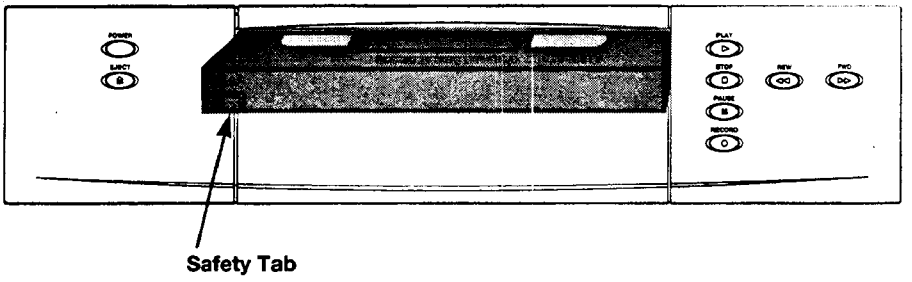
DSS® is a registered trademark of DIRECTV, Inc., a unit of Hughes Electronics Corporation.

Operating Instructions

To Play a Tape

1. Turn on the TV and tune it to channel 3, 4, or TV's video input to see the picture from the VCR.
2. Insert a tape in the VCR.

   VCR automatically turns on. The cassette-in ⊡ indicator lights, and the VCR indicator lights if the Auto TV/VCR feature is set to ON. The tape automatically begins playback if the safety tab on the cassette has been removed and the auto play feature is turned on.



3. Press PLAY, if necessary. PLAY appears in the VCR's display panel.
4. Press TRACKING up or down to remove any streaks from the picture, if necessary. *Details are on page 24.*
5. Press STOP.
6. Press REW .

   The VCR will automatically rewind the tape if it reaches the end of the tape during playback. While rewinding, you can press POWER and the VCR will turn off after rewinding.
7. Press EJECT on the VCR to eject the tape once it is completely rewound.

Using the Playback Features

Tape Playback: HI-FI/LINEAR/MIX Feature

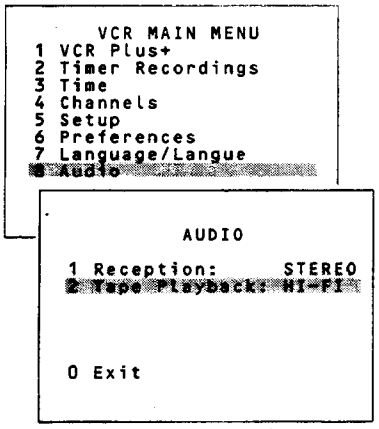
The VCR records the same audio on both the Hi-Fi and linear tracks on the tape. The Hi-Fi stereo sound is recorded on separate left and right stereo channels. Monaural sound is recorded on the linear track.

To enjoy Hi-Fi sound, connect your VCR to a stereo television or amplifier/receiver using the audio/video jacks. The Tape Playback: HI-FI/LINEAR/MIX feature lets you select which audio you play back.

To Select Playback Sound

1. Press MENU•PROG to see the VCR MAIN MENU on the TV screen.
2. Press 8 to see the AUDIO menu on the TV screen.
3. Press 2 to switch between HI-FI, LINEAR, or MIX sound.
   - Select HI-FI to play back sound recorded on the Hi-Fi track and for normal use.

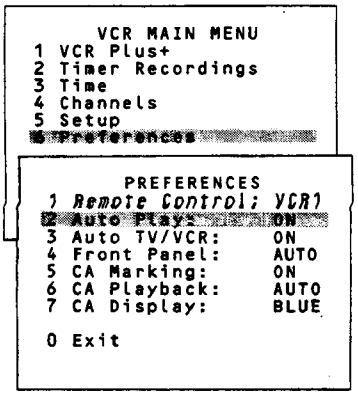
     The HIFI indicator is lit in the VCR's display panel during Hi-Fi playback.
   - Select LINEAR to play back the sound recorded on the linear monaural track – used to playback a second audio program (SAP).
   - Select MIX to play back the sound recorded on both the linear track and the Hi-Fi track, sound-on-sound.

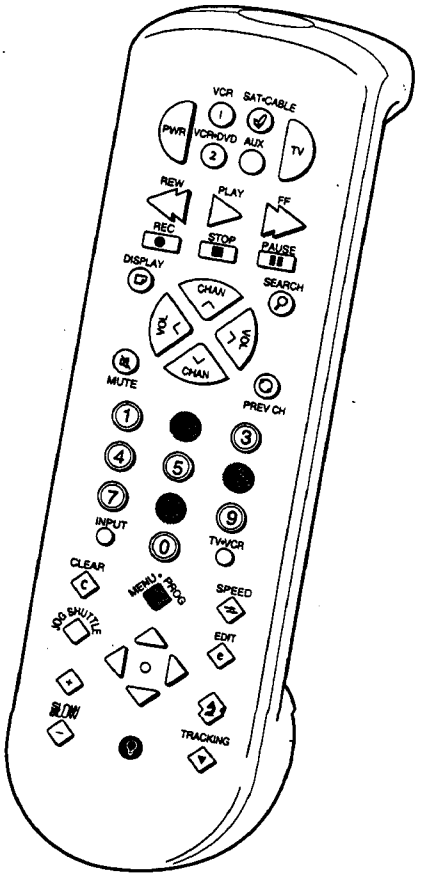


Auto Play Feature

This feature lets you tell the VCR whether you want it to automatically start playing a tape that is inserted with the safety tab removed.

1. Press MENU•PROG on the remote to see the VCR MAIN MENU on the TV screen.
2. Press 6 to display the PREFERENCES menu.
3. Press 2 to select Auto Play: ON or OFF.
   - Select ON to have a tape with its safety tab removed start playing automatically.
   - Select OFF if you do not want a tape with its safety tab removed to start playing automatically.





Using the Playback Features

Pause for Stop Action

This feature stops the tape in action and allows you to examine the details of the scene. Stop action works best for tapes recorded in the SP and SLP speed.

1. Press PAUSE during playback to stop the action.

   STILL appears in the VCR's display panel.

2. Press TRACKING up or down to reduce any jittering of the picture.

3. Press PAUSE or PLAY to return to playback.

   The VCR will automatically switch from stop-action playback to stop after a few minutes.

Slow Motion

You can view the picture in slow motion during play or play pause. SLOW – and + allow you to change the speed. Sound is turned off during slow-motion playback. Slow motion works best in the SP or SLP speed.

1. During playback, press SLOW + or – to start slow-motion playback.

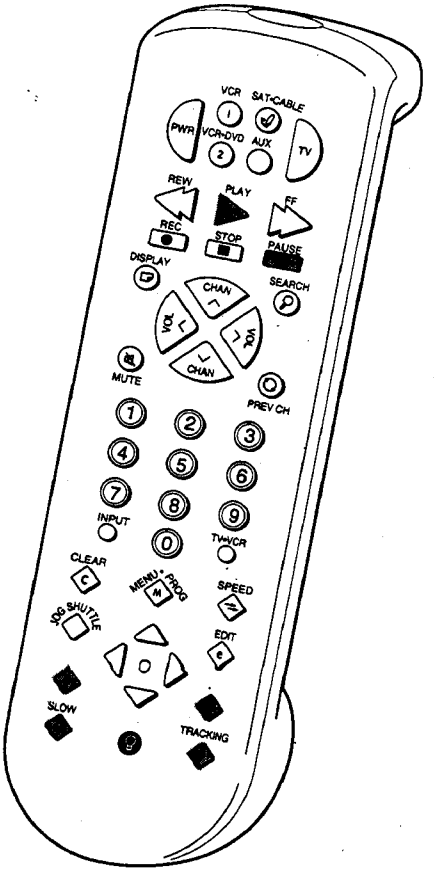
   SLOW appears in the VCR's display panel.

2. Press SLOW + to increase the speed or – to decrease the speed.

3. Use TRACKING up or down to remove any streaks from the picture.

4. Press PLAY to return to playback.

   The VCR will automatically switch from slow-motion playback to stop after a few minutes.



Automatic Tracking

The VCR has automatic tracking which adjusts the picture when playing back a tape recorded on another VCR. Automatic tracking is turned on whenever a tape is inserted or the VCR's power is turned on.

Manual Tracking

Occasionally, you may need to manually adjust tracking on a tape recorded on a different VCR or camcorder. The TRACKING buttons on the remote or VCR are used when playing a tape. They have no effect during recording.

- When streaks or snow appear, press TRACKING up or down for the best possible picture.
- Press TRACKING up or down during stop-action pause to reduce picture "jitter".
- Press both TRACKING buttons at the same time to turn automatic tracking back on.

Using the Playback Features

Picture Search

You can search a picture during playback by fast forwarding or rewinding the tape. Sound is turned off during picture search. The picture is best for tapes recorded in the SP or SLP speed.

Fast Forward Search

1. During playback, press FF on the remote or FWD on the VCR to search forward at a faster-than-normal speed.
2. To return to playback, press FF on the remote, FWD on the VCR, or PLAY.

Rewind Search

1. During playback, press REW to search in reverse at a faster-than-normal speed.
2. To return to playback, press REW or PLAY.

Variable Speed Picture Search and Frame Advance — Using JOG SHUTTLE and Arrow (◁ ▷) Buttons on Remote

You can also use the JOG SHUTTLE and arrow (◁ ▷) buttons on the remote to search a picture during playback. Turning on JOG SHUTTLE (the light in the middle of the arrow buttons turns on) enables you to search forward and backward through a tape while in the PLAY or STILL mode.

Sound is turned off during picture search and frame advance. Tapes recorded in SP or SLP speed give the best picture.

Shuttle Control

When the VCR is playing a tape, press JOG SHUTTLE to have the VCR enter the still mode. STILL appears in the display panel.

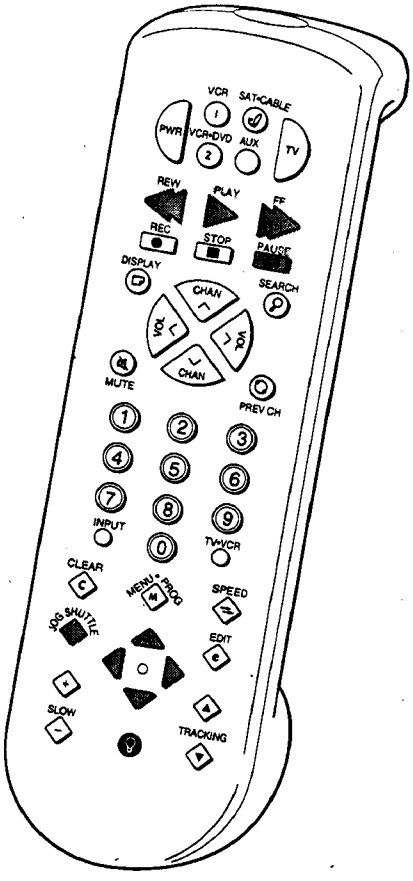
1. Press ▷ and release to search forward slowly. The speed is increased with each press of the ▷ button. As the speed increases, the display changes from SLOW+ to SRCH+. Pressing the ◁ button decreases the speed. Press PLAY to return to normal playback and turn off jog shuttle.

2. Press ◁ and release to search in reverse slowly. The speed is increased with each press of the ◁ button. As the speed increases, the display changes from SLOW- to SRCH-. Pressing ▷ decreases the reverse speed. Press PLAY to return to normal playback and turn off jog shuttle.

Jog Control (Frame Advance)

When you turn on JOG SHUTTLE during playback, you are in the STILL mode. From this mode, you can advance the tape frame by frame.

1. Press △ to advance or ▽ to reverse the picture one frame at a time. The display switches between STILL and SLOW- or SLOW+. Press PLAY or PAUSE to return to normal playback and turn off jog shuttle.



Using the Playback Features

Index Search

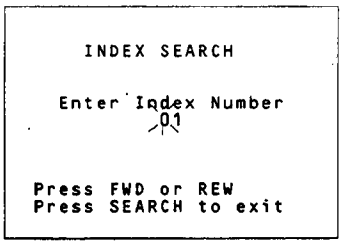
The VCR has a "VHS Index Search System" that automatically records an index mark on the tape every time you stop and start recording. During playback you can locate the program you want to play by the number of index marks.

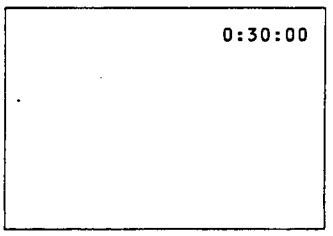
The VCR will automatically locate the index number you select. The VCR will search forward or reverse from the location you are on the tape.

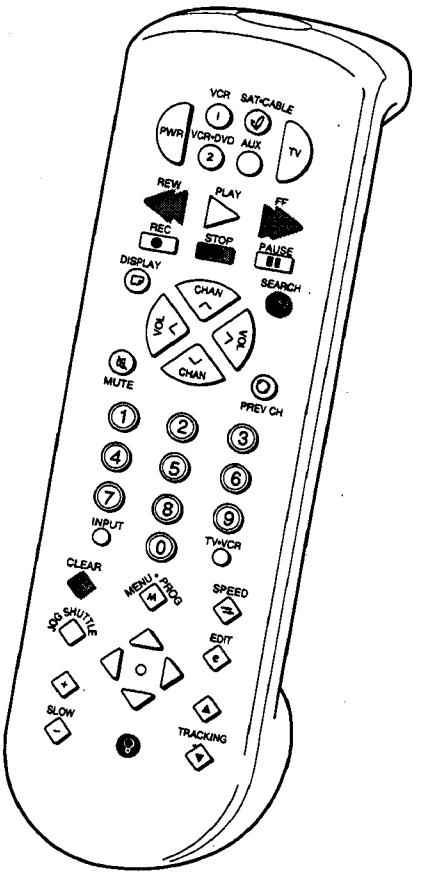
1. Insert the prerecorded tape and press STOP.
2. Press SEARCH on the remote to display the INDEX SEARCH menu on the TV screen.
3. Press two number buttons to enter the number of index marks you want the VCR to search.

   Press CLEAR to correct an entry.
4. Press FF on remote or FWD on the VCR to search forward or press REW to search in reverse.

   The time counter is displayed in the upper right corner of the TV screen during search.







5. Press STOP to stop index searching.

   Some index marks may be missed by the VCR.

   - A mark too close to your location on the tape.
   - The mark at the beginning of a recorded segment of five minutes or less.
   - The first index mark on the tape when you start at the beginning of the tape.

Using the Playback Features

Go-To Search

The go-to search feature allows you to locate a counter reading on the tape.

1. Insert the prerecorded tape and press STOP.
2. Press SEARCH on the remote twice to display the GO-TO SEARCH menu on the TV screen.

```
        GO-TO SEARCH

Current tape counter is
        2:17:25

Press REW or FF to go to
        0:00:00

Press SEARCH to exit
```

3. Press number buttons to enter the hour(s) and minute(s) of the time counter reading you want the VCR to search.

   Press CLEAR to correct an entry.
4. Press FF on the remote or FWD on the VCR to search forward or REW to search in reverse.

   The time counter is displayed in the upper right corner of the TV screen during search.
5. Press STOP to stop go-to searching.

Blank Search

The VCR searches for blank portions of the tape that are more than six seconds in length.

1. Insert the tape and press STOP.
2. Press SEARCH on the remote three times to display the BLANK SEARCH menu on the TV screen.

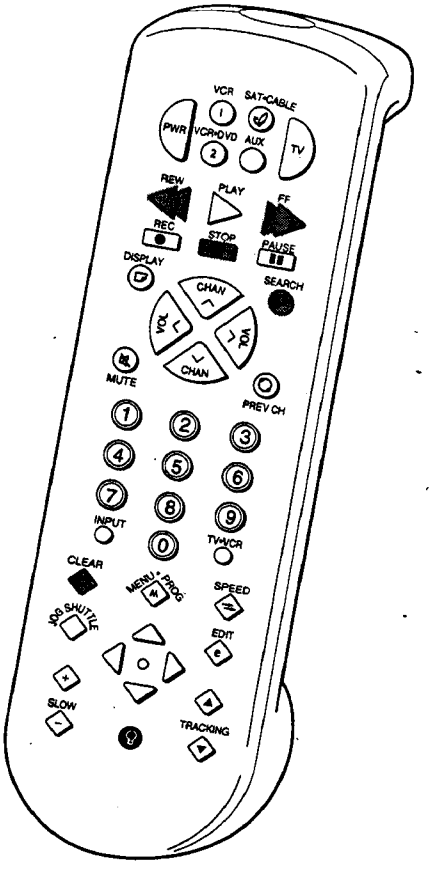
```
        BLANK SEARCH

Press FF to begin
searching for blank
section of tape.



Press SEARCH to exit
```

3. Press FF to begin searching for six seconds of blank tape. A message appears on the screen if a blank area is not found.
4. Press STOP to stop blank searching.



Using the Playback Features

DISPLAY Button

1. Press DISPLAY to display the status of the VCR, channel number, station ID (if available), time counter, title of program (if available), date, time, and tape speed on the TV screen. The time will appear in the display panel.

   The time and date must be set before they are displayed. If you do not press DISPLAY again, these displays will time out.

2. Press DISPLAY again to display information about the program that is playing (if available).

   If program information is not available, Title Unavailable will appear.

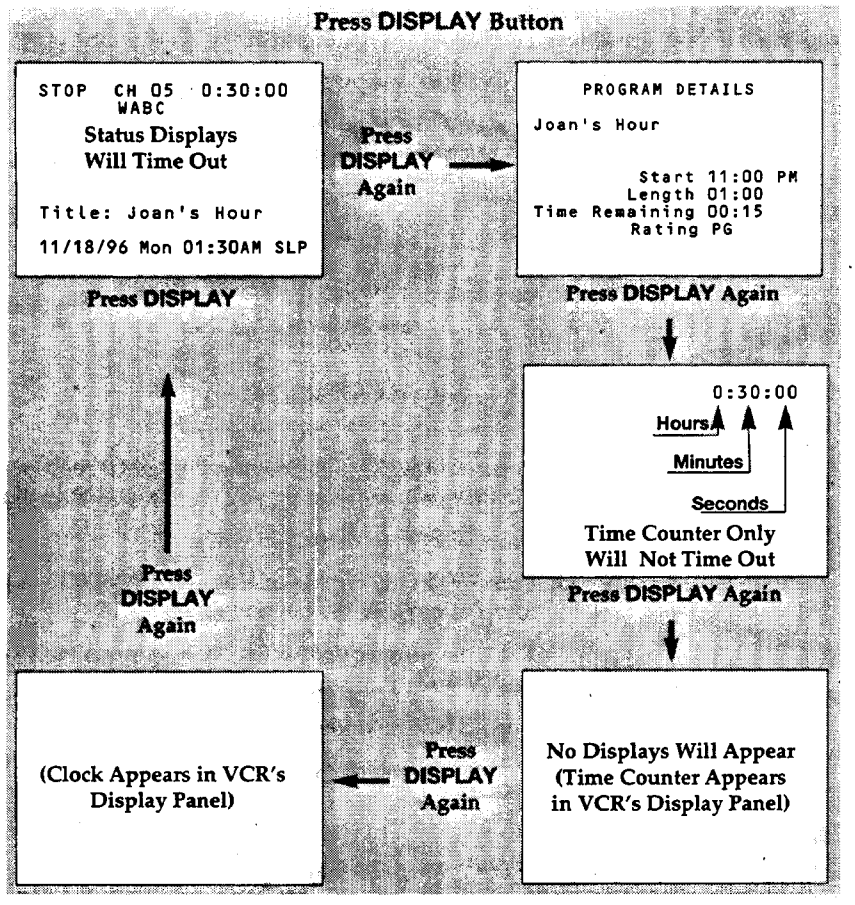
3. Press DISPLAY again to have only the time counter remain on the TV screen. The time counter will appear instead of the time in the VCR's display panel.

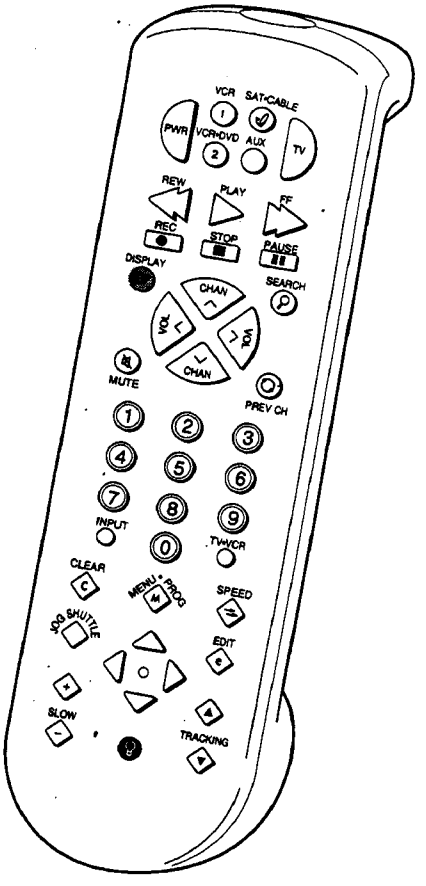
4. Press DISPLAY again to remove the time counter from the TV screen.

   The time counter will remain in the VCR's display panel and no status displays will appear on the TV screen. This is convenient for editing tapes.

5. Press DISPLAY again. No displays will appear on the screen. The clock will appear in the display panel.

   Turning off the VCR returns the displays to normal.

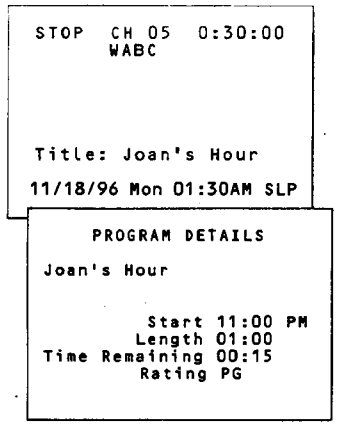




Using the Playback Features

Program Information

Some stations broadcast program information along with the program. When this information is available, it will be displayed automatically when you press the DISPLAY button.



1. Press DISPLAY to display the status displays on the TV screen. The title of the program and station ID will appear if it is available.

   If program information is not available, Title Unavailable will appear.

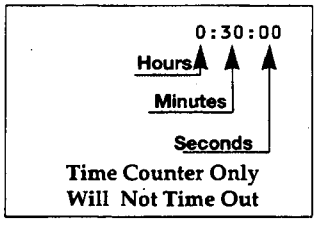
2. Press DISPLAY again to display information about the program (start time, length, time remaining and rating) on the screen. This display will time out automatically if no button is pressed, or:

   Press DISPLAY three times to remove the PROGRAM DETAILS screen from the TV. The clock will appear in the VCR's display panel.

Time Counter

The time counter shows the actual time it takes to record a program or play back a segment of a prerecorded tape. It helps locate the beginning or end of programs you taped. The time counter resets to 0:00:00 whenever the tape is ejected from the VCR. For example, if a 30-minute program was recorded at the beginning of the tape, you would:

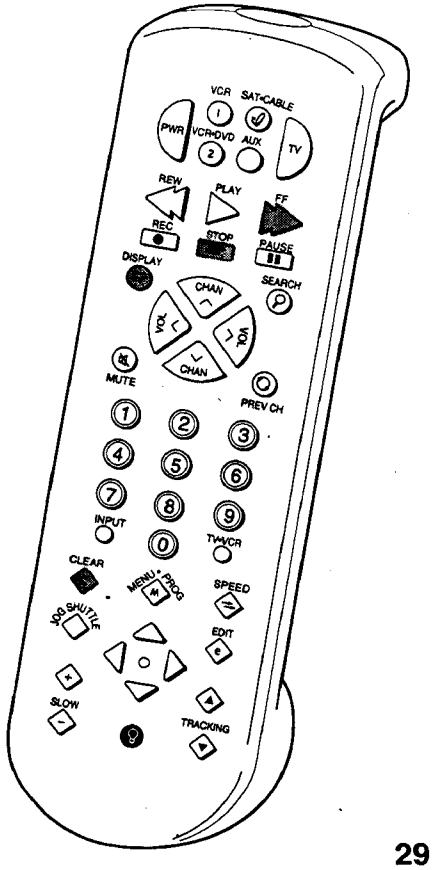
1. Insert the prerecorded tape. Press STOP. Make sure the tape is rewound.
2. Press DISPLAY three times to display only the time counter on the TV screen.



3. Press CLEAR to reset the time counter to 0:00:00.
4. Press FF on remote or FWD on VCR to fast forward the tape until the time counter reads 0:30:00. Press STOP.

   This is the approximate end of the program and you can begin recording at this spot.

5. Press DISPLAY twice to remove the time counter from the screen. The clock will appear in the VCR's display panel.



Recording and Playback

COMMERCIAL▸▸ADVANCE™ is a patented technology that detects and marks most commercials on your tape for any recording that is more than 15 minutes long. During playback, the VCR automatically skips the detected commercial segments or you can choose to manually skip them. This feature reduces three minutes of commercials into approximately 8-12 seconds of fast forwarding in the SLP speed. You can select a background of blue or see the video as the commercials are skipped.

After recording, the VCR rewinds the tape to the beginning of the recording and determines where the commercials are located. It then marks the beginning and end of the detected commercial segments and returns the tape to the end of the recording. *It does not erase the commercials from the tape.*

Because television signals do not indicate where commercials are located, this feature finds and marks them through a set of formulas based on how television is broadcast today. Since television stations broadcast differently and insert their own commercials, you may experience some variations in this feature's effectiveness. Station promotions, identifications, and announcements are not considered commercials — but might be skipped.

See page 51 for answers to common questions about COMMERCIAL ▸▸ADVANCE™ .

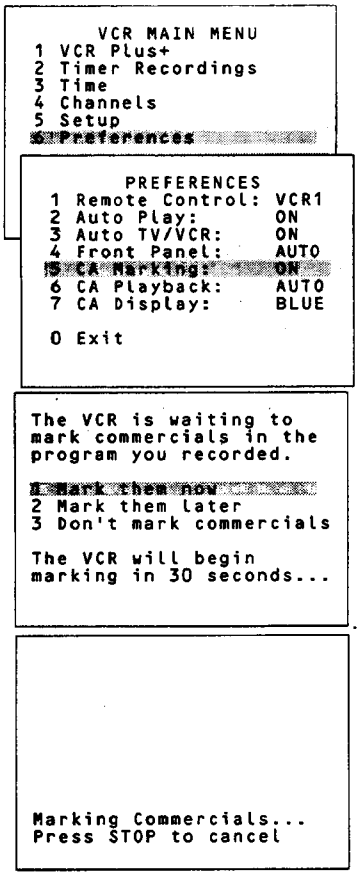
COMMERCIAL▸▸ADVANCE™ Marking

1. Press MENU•PROG to display the VCR MAIN MENU.
2. Press 6 to display the PREFERENCES menu.
3. Make sure CA Marking is set to ON. If not, press 5.

   The VCR will mark most commercials for the following types of recording:

   - **VCR Plus+, Timer, or Express Recording:** The VCR will automatically mark the commercials after the power is turned off.
   - **Manual Recording:** When you press STOP to stop recording, the VCR will ask you if you want to mark the commercials. Just follow the on-screen display.

     MARK and COMM alternate in the display panel while the VCR is marking commercials.



To Stop COMMERCIAL▸▸ADVANCE™ Marking

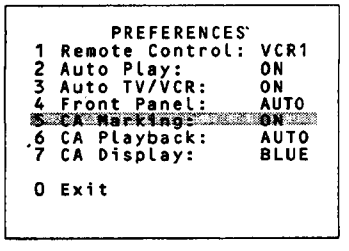
Press STOP to cancel commercial marking.

To Turn Off Marking

For special VCR use (such as editing or copying) or if you decide not to use this feature, turn COMMERCIAL▸▸ADVANCE™ marking (CA Marking) off.

1. Press MENU•PROG to display the VCR MAIN MENU.
2. Press 6 to display the PREFERENCES menu.
3. Press 5 to select CA Marking: OFF.

   The VCR will not mark the commercials.

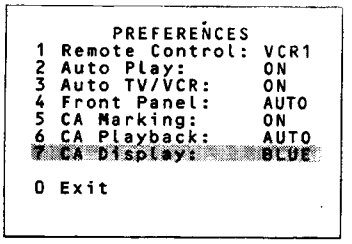


COMMERCIAL▸▸ADVANCE™ is a trademark of Arthur D. Little Enterprises, Inc.
A Jerry Iggulden invention licensed by Arthur D. Little Enterprises, Inc.

Recording and Playback

To Select a Background for Playback

1. Press MENU•PROG to display the VCR MAIN MENU.
2. Press 6 to display the PREFERENCES menu.
3. Press 7 to select CA Display: BLUE or VIDEO.
   - Select BLUE to have the VCR display a blue screen while it advances through the block of marked commercials.
   - Select VIDEO to have the VCR display the video as it advances through the block of marked commercials.



To Play Back a Recording Made Using COMMERCIAL▸▸ADVANCE™

1. Press MENU•PROG to display the VCR MAIN MENU.
2. Press 6 to display the PREFERENCES menu.
3. Press 6 to select CA Playback: AUTO or MANUAL.
   - Select AUTO to have the VCR automatically advance through the blocks of marked commercials.

     It works with most 30, 45, and 60-second commercials.

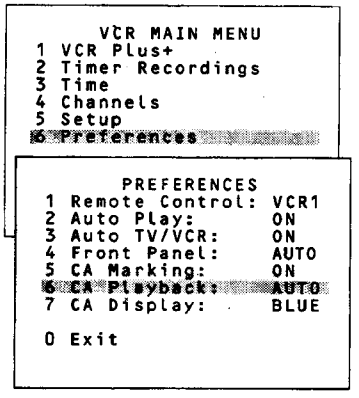
     A commercial group starting within the first two minutes or last two minutes of a recording will not be automatically skipped.

     A commercial will not be skipped if the recording starts in the middle of a commercial segment, one isolated commercial is shown without others, or a commercial is longer than one minute. Press FF to scan through the commercial.

     It is possible that part of a recorded program might be skipped if the program segment is between commercials and less than one minute or there are frequent dark and quiet scenes. If part of the program is skipped, rewind the tape to the beginning of the skipped program segment and press PLAY.
   - Select MANUAL and the VCR will not advance through the blocks of marked commercials until you press SEARCH.

   The VCR will resume playback when it reaches the end of the marked commercials.

   If you press SEARCH during playback of material other than commercials, the VCR will still advance to the end of the next "marked" commercial block and resume playback.



Types of Recordings

Your VCR provides different types of recording. These types are explained in the following sections:

Basic Recording – Operating Instructions

Recording While You're Away

VCR Plus+ Recording

Timer Recording

Express (XPR) Recording

Recording Broadcast Stereo TV or SAP (Second Audio Program)

Recording Audio Only

Using Two VCRs for Copying Tapes

Using the Recording Features

Recording Speeds

Press SPEED on the remote to select a recording speed (SP, LP, or SLP). The speed you select appears on the TV screen and in the VCR's display panel. The VCR automatically selects the playback speed (SP, LP, or SLP).

Cassette Type	Recording Time		
	SP	LP	SLP
T120	2Hr	4Hr	6Hr
T160	2Hr 40Min	5Hr 20Min	8Hr

SP (Standard Play) gives the best quality recording. That is why most prerecorded, rental tapes are recorded in SP. Fewer programs can be recorded on the tape. Special effects such as pause, slow motion, picture search, and frame advance work well.

LP (Long Play) gives twice the recording time of tapes recorded in SP. Special effects in playback are not recommended in LP.

SLP (Super Long Play) gives three times the recording time of tapes recorded in SP. Special effects such as pause, slow motion, picture search, and frame advance work well.

Recording Pause

This feature allows you to prevent recording short passages of unwanted material.

Press PAUSE during recording to stop and start recording. REC P appears in the VCR's display panel.

The VCR will automatically switch from pause to stop after a few minutes.

Basic Recording – Operating Instructions

To Make a Recording

Turn on the TV and tune it to the VCR viewing channel, either 3, 4, or TV's video input channel.

1. Insert a tape with safety tab in place.

   The cassette-in indicator (⊡) lights in the VCR's display panel.

2. Press VCR1 (VCR2•DVD) to set remote to control VCR.
3. If using one of the basic hookups, make sure the VCR indicator appears in the VCR's display panel. If not, press TV•VCR to turn it on.
4. Select recording speed using SPEED on the remote.

   The tape speed indicator appears in the VCR's display panel and on the TV screen.

5. Select the channel to be recorded.

   The channel number appears in the VCR's display panel and on the TV screen.

6. Press RECORD on the VCR or REC on the remote to begin recording. REC appears in the VCR's display panel while the VCR is recording.

Watch a TV Channel While VCR is Recording a Different Channel

1. Follow steps 1 through 6 above.
2. If using one of the basic hookups, press TV•VCR to switch to the TV channel. The VCR indicator will turn off in the display panel.
3. Press TV to set the remote to control TV functions for a compatible TV.
4. Select the channel you want to watch with the TV's channel buttons.
5. Press STOP when recording is finished.

Recording While You're Away (VCR Plus+* Recording)

VCR Plus+ Setup for Antenna or Unscrambled Cable Systems (Not Requiring a Cable Box)

A VCR Plus+ channel number is assigned for each broadcast or cable channel. These numbers are listed in most publications that list PlusCode* numbers.

1. Prepare the worksheet on the opposing page for the VCR Plus+ channels that are different than the channels you receive them on. Refer to the chart below for standardized VCR Plus+ channel numbers.

Broadcast or Cable-TV Station Name	VCR Plus+ Channel Number	Channel Number You Receive This Station On
HBO	33	See Note 1
ESPN	34	See Note 1
ABC	See Note 2	See Note 1
FOX	See Note 2	See Note 1

SAMPLE

Note 1: Check your local or cable listing for the channel number you receive this station on.

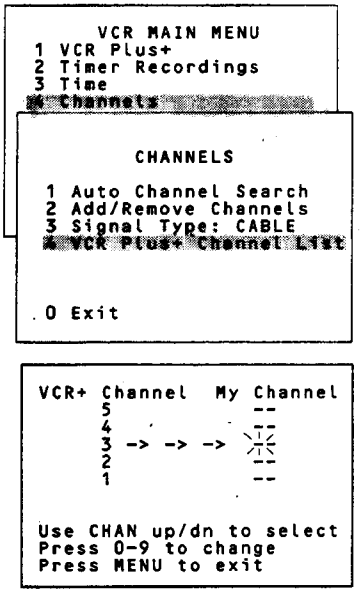
Note 2: Check your local listing for the broadcast or VCR Plus+ channel number assigned to this station.

2. Press MENU•PROG on the remote to display the VCR MAIN MENU on the TV screen.
3. Press 4 to display CHANNELS menu.
4. Press 4 to display VCR Plus+ Channel List menu.
5. Using your worksheet, press two numbers to enter each channel number you receive on a **different** channel than the assigned VCR Plus+ channel number.

   Press CHAN up or down to move the numbers up or down on the menu.

   Press CLEAR on the remote to erase a number.
6. Press MENU•PROG when you are finished.

   Auto channel search must be performed before setting the VCR Plus+ channel list.



Standardized VCR Plus+ Channel Numbers for Cable-TV

U.S.A. List

35	American Movie Classics
39	Arts & Entertainment
57	Black Entertainment
54	Bravo
42	Cable News Network
45	Cinemax
98	Cinemax 2
37	The Discovery Channel
53	The Disney Channel
63	Entertainment Television
34	ESPN Sports Network
47	The Family Channel
33	Home Box Office
95	Home Box Office 2
96	Home Box Office 3
51	The Learning Channel
46	Lifetime
58	The Movie Channel
48	Music Television
49	The Nashville Network
38	Nickelodeon
64	Nostalgia Television
99	Quality Value Cable
41	Showtime
97	Showtime 2
59	Sports Channel
52	Turner Network Television
44	USA Network
62	Video Hits 1
93	Viewer's Choice 1
94	Viewer's Choice 2
55	WGN Chicago
43	WTBS Atlanta
60	WWOR New York

Canadian List

67	Allarcom Pay Television/Superchannel
44	Arts & Entertainment
72	Cable News Network-Headline News
61	Cable News Network
70	Canadian Home Shopping Network
56	Canal Famille
69	Cathay International Television Inc
68	Chinavision Canada Corp
60	Country Music Television
63	Family Channel
62	First Choice
96	First Choice Two
97	First Choice Three
99	First Choice Four
90	House of Commons
91	La Chaine Francaise
51	The Learning Channel
65	MeteoMedia/The Weather Network
48	MuchMusic Network
55	MusiquePlus
52	Nashville Network
73	Newsworld/CBC
53	Le Reseau des Sports
43	The Sports Network
64	Super Ecran
37	Super Ecran B
98	Super Ecran C
66	Telatino Network
46	TV5 Montreal
92	Viewer's Choice 1
93	Viewer's Choice 2
94	Viewer's Choice 3
95	Viewer's Choice 4
71	Vision TV: Canada's Faith Network
38	Youth TV, Canada Inc

*VCR Plus+ and PlusCode are trademarks of Gemstar Development Corporation.

VCR Plus+™ Channel Worksheet

Use this worksheet to create a list from which you can set up your VCR Plus+ channel list.

Broadcast or Cable TV Station Name (Such as ABC, NBC, CBS, etc.)	VCR Plus+ Channel Number* (See Standardized VCR Plus+ Channel Chart)	Channel Number You Receive This Station On**

*Check your local listing for VCR Plus+ channel numbers assigned to network stations.
**Check your local or cable listing for the channel numbers to enter in this column.

Recording While You're Away (VCR Plus+ Recording)

The VCR Plus+ and timer program features let you program the VCR to record up to eight different programs within a one year period. Before using VCR Plus+ to record a program, make sure that:

- The clock is set correctly.
- A tape with safety tab has been inserted with enough tape to record the programs.
- The remote is set to control the VCR — using VCR1 (VCR2•DVD).
- The VCR is setup for VCR Plus+ programming.
  - If you do not use a cable box for all channels, complete VCR Plus+ setup *on page 34.*

Setting a VCR Plus+ Recording

1. Press MENU•PROG on the remote to display the VCR MAIN MENU on the TV screen.
2. Press 1 to display the VCR PLUS+ menu.
3. Press numbers on the remote to enter the PlusCode number for the program you want to record. PlusCode numbers are found in most local TV listings.

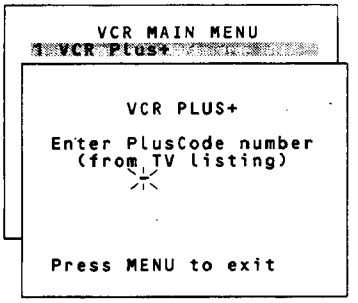
   Press CLEAR on the remote to correct an entry.
4. Press MENU•PROG to enter the program.

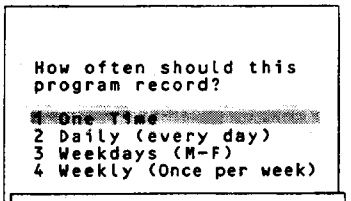
   If the VCR does not recognize the PlusCode number, Unrecognized number... Please re-enter appears on the TV screen. Check the number and enter it again.
5. Press 1, 2, 3, or 4 to select type of program.
   - 1 One Time – single program recorded once.
   - 2 Daily – program recorded at same time every day.
   - 3 Weekdays – program recorded at same time Monday through Friday.
   - 4 Weekly – program recorded at same time once a week.
6. Select recording speed using SPEED on the remote.
7. Press CLEAR if you want to change the program end time.

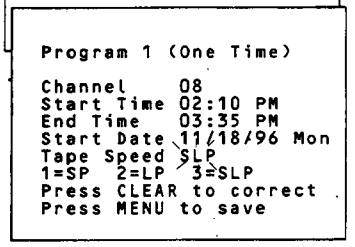
   This feature allows you to extend the recording time on VCR Plus+ programs. This option may be useful when recording programs such as sporting events that could go past scheduled broadcast times.
8. Press MENU•PROG to enter your program. A reminder appears which will time out.

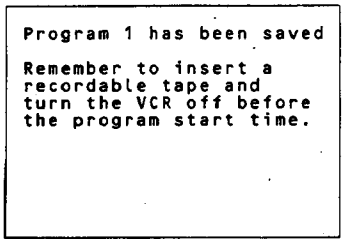
   PROGRAMS OVERLAP may appear on the screen if you entered two programs where the times overlap.
9. The TIMER RECORDINGS menu appears. Press 3 to enter an additional VCR Plus+ program, or press 0 to exit.
10. **Turn off the VCR** before recording time.

    TIMER appears in the VCR's display panel when the timer has been programmed.
11. If using a cable box, leave it turned on and tuned to the channel you want to record.









Stopping a Recording in Progress

With the VCR: Press POWER and then STOP within a few seconds.

With the Remote: Press VCR1 (VCR2•DVD) and then STOP within a few seconds.

Note: Timer programs will not be erased during power outages. To clear a program *see page 38.*

Recording While You're Away (Timer Recording)

The VCR Plus+ and timer program features let you program the VCR to record up to eight different programs within a one year period. Before setting the timer, make sure that:

- The clock is set correctly.
- A tape with safety tab has been inserted with enough tape to record the programs.
- The remote is set to control the VCR — using VCR1 (VCR2•DVD).

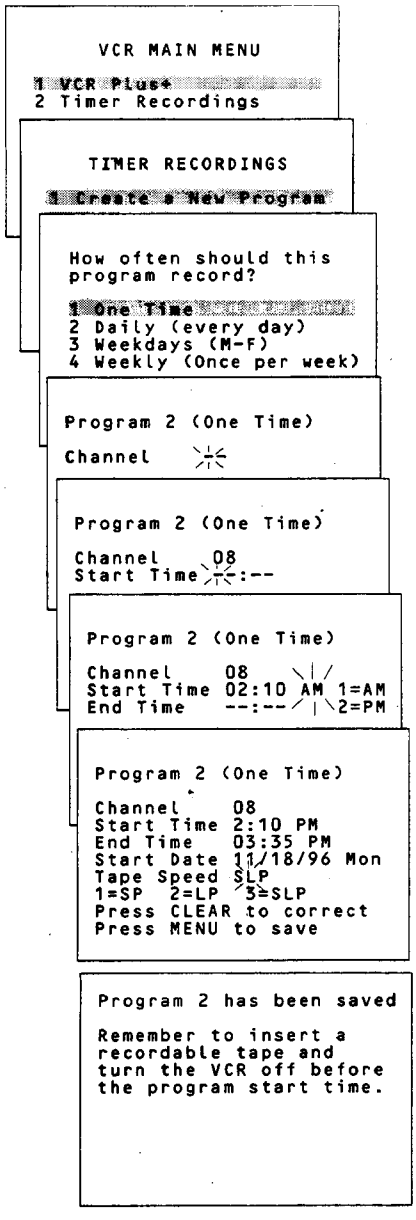
Setting a Timer Recording

1. Press MENU•PROG on remote to display VCR MAIN MENU.
2. Press 2 to display TIMER RECORDINGS menu.
3. Press 1 to display Create a New Program menu.
4. Press 1, 2, 3, or 4 to select type of program.
   - 1 One Time — single program recorded once.
   - 2 Daily — program recorded at same time every day.
   - 3 Weekdays — program recorded at same time Monday through Friday.
   - 4 Weekly — program recorded at same time once a week.
5. Press number buttons on the remote to enter the channel number (INPUT to select one of the video inputs), start time including AM or PM, end time, and start date of the recording. Just follow the on-screen prompts.

   Press CLEAR to correct an entry.
6. Select recording speed using SPEED on the remote.
7. Press MENU•PROG to enter your program. A reminder appears which will time out or you can press MENU•PROG to return to the VCR MAIN MENU.

   PROGRAMS OVERLAP may appear on the screen if you have entered two programs where the times overlap.
8. The TIMER RECORDINGS menu appears. Press 1 to enter an additional timer program, or press 0 to exit.
9. **Turn off the VCR** before recording begins.

   TIMER appears in the VCR's display panel when the timer has been programmed.
10. If using a cable box, leave it turned on and tuned to the channel you want to record.



Stopping a Recording in Progress

With the VCR: Press POWER and then STOP within a few seconds.

With the Remote: Press VCR1 (VCR2•DVD) and then STOP within a few seconds.

Note: Timer programs will not be erased during power outages. To clear a program *see page 38.*

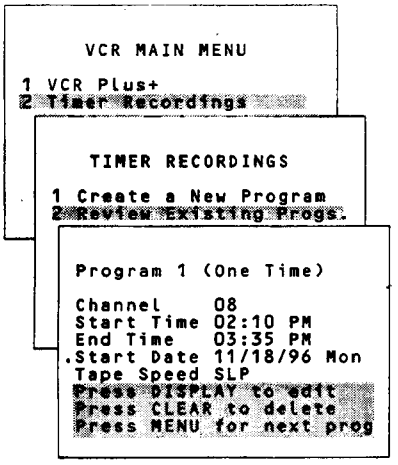
Recording While You're Away

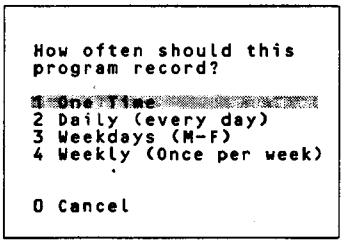
Check, Edit, or Clear a VCR Plus+ or Timer Recording

1. Press MENU•PROG on remote to display VCR MAIN MENU on TV screen.
2. Press 2 to display the TIMER RECORDINGS menu.
3. Press 2 for Review Existing Progs. feature.

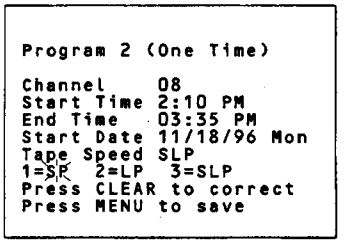
   The first program in the timer is displayed.

   - **Check the Programs:** Press MENU•PROG to display information for the next program.
   - **Edit the Program:** Press DISPLAY to edit the program. The frequency menu appears first so you can change how often you want to record the program.





Press a number button to select the type of program you want to record.



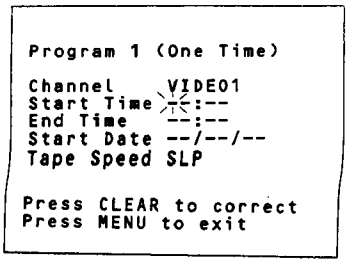
Edit the rest of the program using the CLEAR and number buttons.

- **Clear the Program:** Press CLEAR when the program appears.

Timer Recording From the VCR's Line Input

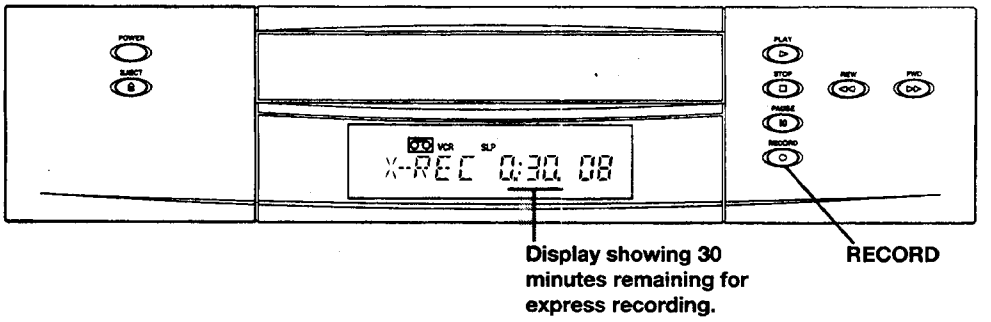
The line input refers to the signal coming from the AUDIO and VIDEO IN jacks of the VCR. Recording from the line input is convenient if you have a satellite receiver or similar component attached to these jacks. To timer record from the component connected to the VCR's line input:

Press *INPUT* to enter *VIDEO1* in place of the channel number to record from the jacks on the back of the VCR or VIDEO2 to record from the jacks on the front of the VCR.



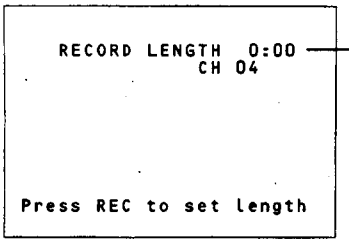
Express Recording (XPR)

Express recording lets you record up to four hours without using the timer program feature. The VCR will turn off automatically at the end of the recording.



Operating Instructions

1. Turn on the VCR.
2. Insert a tape with safety tab in place.
3. Select the channel you want to record.
4. Select the desired recording speed using SPEED on the remote.
5. Press RECORD once on the VCR or REC once on the remote to activate normal recording.
6. Press RECORD twice on the VCR or REC twice on the remote to activate express recording.
7. Repeatedly press RECORD on the VCR or REC on the remote until the amount of recording time for the program is displayed in the VCR's display panel or on the TV screen.



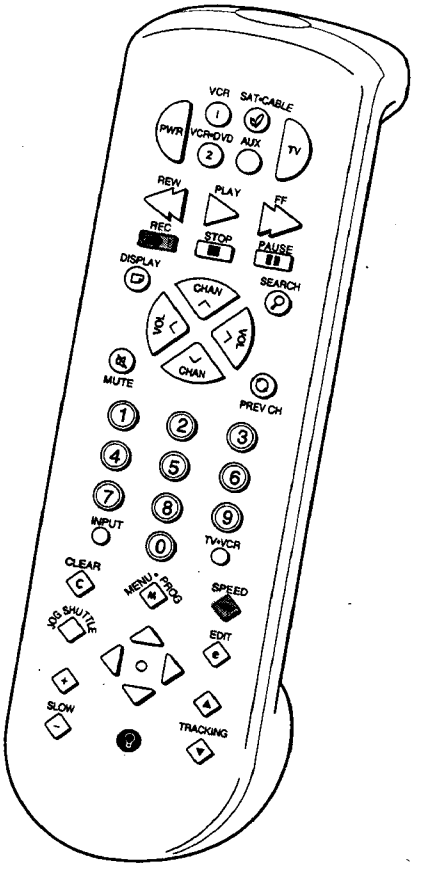
Express Display on TV Screen

Press RECORD	Recording Time
0:30	(30 Min)
1:00	(1 Hr)
1:30	(1 Hr, 30 Min)
2:00	(2 Hrs)
3:00	(3 Hrs)
4:00	(4 Hrs)
	(Normal Recording)
0:00	(Stops)

Each press increases the time — 30 minutes up to four hours.

The amount of time the VCR will record and X- REC will appear in the VCR's display panel.

You can increase the amount of recording time by pressing REC on the remote or RECORD on the VCR.



Stopping a Recording in Progress

With the VCR: Press POWER and then STOP within a few seconds.

With the Remote: Press VCR1 (VCR2•DVD) and then STOP within a few seconds.

Recording Broadcast Stereo TV or SAP (Second Audio Program)

Some TV programs are broadcast with stereo audio or a second audio language (SAP). The Reception: STEREO/MONO/SAP feature lets you select the type of audio you want to record.

To Record Stereo Broadcast TV or SAP

Turn on the TV and tune it to the VCR viewing channel, either 3, 4, or TV's video input.

1. Insert a tape with safety tab in place.
2. If using one of the basic hookups, make sure the VCR indicator appears in the VCR's display panel. If not, press TV•VCR to turn it on.
3. Use SPEED on the remote to select a recording speed.

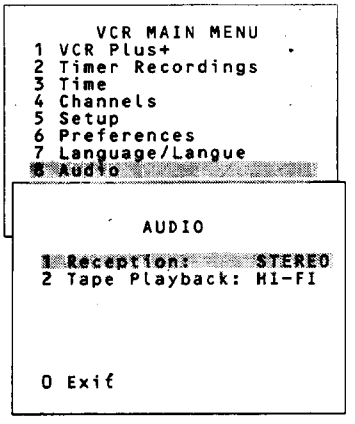
   The tape speed indicator appears in the VCR's display panel and on the TV screen.
4. Select the channel or line input to be recorded.

   The channel number or VIDEO appears on the TV screen.
5. Set the Reception: STEREO/MONO/SAP feature for the type of audio you want to record.
   A. Press MENU•PROG to display the VCR MAIN MENU on the TV screen.
   B. Press 8 to display the AUDIO menu.
   C. Press 1 to select the type of audio Reception: STEREO, MONO, or SAP.
      - Set to STEREO for normal recording and to record broadcast stereo TV.

        The STEREO indicator lights in the VCR's display panel when the station you are tuned to is broadcasting stereo.
      - Set to MONO if the stereo signal is weak and the sound is too "noisy".
      - Set to SAP to record SAP (second audio program) instead of the main audio on the linear track. The main (or normal) audio will still be recorded on the hi-fi tracks.

        The SAP indicator (■) lights in the VCR's display panel.

        Set the Tape Playback: HI-FI/LINEAR/MIX feature to LINEAR to hear SAP. *Details are on page 23.*
   D. Repeatedly press 0 to remove the menus from the TV screen.
6. Press REC on remote or RECORD on the VCR to start recording. REC appears in the VCR's display panel.
7. Press STOP when you are finished.



Recording Audio Only

You can record audio only from another audio source connected to the AUDIO IN (L MONO and R) jacks on the back or front of the VCR. Any video on the tape will be erased when you record audio only.

To Record Audio Only

1. Press the INPUT button to select a line input.

   Press INPUT once to record from the back AUDIO IN jacks. L1 appears in the VCR's display panel.

   Press INPUT twice to record from the front AUDIO IN jacks. L2 appears in the VCR's display panel and VIDEO2 appears on the TV screen.

   The VCR will record audio from the audio equipment connected to the AUDIO IN jacks.

2. Use SPEED on the remote to select the recording speed.

   The tape speed indicator appears in the VCR's display panel and on the TV screen.

3. Make sure the Reception: STEREO/MONO/SAP feature is set to STEREO.

   A. Press MENU•PROG to display the VCR MAIN MENU on the TV screen.

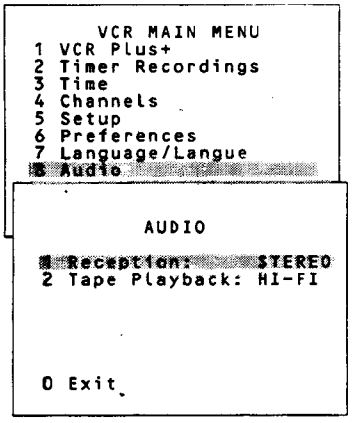
   B. Press 8 to display the AUDIO menu.

   C. Press 1 to select Reception: STEREO.

4. Start audio source playing and press REC on remote or RECORD on the VCR to begin recording.

   REC appears in the VCR's display panel.

5. Press STOP when you are finished.



Recording Audio Only

You can record audio only from another audio source connected to the AUDIO IN (L MONO and R) jacks on the back or front of the VCR. Any video on the tape will be erased when you record audio only.

Using Two VCRs for Copying and Editing Tapes

Operating Instructions *(Refer to hookup on page 8.)*

Use this VCR as the playback VCR and the other as the recording VCR. If you have two compatible VCR's, use the AutoEdit feature *described below.*

Caution: The unauthorized recording of television programs and other materials may infringe the rights of others.

1. Turn on the TV and VCRs.
2. Tune TV to the VCR viewing channel, either 3, 4, or TV's video input.
3. If you have connected your VCR using Option A *(page 8)*, tune recording VCR to channel 3 or 4 — the one selected on the back of the playback VCR.

   If you have connected your VCR using Option B *(page 8)*, press INPUT on recording VCR to select the line input. Select L1 to record from the jacks on the back or L2 to record from the jacks on the front.
4. Insert the tape you want to copy into playback VCR. Insert a blank tape with safety tab in place into recording VCR.

   To prevent recording on-screen displays from the playback VCR, press DISPLAY four times. *See page 28 for details.*
5. Press PLAY, then PAUSE on playback VCR when you reach the point on the tape or program where you want to begin copying. If the tape was not recorded on the playback VCR, streaks may appear and you may need to adjust tracking.
6. Press RECORD, then PAUSE, on recording VCR.
7. Press PAUSE buttons on both VCRs at the same time to begin copying the tape.*
8. Edit out segments that you do not want to copy by pressing PAUSE on recording VCR to stop copying the tape. Then locate the next segment you want to copy on the playback VCR by using FWD, REW, and PLAY. Press PAUSE on the playback VCR. Press PAUSE **at the same time** on both VCRs to resume copying.
9. Press STOP on both VCRs when you are finished.

* You may turn off the TV after the recording has started as it does not have to be on to copy a tape.

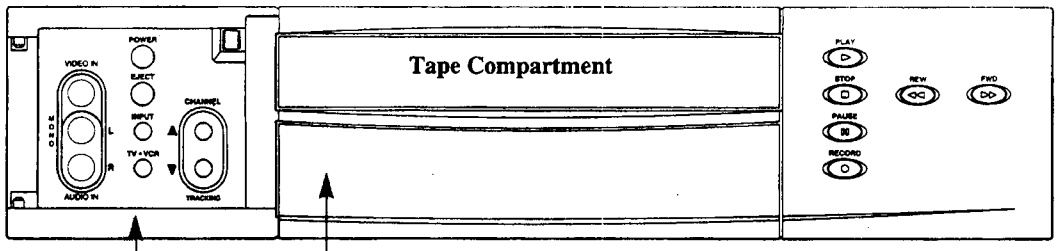
Using Dual Remote with AutoEdit™

Use this VCR as the playback VCR and set it to respond to VCR2•DVD on the remote *as described on page 18*. Use your other compatible VCR as the recording VCR, which should respond to VCR1.

1. Follow steps 1 – 4 in the "Operating Instructions" above.
2. Press VCR1 on remote to control recording VCR. Press RECORD, then PAUSE, to put recording VCR in pause mode.
3. Press VCR2•DVD on remote to control playback VCR.
4. Use FF, REW, and PLAY to locate the point where you want to begin copying. Press PAUSE while VCR is playing to put playback VCR in pause mode.
5. Press EDIT on remote to start the VCRs copying.
6. Press EDIT again when you want to stop the tape from copying.
7. Repeat steps 4 – 6 as needed.
8. Press VCR1, STOP, then VCR2•DVD, STOP, when you are finished.

Location of Controls

Front Panel



AUDIO (L•MONO and R) and VIDEO IN Jacks
Receives audio and video signals from another component, like a VCR or camcorder when it is connected to these jacks.
Attach a component that is not stereo to the L•MONO jack to hear sound on both channels.
Select L2 to record from these jacks.

CHANNEL/TRACKING Up or Down
Selects next higher or lower channel in the VCR's channel memory.
Adjusts tracking when a tape is playing.

EJECT
Press when the VCR is stopped to eject the cassette.

FWD (Fast Forward)
Fast forwards the tape when the VCR is stopped.

Searches the picture forward during playback.

INPUT
Turns the line input on or off. L1 or L2 appears in VCR's display panel and VIDEO1 or VIDEO2 appears on the TV screen.

Line input refers to the signal coming from the component connected to the audio/video input jacks on the back (L1) or front (L2) of the VCR.

PAUSE
Pauses action for viewing during playback.
Pauses recording to prevent recording of unwanted scenes.

PLAY
Plays a tape.

POWER
Turns the VCR on or off.

RECORD
Starts VCR recording.
Used for express recording (XPR).

Remote Sensor
Receives signals from the remote control. Aim the remote at this sensor with no objects between them.

REW (Rewind)
Rewinds the tape when the VCR is stopped.

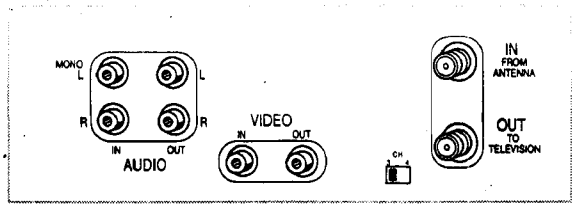
Searches the picture in reverse during playback.

STOP
Stops the normal functions such as record, playback, rewind, fast-forward, or pause.

TV•VCR
Switches the picture signal so that it either comes from the VCR or the TV channel.
See page 14.

Location of Controls

Back Panel



CH3 CH4 Switch
Selects the channel to which you will tune the TV to see the VCR picture if you connect the VCR using one of the basic hookups.

IN FROM ANTENNA Connector
Receives the signal from an antenna, cable system, or satellite receiver that is attached to this connector.

OUT TO TELEVISION Connector
Passes signal to TV using the cable supplied.

VIDEO and AUDIO (R and L MONO) IN Jacks
Receives signals from another component, like a VCR or camcorder, when it is connected to these jacks. Use INPUT to select L1 in the VCR's display panel.

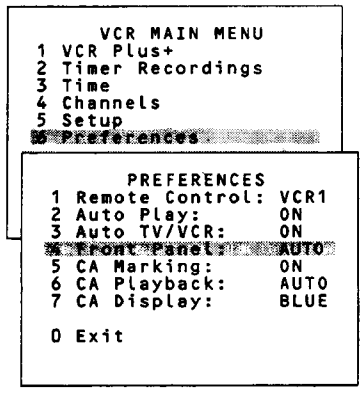
Attach a component that is not stereo to the L MONO jack to hear sound on both channels.

VIDEO and AUDIO (R and L) OUT Jacks
Sends signals from VCR to another component, like a TV monitor or VCR, when it is connected to these jacks.

Display Panel

This VCR has a feature where you can change the brightness level of the fluorescent display panel.

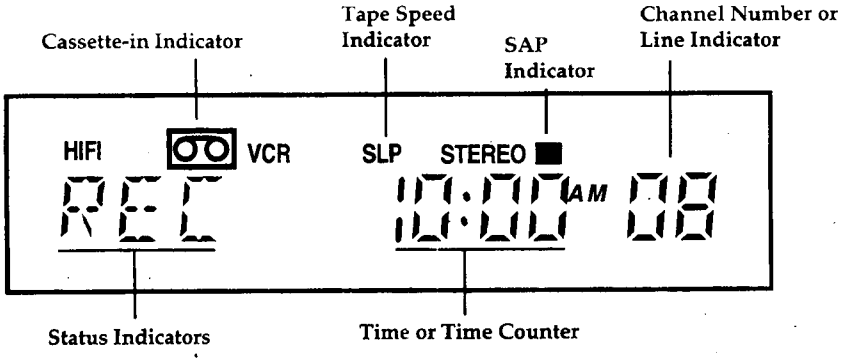
1. Press MENU•PROG on the remote to see the VCR MAIN MENU on the TV screen.
2. Press 6 to display the PREFERENCES menu.
3. Press 4 to select Front Panel: AUTO, BRIGHT, or DIM.
   - Select AUTO to keep the display panel bright when VCR is on and dim when it is off.
   - Select BRIGHT to keep the display panel bright.
   - Select DIM to keep the display panel dim.



continued on next page

Location of Controls

Display Panel (continued)



Cassette-in Indicator (📼)
Lights when a tape is in the VCR.

Channel Number, L1, or L2
The channel number or line input is displayed.
Select L1 to record from the jacks on the back of the VCR or L2 to record from the jacks on the front of the VCR.

HIFI Indicator

Lights during hi-fi playback when Tape Playback: HI-FI/LINEAR/MIX feature is set to HI-FI.

SAP Indicator (■)

Lights when the Reception: STEREO/MONO/SAP feature is set to SAP.

Status Indicators
Show what the VCR is doing.

COMM /MARK	CA marking in progress
EJECT	Ejecting Tape
FFWD	Fast forward
HELLO	Turned on
MARK 30	Marking process countdown
PLAY	Playback
REC	Record
REC P	Record pause
REW	Rewind
SRCH +	Forward search
SRCH –	Reverse search
SLOW +	Slow motion
STILL	Frame advance
STILL	Play pause
STOP	VCR stopped
TAPE flashes	Set for timer – no tape
TIMER	Timer recording set
X-REC	Express recording in progress

STEREO Indicator

Lights when the station you are tuned to is broadcasting stereo.

Tape Speed Indicators (SP, LP, or SLP)
Press SPEED to change.

Time or Time Counter
Press DISPLAY to switch between the current time and time counter.

VCR Indicator (Applies Only to Basic Hookups)
Press TV•VCR to turn on or off.
VCR indicator on: Picture from VCR.
VCR indicator off: Picture from TV channel.

Specifications

Format:	VHS
Record/Playback System:	Video: 4-Head Audio: 2 Hi-Fi record/playback system
Video Signal System:	EIA standard: NTSC color
Antenna:	75-ohm external VHF/UHF combined antenna terminal
Tuner:	USA: 181 channels capability* (125 cable channels) Canada: 178 channels capability* (122 cable channels)
Type:	Autoprogramming frequency synthesis
Power Requirement:	120V AC, 60 Hz
Power Consumption:	22 watts
Dimensions:	3.5 inches high (90 mm) 15.5 inches wide (393 mm) 12.5 inches deep (318 mm)
Weight:	9.5 pounds (4.3 kg)
Storage Temperature Range:	- 22°F (- 30°C) to +149°F (+65°C)
Operating Temperature Range:	+41°F (+5°C) to +104°F (+40°C)

*Check your cable company's compatibility requirements.

Cleaning the VCR

Use a soft cloth or dusting attachment of your vacuum cleaner to dust your VCR. Remove dust from the ventilation holes on the top, back, sides, and bottom of the cabinet.

Plastic surfaces are easily scratched and can be marred by alcohol and various solvents. Avoid excessive use of oil-based furniture polishes since the materials used in the cabinet will accumulate more dust. We recommend using a non-abrasive, anti-static cleaner and polisher.

Limited Warranty

What your warranty covers:

- Any defect in material or workmanship.

For how long after your purchase:

- Ninety days for labor charges.
- One year for parts.

  The warranty period for rental units begins with the first rental or 45 days from the date of shipment to the rental firm, whichever comes first.

What we will do:

- Pay any Authorized RCA VCR Servicenter the labor charges to repair your VCR.
- Pay any Authorized RCA VCR Servicenter for the new or, at our option, refurbished replacement parts required to repair your VCR.

How you get service:

- Take your VCR to any Authorized RCA VCR Servicenter. To identify your nearest Authorized RCA VCR Servicenter, ask your dealer, look in the Yellow Pages, or call 1-800-336-1900.
- Show the service technician your evidence of purchase date.
- Pick up your VCR when repairs are completed.

What your warranty does not cover:

- Customer instruction. (Your Owner's Manual clearly describes how to install, adjust, and operate your VCR. Any additional information should be obtained from your Dealer.)
- Installation and related adjustments.
- Signal reception problems not caused by your VCR.
- Damage from misuse or neglect.
- Cleaning of video/audio heads.
- Remote control batteries.
- A VCR that has been modified or incorporated into other products or is used for institutional or other commercial purposes.
- A VCR purchased or serviced outside the USA.
- Acts of God, such as but not limited to lightning damage.

Product Registration:

- Please complete and mail the Product Registration Card packed with your VCR. It will make it easier to contact you should it ever be necessary. The return of the card is not required for warranty coverage.

How state law relates to this warranty:

- This warranty gives you specific legal rights, and you also may have other rights that vary from state to state.

If you purchased your VCR outside the United States:

- This warranty does not apply. Contact your dealer for warranty

Trouble Checks

Sometimes problems can be easily solved by checking a few basic things. Check below before you call for help or take your VCR to an Authorized RCA VCR Servicenter.

Trouble	Here's what to try:
No power	• Plug VCR into an operating outlet. • Check connections.
Clock shows incorrect time or date	• Make sure time zone and daylight savings information is entered correctly. *See page 11.* • If auto clock set is off by a few minutes, station may be sending inaccurate time information. • Clock was not set accurately (check AM/PM and date). • Time counter display appears in display panel. Press DISPLAY on remote.
VCR does not respond to remote	• Press VCR1 (VCR2•DVD) to set remote to control the VCR. *See page 18.* • VCR2•DVD button may be set to control a DVD. *See page 18* to change back to VCR2. • Aim remote at VCR with no objects between them. • Change batteries.
Remote no longer controls an RCA TV	• Press TV to set remote to control the corresponding compatible TV. *See page 19.* • Reprogram remote for RCA TV. *See page 19.* • Aim remote at TV with no objects between them. • Change batteries. • Remove batteries and hold down one or more buttons for several seconds to drain the microprocessor inside the remote to reset it. Reinstall the batteries and try remote again.
Remote no longer controls a compatible TV, cable box, satellite receiver, or auxiliary component	• Press TV, AUX, VCR2•DVD or SAT•CABLE to set remote to control a compatible component. *See pages 18-21.* • Aim remote at component with no objects between them. • Reprogram remote after batteries have been changed. • Reprogram remote to 000 to operate compatible RCA brand satellite receiver. • Change batteries. • Remove batteries and hold down one or more buttons for several seconds to drain the microprocessor inside the remote to reset it. Reinstall the batteries and try remote again.
VCR only responds to VCR2•DVD button on remote	• Check setting of Remote Control: VCR1/VCR2 feature. *See page 18.*
No picture when VCR turned on – using a basic hookup	• Press TV•VCR to turn VCR indicator on. *See page 14.* • Check to see if Auto TV/VCR feature is set to OFF. *See page 15.*
Poor or no picture for normal TV viewing	• Press TV•VCR to turn VCR indicator off. • Switch TV to an active channel. • Check antenna connections.
Snowy or no picture during playback	• Press TV•VCR to turn VCR indicator on. • Check TV channel selected (3 or 4) to make sure it matches the channel selected with CH3 CH4 switch on back of VCR. • Check TV's fine tuning. • Check video cable connections between VCR and TV monitor. • Set TV monitor to video input channel. • Try another tape. • Some snow/streaks are normal during search, frame advance, slow-motion, or stop-action playback.

Trouble Checks

Trouble	Here's what to try:
Time counter not working	• The time counter does not advance during unrecorded portions of tape. When an unrecorded segment of tape is encountered, the time counter will hold its count until recorded material is detected again. • A minus (–) will appear in front of the time if you rewind the tape farther back than a counter reading of 0:00:00.
Will not record or play	• No cassette in VCR. • Eject and re-insert cassette. • Broken tape — try another cassette.
Streaks in picture during normal playback	• Some snow/streaks are normal during search, frame advance, slow-motion, or stop-action playback.
Rewind does not operate	• Tape already rewound.
Will not record	• VCR is in pause mode. Press PAUSE. • Safety tab removed from cassette. • Make sure the line indicator (L1 or L2) is turned off in VCR's display panel for normal recording from the VCR's tuner. Press INPUT to turn off the line indicator.
VCR Plus+ or timer recording not made or wrong program recorded	• Wrong PlusCode number entered. • Cable box or satellite receiver was not turned on at time recording was to begin. • Program entered incorrectly (wrong channel or times). • Power interruption. Clock area in display panel will show - -:- -. • Check to see if time and date are correct — including AM/PM. • Program exceeded tape's length or tape was not rewound beforehand. • VCR was not turned off at the time recording was to start. • No tape in VCR or cassette's safety tab broken off.
VCR makes noise when stopped	• VCR is removing tape from heads. This is normal. The head cylinder inside the VCR will continue to rotate for a few minutes after you put the VCR in the stop mode.
VCR is paused during playback	• VCR is in pause mode. Press PAUSE or PLAY. • JOG SHUTTLE on remote is turned on. Press JOG SHUTTLE again to turn off JOG SHUTTLE.
Will not auto search active channels correctly	• Check antenna connections. • Check Signal Type: CABLE/ANTENNA feature. *See page 13.*
Cannot select channels over 69	• Cable channels over 69 can only be selected if Signal Type: CABLE/ANTENNA feature is set to CABLE. *Details are on page 13.*
Cassette with safety tab removed does not start to play automatically	• Set Auto Play ON/OFF feature to ON. *Details are on page 23.*
Remote control's backlighting does not stay on	• Press the remote buttons within a few seconds of each other or the light will turn off to conserve battery power. *Details are on page 16.*

(continued on next page)

Trouble Checks

Trouble	Here's what to try:
Stereo or SAP sound not recorded	• Reception: STEREO/MONO/SAP feature must be set to STEREO to record broadcast stereo. *See page 40.* • Reception: STEREO/MONO/SAP feature must be set to SAP to record SAP on the linear track. *See page 40.* • STEREO indicator not on. Station not broadcasting stereo or SAP.
No stereo sound during playback	• Tape Playback: HI-FI/LINEAR/MIX feature must be set to HI-FI to hear stereo sound during playback. *See page 23.* • Must use advanced hookups for stereo playback. *See pages 3-7.*
Stereo audio too noisy	• Stereo signal is weak. Set Reception: STEREO/MONO/SAP feature to MONO. • Press one of the TRACKING up or down buttons to minimize the noise.
VCR forwards through commercials or momentarily displays a blue screen during playback	• COMMERCIAL▸▸ADVANCE™ CA Playback feature set to AUTO. *See pages 30-31.*
VCR forwards through a rental or pre-recorded tape displaying a blue screen	• Some tapes use special control track marking. Set the COMMERCIAL▸▸ADVANCE™ CA Playback feature, in the Preferences menu to MANUAL.
COMMERCIAL▸▸ADVANCE™ feature does not mark commercials	The commercial advance feature does not mark commercials under the following situations: • CA Marking: ON/OFF feature set to OFF. *See page 31.* • Recording is less than 15 minutes. • A single isolated commercial cannot be marked. • Recording started in the middle of a commercial segment. • The commercial is longer than one minute. • A commercial group within the first or last two minutes of a recording. • It does not mark commercials between 30-and-45 seconds and 45-and-60 seconds. • Accuracy and effectiveness can vary depending upon program content and the characteristics of the commercials. • Effectiveness may vary when local television stations insert their own commercials.
Commercials recorded even though COMMERCIAL▸▸ADVANCE™ feature was turned on.	• COMMERCIAL▸▸ADVANCE™ is designed to record the commercials, mark them, and then skip over the marked commercials during playback.

Questions and Answers About COMMERCIAL▶▶ADVANCE™

Question	Answer
Will commercials be scanned through only on playback of recordings?	Yes. The VCR does not rewind and mark commercial segments until after recording is finished.
How fast does the COMMERCIAL▶▶ADVANCE™ VCR scan through the commercial breaks?	In SLP tape speed, a 3-minute commercial break is scanned through in approximately 8-12 seconds. In SP, it takes about 25-35 seconds.
Are commercials still recorded if I want to watch them?	Yes. The recorded program, including commercials, can be viewed by setting the CA Playback feature to MANUAL.
What if the VCR scans forward through part of my program?	Simply rewind the tape to just before the skipped segment, and press PLAY to view the program.
Once a recording has been marked, does COMMERCIAL▶▶ADVANCE™ work each time the tape is played?	Yes. If the CA Playback feature is set to AUTO, the marked commercials should be skipped each time the tape is played in a COMMERCIAL▶▶ADVANCE™ VCR.
After marking commercials, is the tape left at the beginning or end of the recording?	The tape is left at the end of the recording so it is in position to begin additional programmed recordings.
Does the marking process interfere with other programmed recordings?	No. If two or more recordings are programmed together without sufficient time to mark the first recording, marking will take place after all recordings have completed.
What happens if the marking process is interrupted?	Marking can be interrupted to allow use of the VCR. Marking will resume again when the VCR's power is turned off as long as the tape has not been ejected from the VCR.
Does COMMERCIAL▶▶ADVANCE™ work in all recording speeds?	Yes, COMMERCIAL▶▶ADVANCE™ works in SP, LP, and SLP.
Will COMMERCIAL▶▶ADVANCE™ marked recordings work in non-COMMERCIAL▶▶ADVANCE™ VCRs?	A COMMERCIAL▶▶ADVANCE™ marked recording will play in a non-COMMERCIAL▶▶ADVANCE™ VCR, but commercials will not automatically be skipped.

Index

— A —

Accessories, Included 9
Add or Remove Channels from Memory 13
ADD/REMOVE CHANNEL Menu 13
Antenna Connections 2,3
Arrow Buttons 10,16-17,25
Attaching Power Cord 9
AUDIO and VIDEO Jacks 3-6,18,23,38,41,44
Auto Channel Search Feature 11
Auto Clock Set Feature 11
Auto Play Feature 22,23
Auto TV/VCR Feature 15,22
AutoEdit Feature 42
Automatic Tracking 25
AUX (Auxiliary) Button 16,21

— B —

Back Panel 44
Basic Recording 33
Batteries, Inserting in Remote 9
Blank Search Feature 27
Brightness, Front Panel 44
Broadcast Stereo, Recording 40
BYE Indicator 45

— C —

Cable Box Codes 20
Cable Box Function Buttons on Remote 17
Cable System With Cable Box 2,3-5
Cable System Without Cable Box Connections 2,3
Card, Registration i
Cassette-In Indicator 22,33,45
CH3 CH4 Switch 3-8,10,13,44
CHAN and CHANNEL•TRACKING Buttons 13,16-17,34,43
Channel Number Indicator 45
CHANNELS Menu 13,34
Checking Timer and VCR Plus+ Programs 38
Checks, Trouble 48-50
Choisissez une Langue 14
Choosing a Hookup 2
Cleaning the VCR 46
CLEAR Button 16-17,26,27,29,34,36,37,38
Clearing Timer and VCR Plus+ Programs 38
Clock Set Manual 12
COMM/MARK Indicators 30,45
COMMERCIAL▶▶ADVANCE™ Feature 30-31,51
COMMERCIAL▶▶ADVANCE™ Questions and Answers 51
Connections
Antenna System 2,3
Cable System With Cable Box 2,4-5
Cable System Without Cable Box 2,3
Satellite System 6-7
Two VCRs for Tape Copying 8
Contents 1
Controlling a Cable Box or Satellite Receiver 20
Controlling a DVD Component 18
Controlling a LaserDisc Player 18
Controlling a TV 19
Controlling a VCR 18
Controlling an Auxiliary RCA Component 21
Copying and Editing Tapes 42
Copying Tape, Connections 8

— D —

Design Specifications 46
DISPLAY Button 16-17,28,29,42
Display Panel 44-45
Displays, Status 28

— E —

EDIT Button 16,42
Editing and Copying Tapes 42
Editing Timer Programs 38
EJECT Button 22,43
EJECT Indicator 45
Express Recording 39
Express Recording, Stopping 39

— F —

F—FWD Indicator 45
Fast Forward Search 25
FF and FWD (Fast Forward) Buttons 16,25,26,27,29,42,43
First-Time Operation 9-15
Frame Advance 25
Front Panel 43
Front Panel: AUTO/BRIGHT/DIM Feature 44
FWD and FF (Fast Forward) Buttons 16,24,26,27,29,42,43

— G —

Go-To Search Feature 27
GO-TO SEARCH Menu 27

— H —

HELLO Indicator 45
HIFI Indicator 40,45
Hookup, Choosing 2
Hookups
Antenna System 2,3
Cable System With Cable Box 2,4-5
Cable System Without Cable Box 2,3
Satellite System 6-7
Two VCRs for Tape Copying 8

— I —

IN FROM ANT (Antenna) Connector 3-8,44
Index Feature 26
INDEX SEARCH Menu 26
Information, Program 29
INPUT Button 16,36,38,41,42,43,44

— J —

JOG SHUTTLE Button 16,25

— L —

L1 and L2 Indicators 38,45
LANGUAGE Menu 14
Language, Selecting 14
LaserDisc Player, Controlling with Remote 18
Limited Warranty 47
Line Indicators (L1 and L2) 38,45
Line Input, Recording From 38
LP Speed 32

— M —

Manual Clock Set 12
Manual Tracking 25
MENU•PROG Button 10,11,12,13,16 18,23,30-31,34,36,37,38,40,41,44
Menu Navigation 10
MUTE Button 16-17

— N —

Number Buttons 10,16-17

— O —

On-Screen Displays 28
On-Screen Menu System 10
Operation
Audio Only Recording 41
Broadcast Stereo Recording 40
COMMERCIAL▶▶ADVANCE™ 30-31
Express (XPR) Recording 39
First Time 9-15
Playback 22
Playback Features 23-29
Recording 32-42
Recording Features 32
Remote Control 16-21
SAP Recording 40
Timer Recording 37

Index

VCR Plus+ Recording 34-36
OUT TO TV Connector 3-8,44

— P —

PAUSE Button 16-17,24,32,42,43
Pause for Stop Action 24
Pause, Recording 32
Picture Search 25
Play a Tape 22
PLAY Button 16-17,24,42,43
PLAY Indicator 45
Playback 22
Playback Sound, Selecting 23
POWER Button 22,36,37,39,43
Power Cord, Attaching 9
PREFERENCES Menu .15,18,23,30-31,44
PREV CH (Previous Channel) Button 16-17
Problems, Solving 48-50
Product Registration i
PROGRAM DETAILS Screen 28,29
Program Information 29
PWR (Power) Button ..16-17,18,19,20,21

— Q —

Questions and Answers About Commercial Advance 51

— R —

REC and RECORD Buttons 16-17,33,39,40,41,42,43,
REC Indicator 33,40,41,45
REC P Indicator 32,45
Reception: STEREO/MONO/SAP Feature 40
Recording
- Audio Only 41
- Basic 32
- Broadcast Stereo 40
- Express (XPR) 39
- Features 32
- From Video Input 38
- SAP 40
- Timer 37
- VCR Plus+ 34-36

Recording Audio Only 41
Recording, Basic 33
Registration Card i
Remote Batteries, Inserting 9
Remote Control: VCR1/VCR2 Feature 18
Remote Sensor 43
Remove or Add Channels from Memory 13
REMOVE/ADD Channel Menu 13
REW (Rewind) Button 16-17,22,25,26,27,29,43,45
Rewind Search 25

— S —

Safety Precautions i
SAP Indicator 40,45
SAP, Recording 40
Satellite Receiver Codes 20
Satellite Receiver Connections 6-7
SAT•CABLE Button 16,20
SEARCH Button 16-17,26-28
Select a Language 14
Sensor, Remote 43
SET DAYLIGHT SAVINGS Menu 11
SET TIME AND DATE Menu 12
SET TIME ZONE Menu 11
Setting a VCR Plus+ Recording 36
Setting Up the VCR 9-15
SETUP Menu 10,11,12,13
Signal Type: CABLE/ANTENNA Feature 13
SLOW + and - Buttons 16-17,25
SLOW Indicator 24,45
Slow Motion 24
SLP Speed 32
Solving Problems 48-50
SP Speed 32
Specifications 46
SPEED Button 16-17,32,33,36,37,39,40,41
Speeds, Recording 32
SRCH + and - Indicators 24,45
Standardized VCR Plus+ Channel Numbers for Cable-TV 34
Startup 9-15
Status Displays 28
Status Indicators 45
STEREO Indicator 40,45
Stereo TV, Recording 40
STILL Indicator 24,45
Stop Action Pause 24
STOP Button 16-17,22,27,29,33,36 37,39,40,41,42,43,45
Stopping a Timer Recording 37
Stopping a VCR Plus+ Recording 36
Stopping an Express Recording 39

— T —

Table of Contents 1
TAPE Indicator 45
Tape Playback: HI-I/LINEAR/MIX Feature 23
Tape Speed Indicators 45
Tape, Playing 22
Time Counter 29,45
Time Display 45
TIME Menu 12
TIMER Indicator 36,37,45
Timer Recording
- Checking 38
- Clearing 38
- Editing 38
- From Video Input 38
- Setting 37
- Stopping 37

TIMER RECORDINGS Menu ...36,37,38
TRACKING Up and Down Buttons 16-17,22,24
Tracking, Automatic and Manual 24
Trouble Checks 48-50
Turn on TV 10
Turn On VCR 10
TV Button 16,19
TV Codes 19
TV Function Buttons on Remote 17
TV, Turn On 10
TV•VCR Button 14,15,16-17,33,43
Types of Recordings 32

— U —

Using the VCR2•DVD Button 18

— V —

Variable Speed Picture Search 25
VCR Controls 43-45
VCR Function Buttons on Remote .16-17
VCR Indicator 14,15,22,33,45
VCR MAIN MENU 10,11,12,13,18 23,30-31,34,36-38,40,41
VCR PLUS+ Menu 36
VCR Plus+ Recording
- Channel List 34
- Checking 38
- Clearing 38
- Editing 38
- Codes 36
- From Video Input 38
- Setting 36
- Stopping 36
- Worksheet for Channels 35

VCR PlusCodes 36
VCR, Cleaning 46
VCR, Turn On 10
VCR1 and VCR2•DVD Buttons 10,12,13,14,16,18,36,37,39,42
VCRs Memory, Placing Channels 11
VCRs, Connecting for Tape Copying ..8
VOL (Volume) Up or Down Button 16-17

— W —

Warranty, Limited 47
Watch One Channel While Recording Another 33

— X —

X-REC Indicator 39,45
XPR Recording 39

For your nearest Authorized Servicenter
call toll-free in the U.S.A.

1-800-336-1900

Canadian Consumers –
Your toll free numbers are:

English: 1-800-522-0338
French: 1-800-522-0445

If your VCR needs service, please contact your dealer or the nearest Servicenter from the yellow pages. Please do not send any products to the Indianapolis address listed in this manual or on the carton. This will only add delays in service for your product.

THOMSON CONSUMER ELECTRONICS

10330 North Meridian Street
Indianapolis, IN 46290-1024

Contents of this publication are printed on recycled paper.

©1996 Thomson Consumer Electronics, Inc.
Trademark(s)® Registered
Marca(s) Registrada(s)
Printed in Singapore
Part Number 96-VR653HF-1R1

20587770SA