

# NEC

## VH-602

# User's Manual

### IMPORTANT

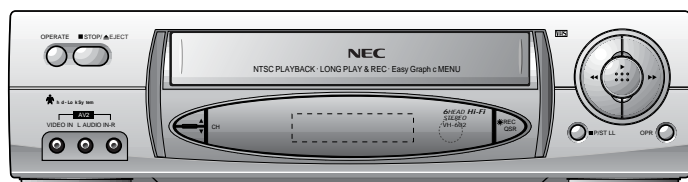
Please forward your warranty card to NEC Australia Pty Ltd.

This instruction manual is very important. Please read this manual carefully and completely before connecting, operating or adjusting the VCR in order to ensure the best performance. This instruction manual gives instructions on the effective use of your VCR. Please check this manual before you call for help, so you may save the cost of unnecessary service.



Only video cassettes marked "VHS" can be used with this video cassette recorder. VHS High Quality technology is incorporated into VCRs marked "HQ". This VCR is compatible with the conventional VHS.

### Video Cassette Recorder



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**WARNING:**

TO PREVENT FIRE OR ELECTRIC SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

**CAUTION:**

Dangerous voltage inside. Refer internal servicing to qualified service personnel. To prevent electric shock or fire hazard, remove the power cord from the AC outlet prior to connecting or disconnecting any signal lead or aerial.

Even if the VCR OPERATE button is turned off, parts of the unit are still connected to the mains.

**CAUTION:**

Disconnect the power cord from the AC outlet if you will not be using the VCR for a long period of time.

**CAUTION:**

TO AVOID RISK OF ELECTRIC SHOCK, DO NOT OPEN.

**NOTE:**

The rating plate is located at the rear of the unit.

**CAUTION:**

Young children and infirm persons should be supervised when using the appliance.

## Features

**CHILD LOCK**

Allows the user to set the VCR from the remote control, so that the front panel functions become inoperative, with the exception of the STOP/EJECT button.

**1-MONTH/7-EVENT PROGRAMMABLE TIMER WITH EVERY-DAY RECORDING**

The VCR can be programmed to record automatically up to seven TV shows in the coming month. There is also an every-day programme timer.

**Hi-Fi STEREO & BILINGUAL AUDIO SYSTEM (2-HEAD)**

Receives bilingual broadcasts and offers Hi-Fi stereo recording and playback with digital audio tracking.

**DOUBLE-AZIMUTH 4-HEAD SYSTEM**

Assures optimum playback and recording. Also the automatic head cleaning system protects the tape heads.

**MULTI-FUNCTION DISPLAY**

Shows the VCR status, such as play, record etc. on the Multi-Function Display.

**NTSC PLAYBACK ON PAL CTV**

Allows you to play NTSC video tapes from overseas on most brands of colour television receivers capable of resolving at 60 Hz video signal.

**LONG PLAY**

Enables tape to travel at half speed for doubling recording and playback time on your tapes.

**SKIP SEARCH**

Allows you to avoid unwanted part of programme quickly.

**SHUTTLE CONTROL**

Allows you to vary the speed of the tape from FAST REVIEW to FAST CUE.

**DIAGNOSTIC ADVISING SYSTEM**

Displays an operation error message if operation fault occurs during use.

**QUICK START RECORDING (QSR)**

Allows the VCR to be set to automatically stop recording and shut the power off.

**HQ (HIGH QUALITY) VIEW SYSTEM**

The "High Quality" circuit improves image sharpness and detail.

**FREQUENCY SYNTHESIZED TUNER WITH 80-CHANNEL MEMORY****AUTOMATIC FEATURES**

These features will function automatically as follows:

- The power of the VCR will turn on when a tape is inserted.
- The VCR starts playback when there is no safety tab on the cassette.
- The VCR starts rewinding when the tape reaches the end.

**REAL-TIME COUNTER**

Shows tape travel in hours, minutes and seconds.

**SPECIAL PLAYBACK FEATURES**

Equipped with advanced playback features, such as Fine Still, Frame Advance and Fixed Slow-motion.

**FULL-FUNCTION INFRARED REMOTE CONTROL AUTO HEAD CLEANING**


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**FRONT**


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**1 OPERATE BUTTON**

This button is used to turn the unit on and off. When this button is pressed to ON, the VCR indicator, channel position number and clock display will appear. When this button is pressed to OFF, the VCR indicator will disappear.

**NOTE:** To set the VCR for unattended recordings after timer settings have been completed. When the timer is programmed and OPERATE is turned off "TIMER" appears on the Multi-Function Display to indicate that the VCR is set for unattended recording and cannot be operated manually. (To return to manual operation, press the OPERATE button once. "TIMER" indicator goes off).

**2 STOP/EJECT BUTTON**

Press this button to stop or eject the tape.

**3 CASSETTE COMPARTMENT**

Insert a cassette in the compartment, loading will be completed automatically.

**NOTE:** Power is turned on automatically when the cassette is loaded. If the cassette is loaded without the safety tab in place, the video programme will play automatically (FULL AUTO PLAY).

**4 REWIND/REVIEW BUTTON**

Press to start rewind.

Press this button during playback to see reverse playback picture at high speed.

**5 PLAY BUTTON**

Press this button to playback recorded tapes.

**6 FAST FORWARD/CUE BUTTON**

Press to activate fast forward.

Press this button during playback to see forward playback picture at high speed.

**7 P/STILL BUTTON**

Press to stop recording and to eliminate commercial breaks or unwanted programme materials in RECORD mode.

Press to freeze the picture in PLAY mode.

**8 RECORD/QUICK START RECORDING BUTTON**

Press for recording or setting the QSR (Quick Start Recording).

**9 REMOTE SENSOR WINDOW**

To receive signals from the remote control unit.

**10 MULTI-FUNCTION DISPLAY**

The VCR's function will be displayed on the Multi-Function Display variously.

**11 CHANNEL BUTTONS (▲/▼)**

Used to move up or down through programme numbers.

**12 AUDIO IN JACKS (L/R)**

Use the audio input to record audio from an external audio source.

**13 VIDEO IN JACK**

Connect the video output from other video equipment (such as a Camera Recorder) to this jack.

---

**REAR**


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**14 MAINS LEAD****15 AUDIO IN/OUT (R/L)**

Used to connect the video recorder to your TV, another video recorder or Hi-Fi system.

**16 VIDEO OUT**

Used to connect the video recorder to your TV or another video recorder.

**17 AERIAL INPUT**

Connect the external aerial to this terminal.

**18 RF OUTPUT**

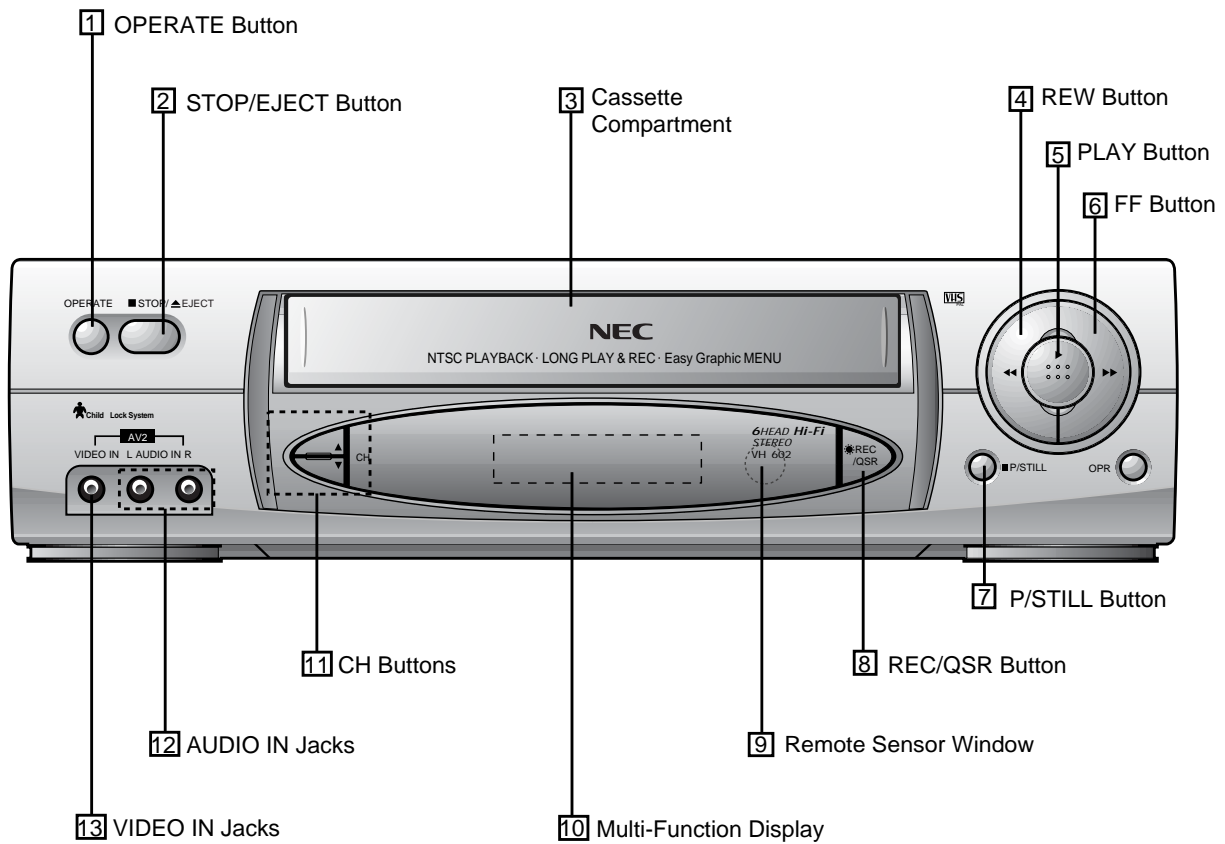
Connect this terminal to the AERIAL terminal on the back of the TV, using coaxial RF cable (supplied).

**19 VIDEO IN**

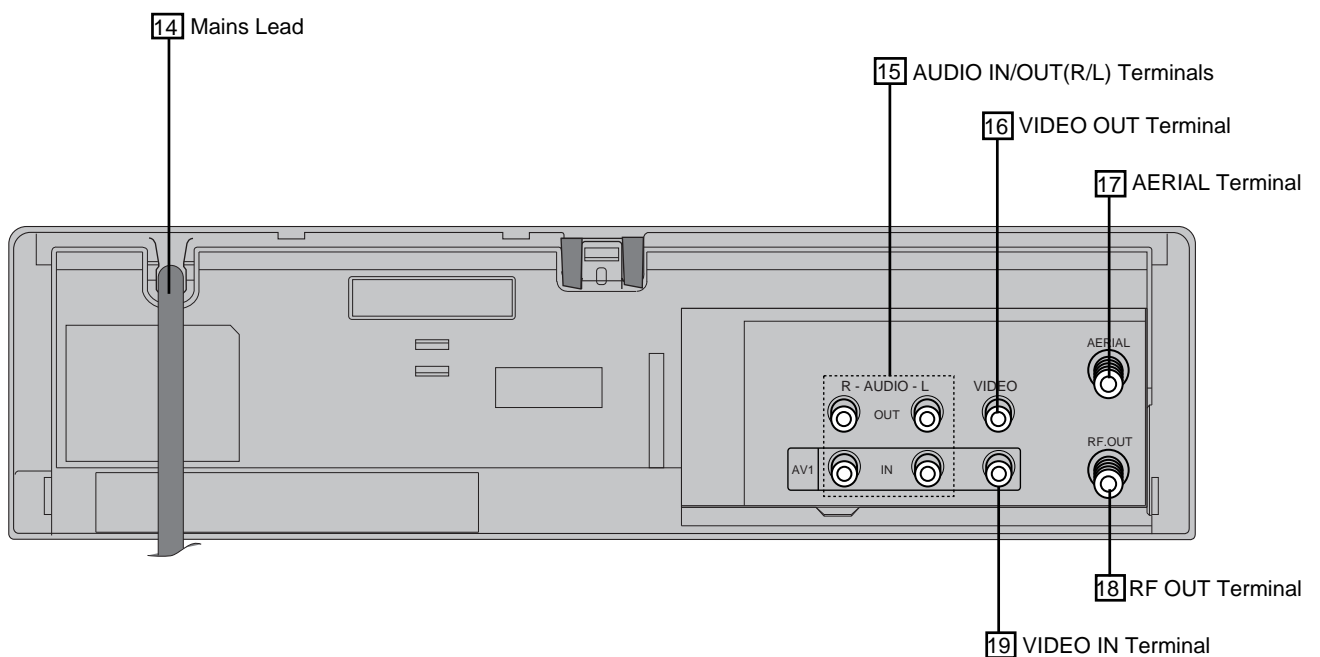
Connect the video output from other video equipment (such as a Video Camera) to this jack.

# Controls and Components

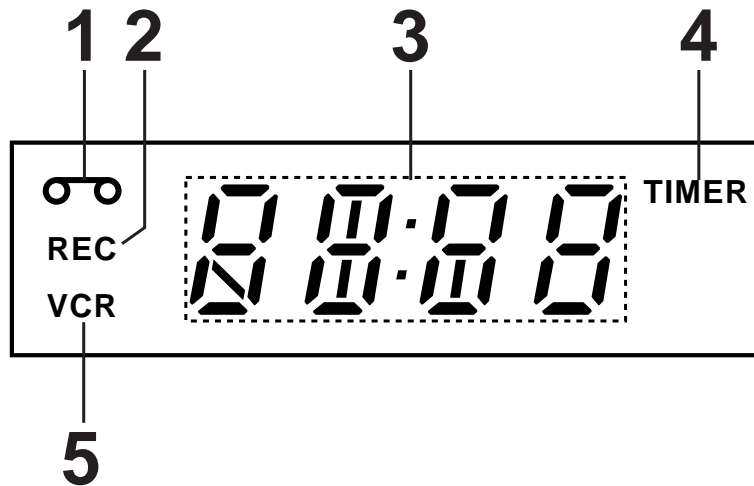
## Front Panel



## Rear Panel



# Multi-Function Display



1	<b>Cassette- in Indicator</b>	Appears whenever there is a cassette tape in the VCR.
2	<b>REC</b>	Appears when the VCR is in Recording mode.
3	<b>Switchable Display</b>	<ul style="list-style-type: none"> <li>● Clock</li> <li>● QSR (Quick Start Recording) off time</li> <li>● Channel number</li> <li>● AV (AV1, AV2)</li> <li>● SC (Simulcast)</li> <li>● Current tape mode</li> </ul>
4	<b>Timer</b>	Appears when the VCR is set to record a programme in TIMER mode
5	<b>VCR</b>	Appears when the TV/VCR button is set to VCR mode.

# Function Indicator

---

PLAYBACK  
PLAY

RECORD  
REC

PLAY BACKWARD  
-PLAY


FAST FORWARD  
FF

2X PLAY  
PB, 2

FAST FORWARD SEARCH  
CUE

3X PLAY BACKWARD  
-PB, 3

STILL PLAYBACK  
STL

RECORD PAUSE  
 RECP

SLOW MOTION  
SLW

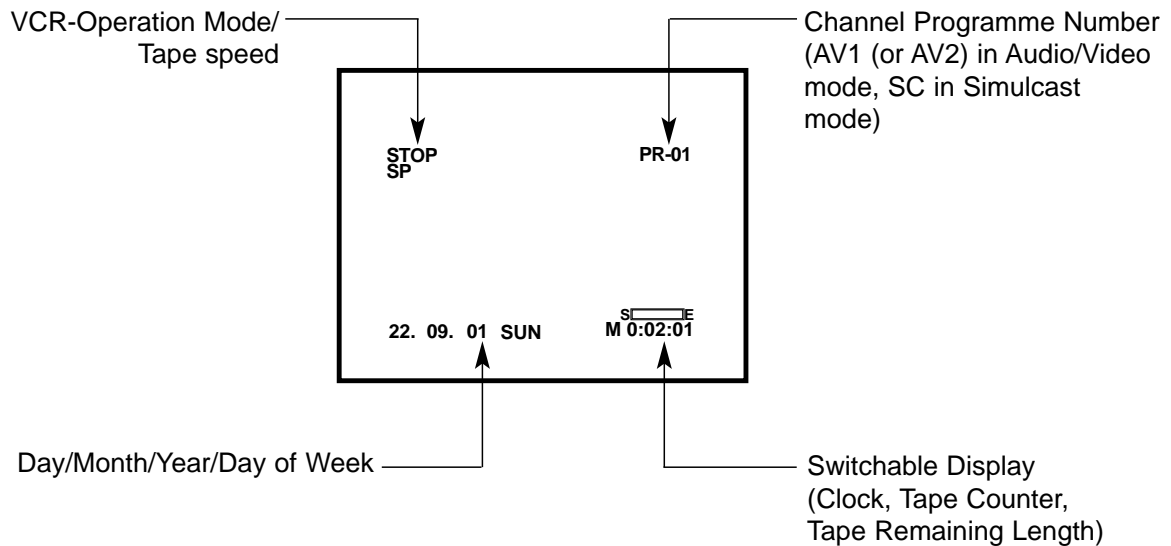
REWIND  
REW

REVERSE SEARCH  
-CUE

STOP  
STOP

# On-Screen Display

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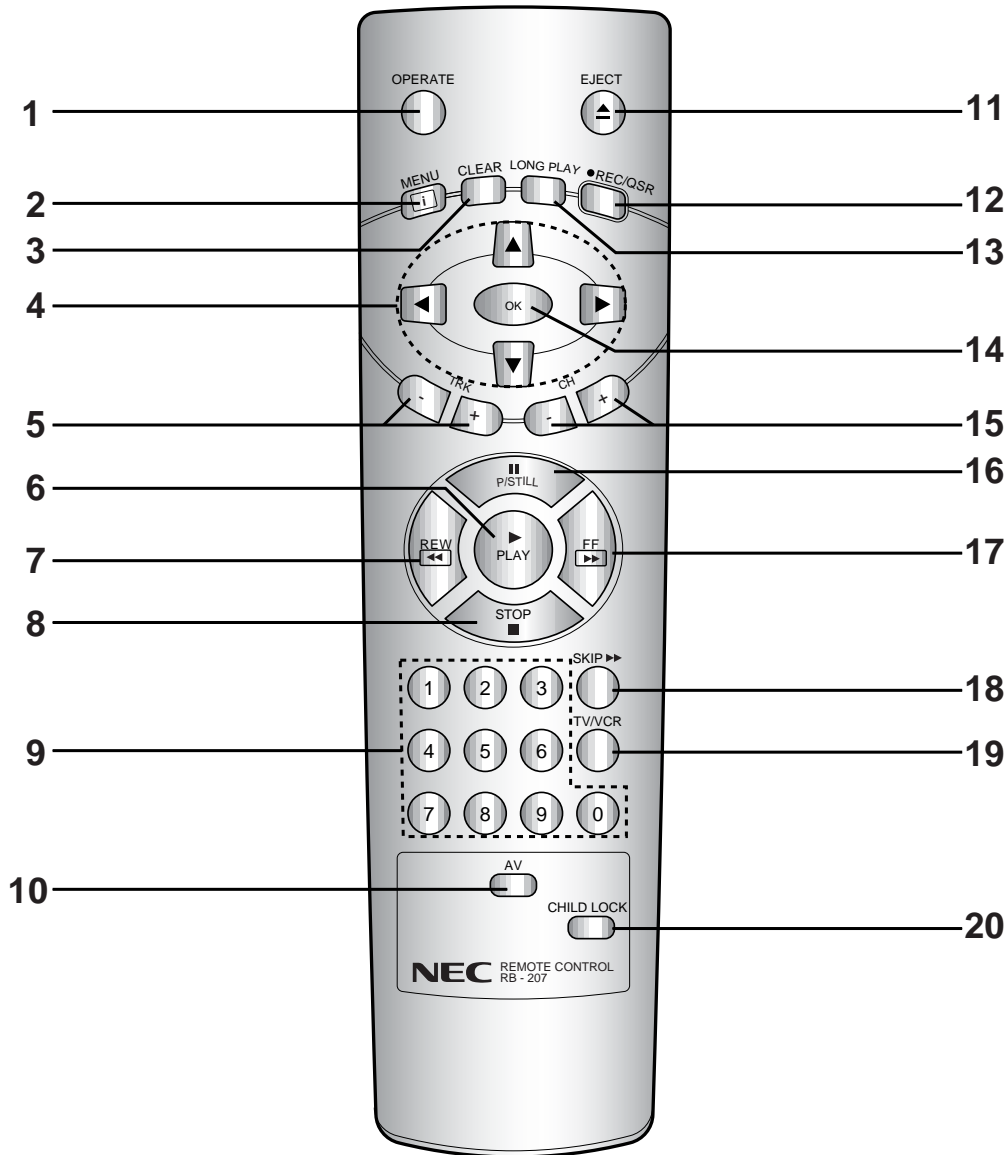
When OK button is pressed, OSD (On-Screen Display) displays VCR operation mode, tape speed, channel programme number, date, year and day of the week will appear on the TV screen. The switchable display of the current time or the tape counter and the remaining tape length will also appear on the TV screen. After three seconds OSD will disappear. If OK button is pressed twice in quick succession, the clock display will remain on the TV screen. Each time OK button is pressed, you can change the switchable display to the current time or to the tape counter and the remaining tape length. Press OK button again to remove OSD from the TV screen.

## NOTES:

- If recording is taking place, these On-Screen Displays will not be recorded onto the tape.
  - The remaining tape length indicator may not be displayed correctly depending on the type or condition of the tape. Note, the remaining tape length indicator is not displayed just after you insert a tape.
-

# Remote Control Unit

Almost all VCR functions can be controlled from the wireless remote control unit. The remote control must have line of sight to the remote sensor on the front panel of the VCR and must be within an angle of 30 degrees either side of it. The maximum operating distance is about 7.5 m (25 feet). If the operating distance decreases, the remote control may need new batteries.

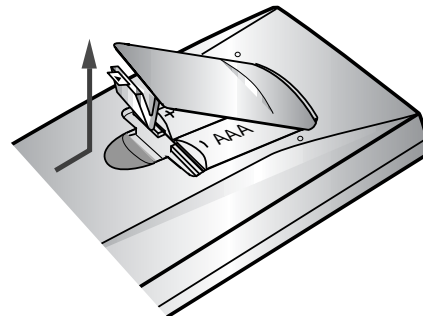


## BATTERY REPLACEMENT

- Remove the battery compartment lid by sliding it forward.
- Remove the flat batteries.
- Load new AAA batteries, taking care to align their polarities ( $\oplus$  and  $\ominus$ ) as indicated.
- Replace the lid.

## NOTE:

If you do not intend using the remote control unit for an extended period of time, remove the batteries and store them in a cool, dry place.



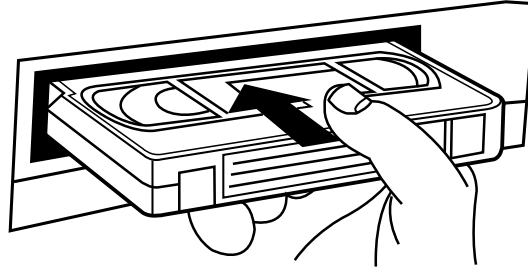
1	<b>OPERATE</b>	Turns the unit ON or OFF.
2	<b>MENU (i)</b>	Used to enter into menu on the TV screen.
3	<b>CLEAR</b>	Press to reset the counter to 0:00:00.
4	<b>CURSOR (▼▲◀▶)</b>	<p>▼▲</p> <ul style="list-style-type: none"> <li>● During OSD menu, for moving the cursor, selection bar up or down.</li> <li>● Switches one channel programme up or down.</li> <li>● During playback, tracking control.</li> <li>● During still playback, adjusting vertical tremble.</li> </ul> <p>◀▶</p> <ul style="list-style-type: none"> <li>● During OSD menu, for moving the cursor to the left or right.</li> <li>● Adjust the playback speed.</li> </ul> <p>The cursor ( ◀ ) button can be used to clear data.</p>
5	<b>TRACKING (TRK)</b>	Used to adjust tracking manually.
6	<b>PLAY</b>	Press to play back recorded tapes.
7	<b>REWIND/REVIEW (REW)</b>	Press to start rewind. Press this button during playback to see reverse playback picture at high speed.
8	<b>STOP</b>	Press to stop the tape.
9	<b>0 to 9</b>	These buttons are used to select programmes, or to set the clock and the timer according to the guidelines displayed on the TV screen.
10	<b>AUDIO/VIDEO MODE (AV)</b>	<p>Used to select the input signal.</p> <ul style="list-style-type: none"> <li>● Press once: SC will appear on the Multi-Function Display. SC is selected to record the video and normal audio signal from the built-in tuner, and the Hi-Fi audio signal from AUDIO IN (L/R), VIDEO IN on the front panel.</li> <li>● Press twice: AV1 will appear on the Multi-Function Display. AV1 is selected to record or view signals from AUDIO IN (L/R), VIDEO IN on the rear panel.</li> <li>● Press three times: AV2 will appear on the Multi-Function Display. AV2 is selected to record or view signals from AUDIO IN (L/R), VIDEO IN on the front panel.</li> <li>● Press four times: AV2 will disappear on the Multi-Function Display. You can now watch or record signals from the built-in tuner.</li> </ul>
11	<b>EJECT</b>	Press to eject a cassette.
12	<b>REC/QSR</b>	Press to record or to set the QSR (Quick Start Recording).
13	<b>TAPE SPEED (Long Play)</b>	Used to select the desired recording speed: SP (Standard Play) or LP (Long Play).
14	<b>OK</b>	Press while the clock is displayed to show the tape counter. The tape position will be stored in memory. <ul style="list-style-type: none"> <li>● Confirms menu selection.</li> <li>● Calls up OSD (On Screen Display).</li> </ul>
15	<b>CHANNEL (CH)</b>	Used to select channel numbers.
16	<b>PAUSE/STILL (P/STILL)</b>	Press in RECORD mode to stop recording and to eliminate commercial breaks or unwanted programme material. Press again to resume recording. Press in play mode to freeze the picture. Press PLAY to resume playback.
17	<b>FAST FORWARD/CUE (FF)</b>	Press to activate fast forward. Press this button during playback to see forward playback picture at high speed.
18	<b>SKIP ▶▶</b>	Used to fast forward picture search through 30 seconds of recording.
19	<b>TV/VCR</b>	Set this button to; <ul style="list-style-type: none"> <li>● VCR: To monitor, view playback or view the video recorder's tuner.</li> <li>● TV: To watch TV or view one programme while recording another programme.</li> </ul> <p><b>NOTE:</b> When you have set the TV/VCR button to TV mode, "VCR" indicator will disappear on the Multi-Function Display.</p>
20	<b>CHILD LOCK</b>	Used to select child lock mode.



# Inserting and Removing Video Cassettes

## Insertion

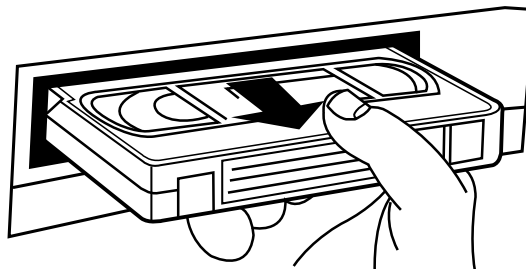
Insert the video cassette into the compartment with the window side up and the label facing you.



- The VCR does not have to be ON. So long as it is connected to a power outlet, it will turn itself ON and continue the loading process.
- If the cassette does not have a safety tab, the VCR will enter into PLAY mode immediately.
- The cassette-in indicator  $\circ \circ$  will appear on the Multi-Function Display.

## Removal

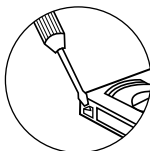
- Press EJECT. The cassette compartment will open and the cassette will be partially ejected.
- Carefully remove the cassette from the VCR. It is not recommended to leave the cassette in the VCR when not in use.



## Accidental Erasure Protection

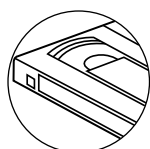
### To prevent accidental erasure

- Prevent accidental erasure of a tape by breaking off the safety tab on the back edge of the cassette.



### To re-record

- If you later want to record over the tape, cover the hole with cellophane tape.



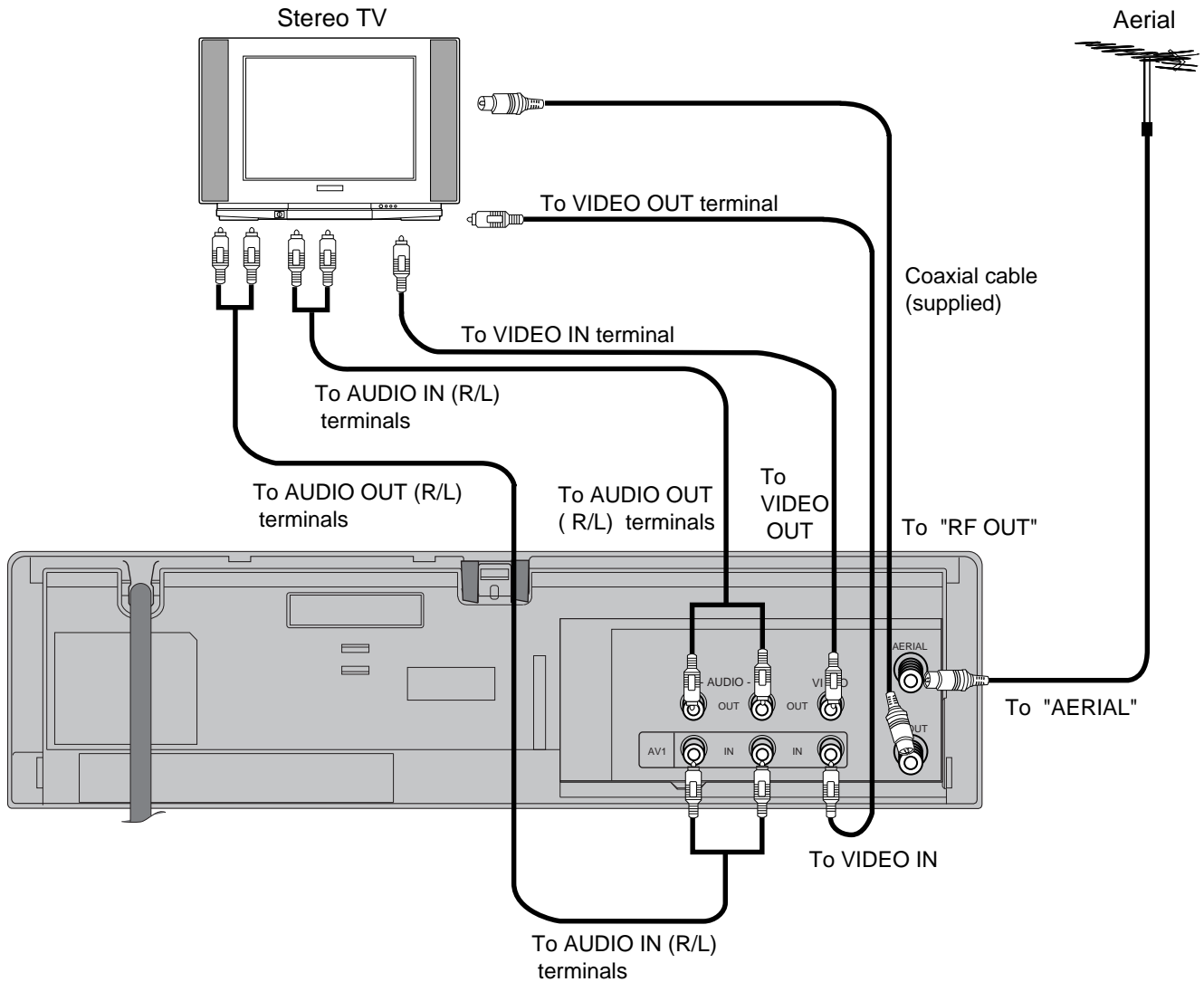
## Video Cassette Types

Use only cassettes marked VHS.

Video Cassette Length	Maximum Record/Playback Time	
	SP MODE	LP MODE
E-240	4 hrs	8 hrs
E-180	3 hrs	6 hrs
E-120	2 hrs	4 hrs
E-90	1.5 hrs	3 hrs
E-60	1 hr	2 hrs

# VCR and TV Connection

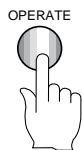
If your TV is equipped with an Audio/Video connector, it is possible to connect the VCR directly to the TV. The advantages of this type of connection are superior picture and better sound quality during playback.



1

Connect the VCR to TV as shown above.

2



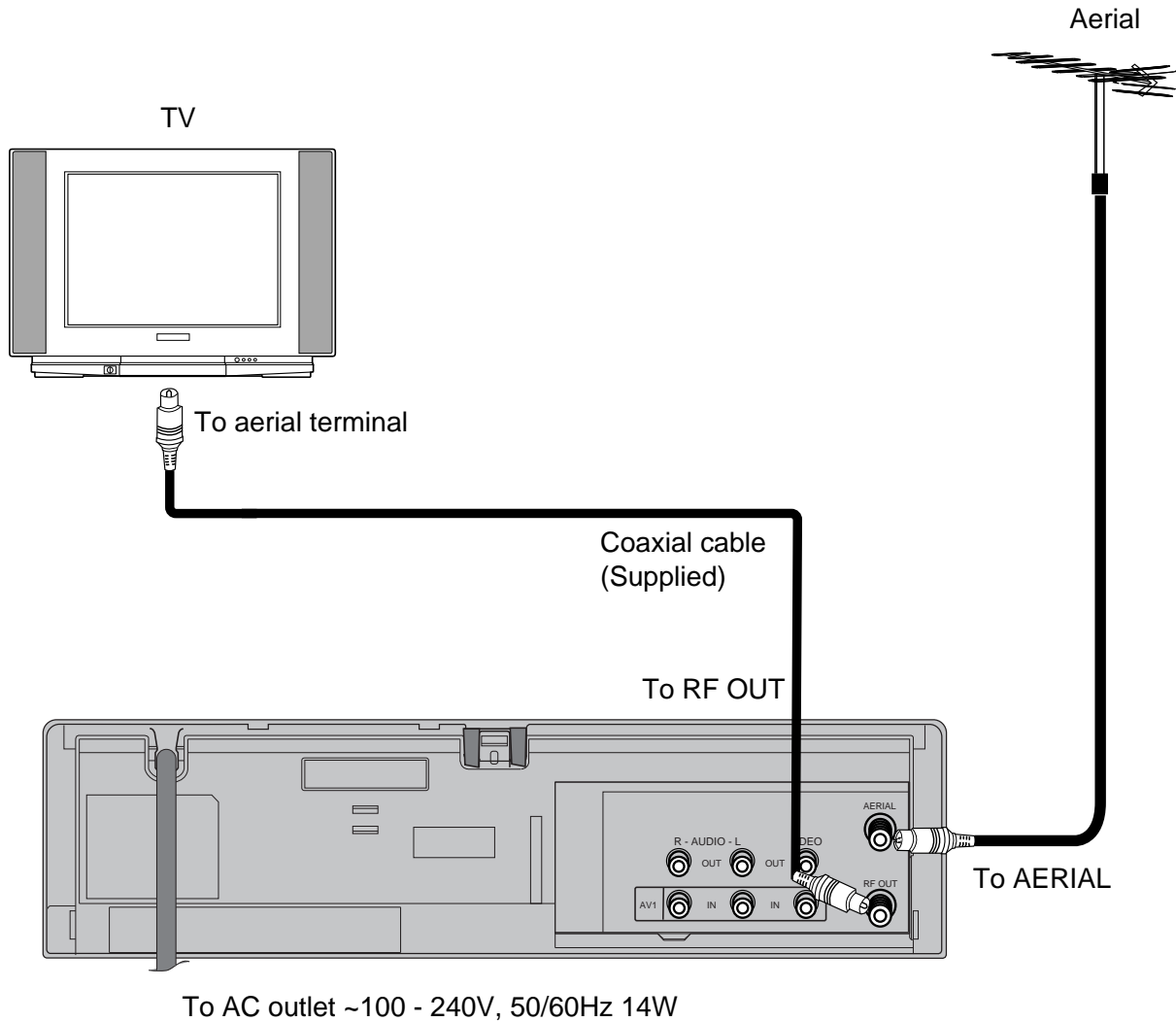
Turn the VCR ON by pressing the OPERATE button.

3

Turn the TV ON and select the Video or AV channel.

# Antenna Connection

In order to receive TV programmes with your VCR, an antenna must be connected as illustrated.



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**1** Unplug the coaxial aerial cable from your TV set and plug it into the AERIAL terminal on your VCR.

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**2** Using the coaxial cable supplied, connect the aerial terminal on your TV set to the RF OUT terminal on your VCR.

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## Setting the Video Channel on your TV

1

The output channel of the VCR is set at UHF channel 68.

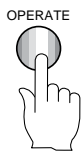
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2

Turn on the TV.

---

3



Turn the VCR on by pressing the OPERATE button.

---

4



Insert a recorded tape and press PLAY.

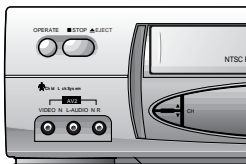
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5

Tune your TV so that the picture of the playing tape appears on the TV screen.  
**NOTE:** Refer to your TV user's manual when tuning the video channel.

---

6



If channel 68 is already occupied on your TV set, or the picture is distorted, you can change the transmitted channel of the video recorder.

1. During power off mode (only clock displayed) hold down both the "CH ▲" and "CH ▼" buttons on the VCR for more than 4 seconds. Then, "RF C68" will be displayed on the Multi-Function Display.
  2. Press either the "CH ▲" or "CH ▼" buttons on the VCR to select another video channel, eg. between channels 28 and 67.
  3. Press the "OPERATE" button when you have finished.
-

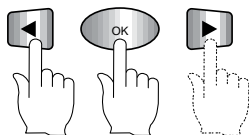
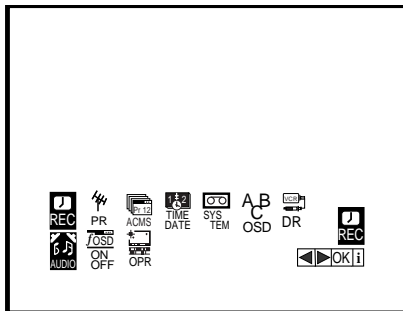
# On-Screen Menu Programming

The **i** button on the remote control can be used to activate the menu on the TV screen.

## Set-up Menu Display

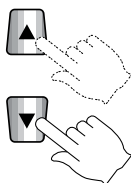
Press **i** on the remote control. The following menu will appear on the TV screen.

1



Press CURSOR (◀/▶) to select the desired menu and press OK.

2



### (1) REC

This function is used to record a programme with the timer (see p 33 to 35).

### (2) PR

This function is used to view stored TV stations or to set TV station information manually (see p 16 to 18).

### (3) ACMS

This feature is used for automatic setting of the TV stations (see p 19 to 20).

### (4) TIME DATE

This function is used to set the clock and date manually (see p 14 to 15).

### (5) SYSTEM

This function is used to set the Colour TV System (see p 31).

### (6) ABC OSD

This function is used to select the language.

- Press ▲/▼ to select from English, Russian, Deutsch, Français and Polish, or vice versa.

### (7) DR

This feature is used to check a problem with your VCR (see p 28).

### (8) AUDIO

This function selects the Hi-Fi audio track (stereo, left channel, right channel) or the normal audio track.

- Press ▲/▼ to select from STEREO → LEFT → RIGHT → MONO → STEREO, or vice versa.

Select STEREO to listen to stereo audio.

Select LEFT to listen to the left channel audio.

Select RIGHT to listen to the right channel audio.

Select MONO to listen to mono audio.

### (9) OSD ON/OFF

This feature is used to display VCR operation modes on the TV screen.

- Press ▲/▼ to select it ON or OFF.

### (10) OPR

This function is used to improve the playback picture (see p 25).

# Setting the Clock

Use the On-Screen Display and the remote control unit to set the clock.

## Before You Start

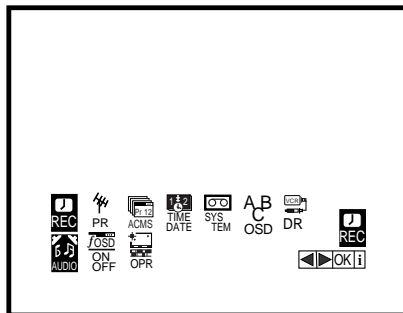
- The clock uses a 24-hour system.
- When you first plug in your VCR, the clock will read “- : - -”.
- While you are setting the clock, a menu on the TV screen will prompt you to go through the correct procedure.
- If you enter an incorrect number, press CURSOR (◀▶) to clear the entry, then enter the correct number again.

## PROCEDURE

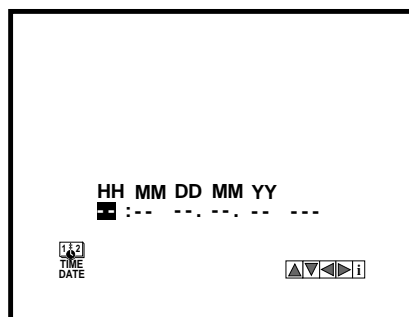
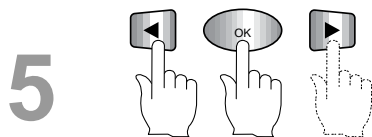
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- 1** Turn on the power of both the VCR and the TV.
  - 2** Make sure that the TV is set to the VCR output channel.
  - 3** Aim the remote control at the remote sensor window on the front panel of the VCR.
- 

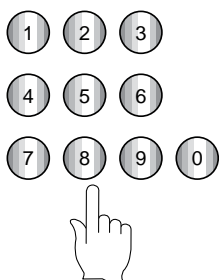
**4** Press **i** on the remote control. The menu below will appear on the TV screen.



Press CURSOR (◀▶) to select “TIME DATE” and press OK.



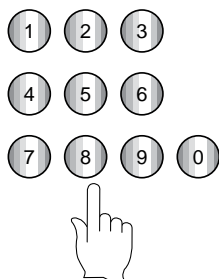
# 6



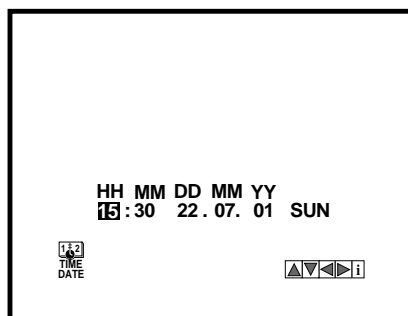
Set the hour by pressing 2 number buttons on the remote control. Enter 2 more for the minutes (e.g. 1530 for 15:30).



# 7



Set the date by pressing the number buttons to enter 6 digits (day, month and year in order). For example, "220701" for 22 July 2001. The day of the week will appear automatically when you have entered all 6 digits for the date.



# 8



Press **i** to remove menu from the TV screen.  
The clock starts and appears on the Multi-Function Display.

# Setting the Reception Channels

The built-in frequency-synthesized tuner in the VCR allows you to receive TV broadcasts and to record programmes without having to turn the TV set on.

The VCR tuner can be pre-set for a maximum of 80 stations. Once you have pretuned these stations, you can select them using CURSOR (▲/▼), which advances the VCR directly to the highest or lowest pre-programmed channel.

Pressing or holding down the CURSOR (▲/▼) button advances the VCR through the pre-programmed channels, pausing briefly at each channel, so you can see the current programme content.

## Preparation:

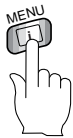
- Turn the TV ON and select the assigned video channel.
- Press OPERATE.
- Press AV to select the TUNER mode.
- Determine whether you need to enter the manual channel tuning section or the Auto channel Tuning section (ACMS).
- Manual channel tuning is used to add more channels to the existing factory preset channels.
- Auto channel tuning (ACMS) is used to reset and reprogram the reception channels.

**NOTE: Entering (ACMS) will automatically delete all existing programmed channels.**

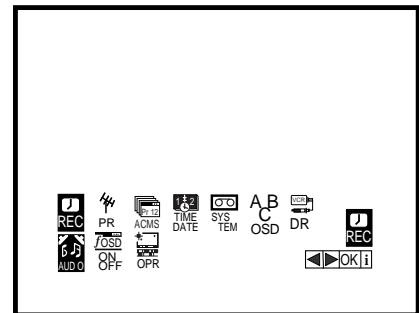
## Manual Channel Tuning

Manual channel tuning allows you to store channels in preferred order, as on your TV set. Programme numbers 01 to 80 can be used.

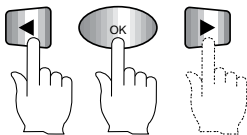
1



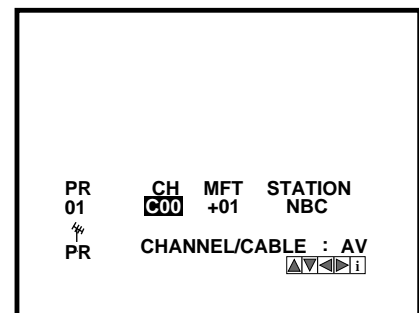
Press **i** on the remote control. The following menu will appear on the TV screen.



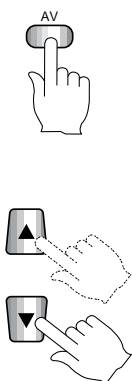
2



Press CURSOR (◀▶) to select "PR" and press OK. The following menu will appear on the TV screen.



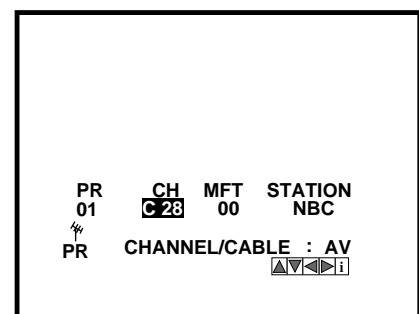
3



Press the "AV" button to select the type of TV channels.

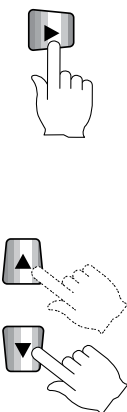
- "C" for standard channels C00-C70.
- "S" for special channels (Cable) S01-S41.

Use the CURSOR (▲/▼) buttons or use the number buttons to enter the channel number which you want to store at this programme number.

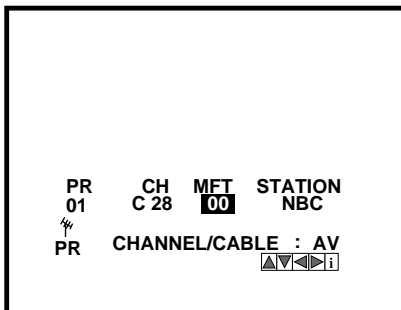




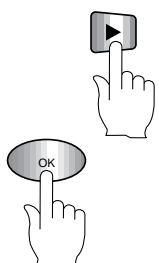
4



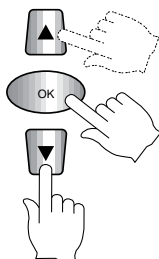
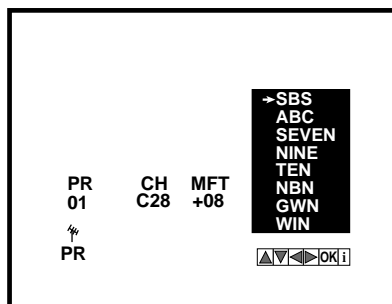
Press CURSOR (▶) to select "MFT".  
When the correct station is in view, if necessary, adjust picture quality using the CURSOR (▲/▼) buttons.



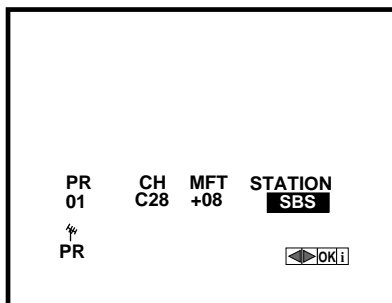
5



Press CURSOR (▶) buttons to select "STATION". If you require a channel name for your programmed station you can select from a menu or manually change a channel name.  
Press OK button once, the following station name list will appear on the TV screen.



1) If the station name required is on the menu use the CURSOR (▲/▼) buttons to select it. Press "OK" button.  
The "TV station table menu" will be displayed.

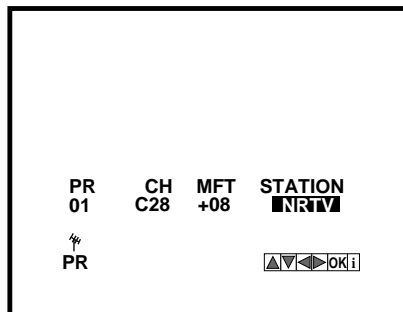


2) If the desired station name is not on the menu, go to step 6.  
To end the name change procedure, press the "i" button. Go to step 7.

# 6

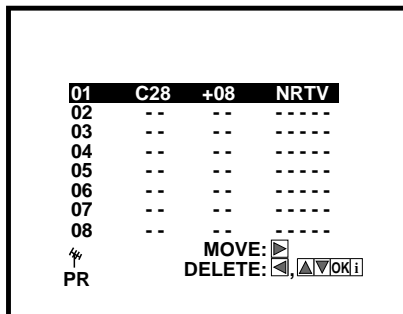
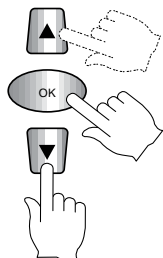


To manually change the name of the station, for example; change SBS to NRTV. Use the CURSOR (▶) to input the station name manually.



- 1) Enter the first letter of the station name by pressing the CURSOR (▲) and (▼) buttons repeatedly.
- 2) Now move the cursor with CURSOR (▶) to the next position and write in the next letter of the station name.
  - For corrections, move the (◀) and (▶) buttons back and forth.
- 3) When you have the station name as required press the “i” button. The “TV station table” menu will be displayed.

# 7



To store other stations or correct other names select “PR” with the CURSOR (▲/▼), then press the “OK” button. The process can be repeated from step 3. Press “i” to end manual channel tuning.

## Auto Channel Tuning

**Important:** This VCR has the following channels preset when it is shipped from the factory.

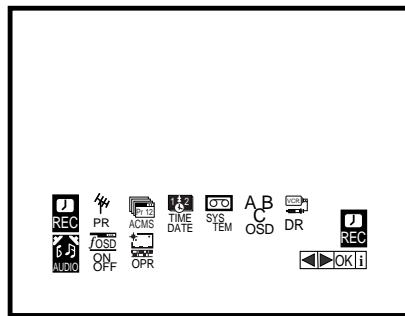
Channel Indication	1	2	3	4	5	6	7	8	9	10	11-27	28
Channel Number	-	2	-	-	-	-	7	-	9	10	-	28

It must be noted that by entering the Auto Channel Tuning mode (ACMS), all factory preset channels and manually stored channels will be automatically erased, therefore, if you wish to add any channels to the factory preset channels, refer to the manual channel tuning section.

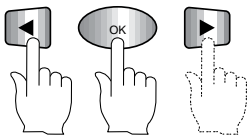
1



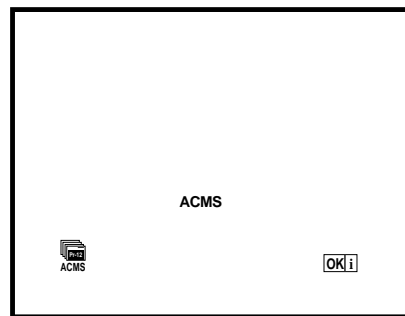
Press **i** on the remote control.  
The following menu will appear on the TV screen.



2



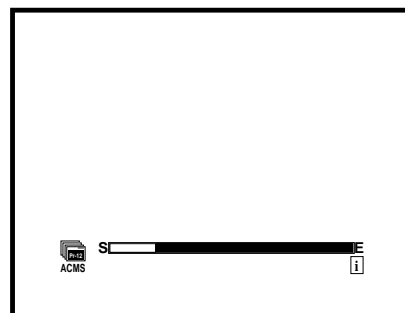
Press CURSOR (◀▶) to select "ACMS" and press OK.  
**NOTE: This will delete all previous programmed channels before storing the new channels.**



3



Press OK to start automatic channel search.



---

# 4

When Automatic channel tuning is complete, "TV Station table" menu appears on the TV screen.

01	C03	+08	PR-01
02	C02	+02	PR-02
03	C11	-01	PR-03
04	C40	+03	PR-04
05	C02	+01	PR-05
06	--	--	-----
07	--	--	-----
08	--	--	-----

PR MOVE: [right arrow] [OK] i  
DELETE: [left arrow] [up arrow] [down arrow] [OK] i

---

**NOTE:** AUTO SEARCH will stop if all channels are scanned or if the i button is pressed again.

---

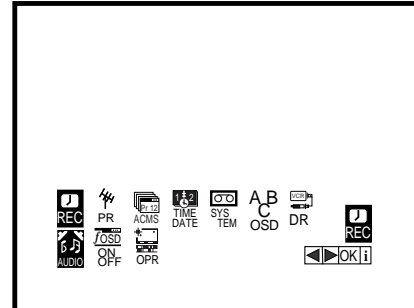
## Skipping or Scanning Channel Positions

If you want to scan the channels broadcasted in your local area, you can delete unused channels with the following steps.

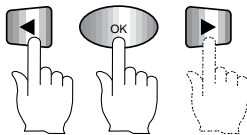
1



Press **i** on the remote control.  
The following menu will appear  
on the TV screen.



2



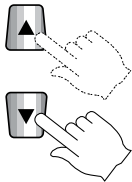
Press CURSOR (◀▶) to select  
"PR", press OK and press **i**.



01	C03	+08	PR-01
02	C02	+02	PR-02
03	C11	-01	PR-03
04	C40	+03	PR-04
05	C02	+01	PR-05
06	--	--	-----
07	--	--	-----
08	--	--	-----
PR			

MOVE: [right arrow] [OK] [i]  
DELETE: [left arrow] [up arrow] [down arrow] [OK] [i]

3



Press CURSOR (▲▼) to select  
the programme that you want to  
delete.

01	C22	+08	PR-01
02	C32	+02	PR-02
03	C31	-01	PR-03
04	C40	+03	PR-04
05	C52	+01	PR-05
06	--	--	-----
07	--	--	-----
08	--	--	-----
PR			

MOVE: [right arrow] [OK] [i]  
DELETE: [left arrow] [up arrow] [down arrow] [OK] [i]

4



Press CURSOR (◀) to delete the  
channel.  
The station will be cleared. To  
skip other channels, repeat steps  
3 and 4.

01	C22	+08	PR-01
02	C32	+02	PR-02
03	C31	-01	PR-03
04	C40	+03	PR-04
05	C52	+01	PR-05
06	--	--	-----
07	--	--	-----
08	--	--	-----
PR			

PLEASE WAIT  
DELETE: [left arrow] [up arrow] [down arrow] [OK] [i]

5



Press **i** to end channel deleting.

**NOTE:** Deleting a station will result in a change in the program number order. That is; if PR No. 9 is deleted, all Pr No's below the deleted number will move up one PR No. in the table. (For example : After PR No. 9 has been deleted PR No. 10 will move into PR No. 9 position.)

Therefore, refer to following section on changing the programming order of the "TV station table".

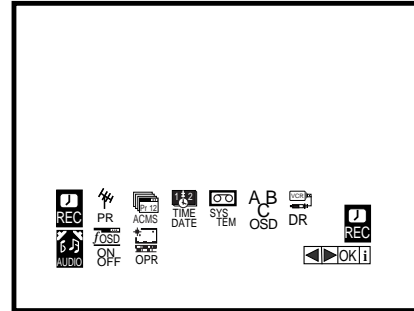
## Changing the programming order of the “TV station table”

If you want to move the order of the TV stations, you can do it easily with the following steps:

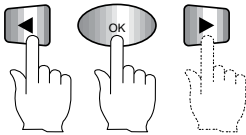
1



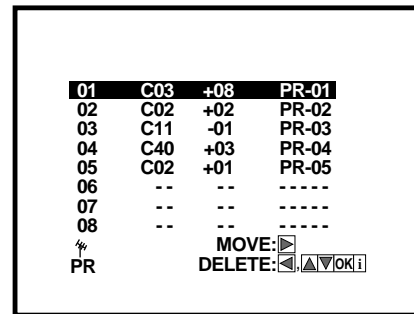
Press **i** on the remote control.  
The following menu will appear  
on the TV screen.



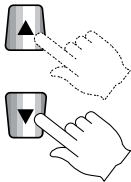
2



Press CURSOR (◀▶) to select “PR”, press OK and press **i**.



3



**NOTE:** When changing the program order start with the highest transferred channel number through to the lowest transferred channel number.

**For example:**

Transfer : PR 03 → 28 Highest

then, PR 05 → 10 Lower

PR 04 → 09

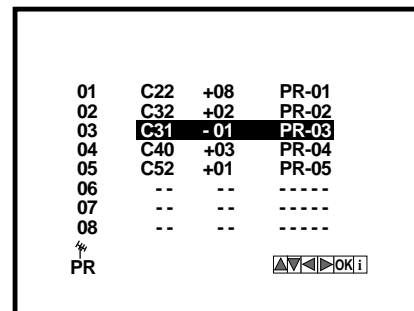
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-----

PR 02 → 02 Lowest

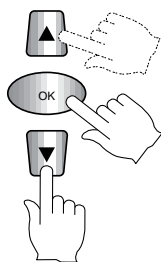


Press CURSOR (▲▼) to select the programme you want to transfer to another position in the menu (for example “PR No. 03”) and press CURSOR (▶).



---

4



Move the cursor to place the cursor line at the position where you want to insert the selected programme (for example PR No. 04) and press OK. The selected station will be moved to the new programme number. Move other stations, if you wish, by repeating steps 3 to 4.

01	C22	+08	PR-01
02	C32	+02	PR-02
03	C40	+03	PR-03
<b>04</b>	<b>C31</b>	<b>-01</b>	<b>PR-04</b>
05	C52	+01	PR-05
06	--	--	-----
07	--	--	-----
08	--	--	-----
↕			
PR			

MOVE: [right arrow] [left arrow] [up arrow] [down arrow] [OK] [i]  
DELETE: [left arrow] [right arrow] [up arrow] [down arrow] [OK] [i]

---

5



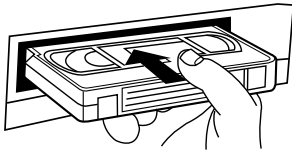
Press i to end programming order of the "TV station table".

# Playing Back Video Cassettes

---

## Normal Playback

1



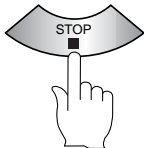
Insert a pre-recorded video cassette in the VCR.

2



When the cassette is inserted, press PLAY to start playback. The display "PLAY" will appear briefly on the TV screen and on the Multi-Function Display. The playback speed of the tape will be selected automatically by the VCR.

3



Press the STOP button to stop playback. The display "STOP" will appear briefly on the TV screen and on the Multi-Function Display.

- When the tape reaches the end during playback, the VCR will stop and start rewinding automatically. When the rewinding finishes, the cassette tape will be partially ejected and the power of the VCR will be turned off automatically.

---

## Automatic Playback

If you insert a cassette tape into the VCR without the safety tab (or a piece of cellophane tape) in place, the VCR will automatically function in sequence as follows:

- The power will be turned on.
- The VCR will start playback immediately.
- At the end of the cassette, the tape will be rewound automatically (AUTO REWIND) .
- The cassette will be ejected automatically when the rewinding is complete.
- The power will be turned off.

### NOTE:

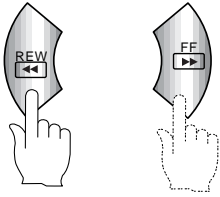
The cassette will be ejected when the EJECT button is pressed, even if the VCR's power is OFF.

---



# Searching for Particular Scenes

This video recorder will wind a tape forward or backward quickly to search for particular scenes on the tape.



## Fast forward (FF)

Pressing the fast forward (FF) button with the tape in STOP mode, the video recorder will rapidly wind the tape forward. The display "FF" will appear on the TV screen and on the Multi-Function Display briefly.

## Rewind (REW)

Pressing the rewind (REW) button with the tape in STOP mode, and the video recorder will rapidly wind the tape backward. The display "REW" will appear on the TV screen and on the Multi-Function Display briefly.

## Logic Search

While holding down either FF(during Fast Forward mode) or REW(during Rewind mode), from the STOP mode, the picture will be watched at 9 times (NTSC recorded tape: 7 times) faster than the normal playback speed (SP or LP recorded tape). When you have reached the desired point of the tape, release the button (REW or FF) and press PLAY.

## Picture Search (CUE & REVIEW)

During playback, press either of the search buttons (REW or FF) to search for a particular section of the tape. The indicator REW or CUE will appear on the TV screen and on the Multi-Function Display. When the desired point in the tape has been located, press PLAY to return to the normal playback mode. Visual searching will only continue for about 3 minutes, then it will return to playback mode.

## NOTES:

- While searching, the audio portion is automatically muted.
- While searching, noise streaks may appear in the picture.

## OPR (Optimum Picture Response)

This feature automatically improves playback picture quality by adjusting your VCR to the condition of the tape.

Press **i**.

Press ◀ or ▶ to select **OPR**.

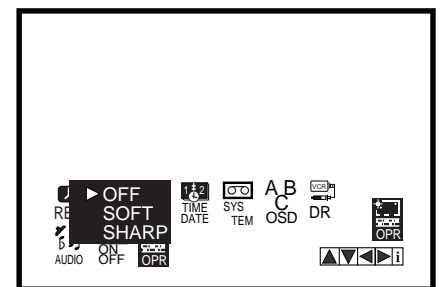
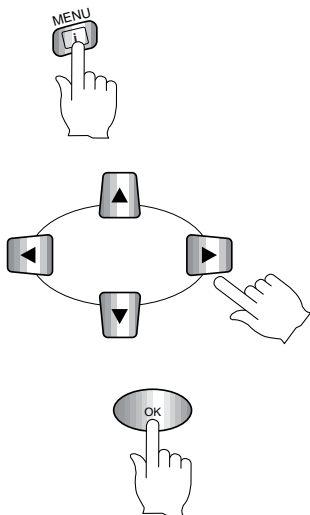
Press OK.

Press ▲ or ▼ repeatedly to select:

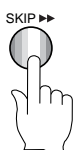
**OFF, SOFT or SHARP.**

**Please note you may only set OPR when playing a tape.**

Press **i** to return to TV picture.



# Skip Search



During playback, press SKIP to skip commercials or other programme material. Pressing 1, 2, 3, 4, 5 or 6 times skips 30, 60, 90, 120, 150 and 180 seconds, respectively.

SKIP skips a full 180 seconds of commercials in a few seconds, then resumes normal playback.

# Special Playback

## Still Playback

---



Press P/STILL to freeze the picture during playback. To continue normal playback, press PLAY.

- When the picture is still, unstable noise bars may appear on the TV screen and no sound will be heard. This is normal.
- Use CURSOR (▲/▼) to eliminate vertical jitter.
- If the VCR is left in pause/still mode for more than 5 minutes, the VCR will be reset automatically to stop mode to protect the tape and the video heads.

## Frame Advance

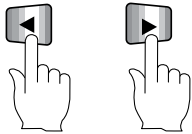
---



During still mode, press P/STILL to advance the picture one frame at a time. To continue normal playback, press PLAY.

## Slow-motion Playback, Shuttle (By Using the Remote Control)

---



During normal playback or still playback, slow-motion shuttle control can be activated by pressing CURSOR (◀▶).

The playback speed will be changed as below:

-7 x play, -3 x play, -play, still, 1/19 slow, play, 2 x play, 7 x play.

To switch off slow-motion, press either of the desired function buttons e.g. playback, search, still picture or stop.

---

### NOTES:

- If distortions can be seen in the picture, remove them with the CURSOR (▲/▼) buttons.
  - The slow-motion playback will only continue for about 30 secs, after that the video recorder will return to the normal playback mode to avoid damage of the tape.
  - While using the special playback effects (picture/logic search or still or slow-motion playback) with the tape recorded in LP mode, there will be a loss of colour and there may be noise bars in the picture.
-

# Tracking Adjustment

---

When a tape recorded on another VCR is played back, noise bars and snow may appear in the picture. Use the tracking procedures described below to stabilize the image and improve the picture quality.

---

## Digital Auto-Tracking

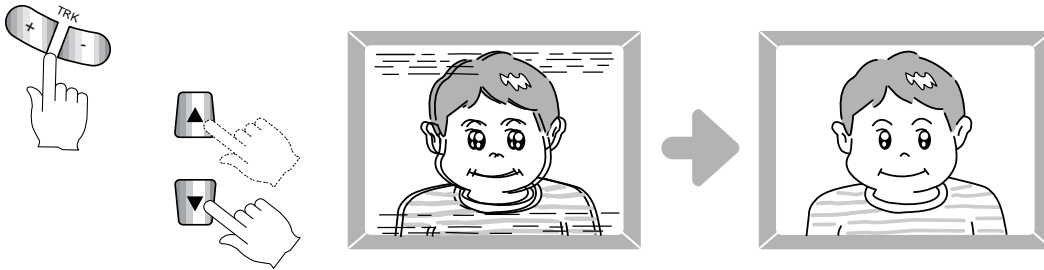
When playback starts, Auto-Tracking functions automatically, optimizing the picture quality.

### NOTES:

- Auto-Tracking will function during playback.
  - If the quality of the recording is poor, or if the tape is damaged, the automatic tracking may not function correctly. In such cases, you have to remove the distortions manually.
- 

## Manual Tracking

Press TRK (+/-) or CURSOR (▲/▼) to obtain the optimum picture. These buttons can also be used during searching to move noise bars up or down the screen.



### NOTE:

Tracking is automatically set to normal whenever a cassette is inserted or the VCR's power cord is plugged in.

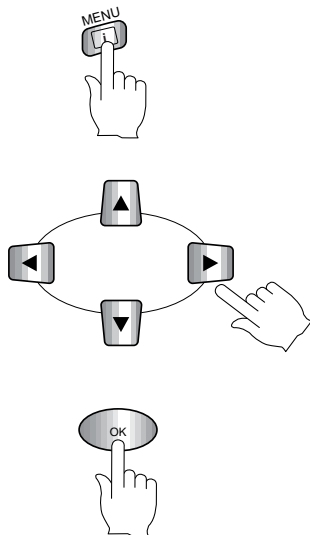
---

# Convenient Features

This VCR is equipped with a number of convenient features that will enhance your enjoyment of videos.

## Diagnostic Advising System

This function informs you of an error with a message for solving problems more easily. These error messages will be shown on the TV screen.



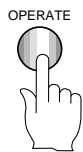
Press **i**. and press ◀ or ▶ to select **DR**.

Press OK and press ▲ or ▼ repeatedly to select:



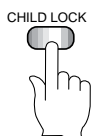
STATUS OF DISPLAY	SOLUTION
PLEASE CLEAN	Clean your video heads
NOT RECORDABLE	Insert a tape with its protection tab in place
2	Shows the number of timer recording
SBS 26 10:00~11:00	Shows the current status of timer recording

## Auto Memory Power Shut-off



When you start rewinding the tape from stop mode, press OPERATE once. When the rewinding is complete, the power will be turned off automatically. If you press any of the control buttons (OPERATE, PLAY, REW, FF, etc.) a second time, the auto memory power shut-off function will be cancelled.

## Child Lock Function



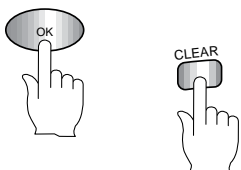
If the child lock function is engaged, all buttons except STOP and EJECT on the VCR become inoperative.

The indicator SAFE will appear on the TV screen.

### NOTE:

In child lock mode, all the buttons on the remote control can be used to operate the VCR. Therefore it is recommended to put the remote control unit aside from the VCR to avoid any accidental operation by the children. To cancel the child lock function, press CHILD LOCK button again.

## Tape Counter



The tape counter shows you the relative positions of programmes on a tape. If you set the counter to 0:00:00, you can see the counter reading from 0:00:00 during playback or recording or searching. This feature makes it easier for you to find the programme or to find a portion of the tape. To set the counter to 0:00:00, press CLEAR.

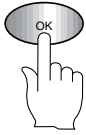
The counter displays the travelling time of the tape in hours, minutes and seconds.

---

## Zero Stop

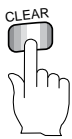
The Zero Stop function stops a tape automatically when the tape counter reaches 0:00:00. This feature can be used to return the tape to a preselected position quickly after recording, or to playback a portion of a tape repeatedly.

1



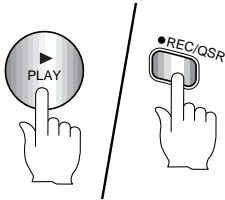
Press OK to set the counter mode.  
The tape counter display will appear on the TV screen.

2



Before playback or recording, press CLEAR to zero the counter.  
The 0:00:00 indicator will appear on the TV screen.

3



Start playback or recording.

4



Press STOP when playback or recording is complete.

5



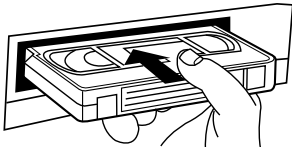

Press REW. The tape will stop automatically when the counter reaches 0:00:00.

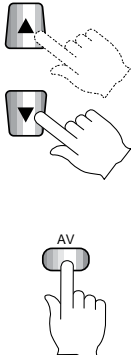


### NOTE:

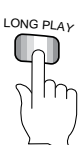
- Press OK to change the tape counter display to clock mode.
-


# Recording TV Programmes

- Make sure that the timer recording indicator **TIMER** is OFF. If the indicator appears on the Multi-Function Display, press **OPERATE** once to turn it off.
- Check that the safety tab on the cassette is in place. If it has been removed, recording will not start. Full Auto Play will take over instead.
- Turn the TV on and set the TV channel to VCR output channel 68.

- 
- 1**  Insert the video cassette.
- The cassette-in indicator  will appear on the Multi-Function Display.
  - The Multi-Function Display will light up and the channel position, number and the clock indicator will also appear.

- 
- 2**  Select the desired channel by pressing **CURSOR** (/).
- When recording from another source via **AUDIO IN (L/R)**, **VIDEO IN** in the rear panel (**AV1**) or in the front panel (**AV2**), select **AV** mode with **AV** button. The **AV** indicator **A1** or **A2** will appear on the Multi-Function Display and **AV1** or **AV2** will appear on the TV screen.
- NOTE:** Press **AV** to select **TUNER** mode, if you need to record from **TUNER** mode.

- 
- 3**  Press **LONG PLAY** to select the desired tape speed: **LP** or **SP**.

- 
- 4**  Press **REC/QSR** to start video and audio recording.
- The recording indicator **REC** will appear on the Multi-Function Display. **RECORD** will also appear on the TV screen briefly.
-

## To Avoid Recording Unwanted Programme Materials

5



Press P/STILL to stop the tape temporarily. The indicator RECP will appear on the Multi-Function Display. RECP on the TV screen will also appear.

- To continue recording, press P/STILL again.

### NOTE:

After 5 minutes in PAUSE mode, the VCR will automatically enter into STOP mode to protect the tape and the video heads. In such a case, press REC/QSR to start recording again.

6



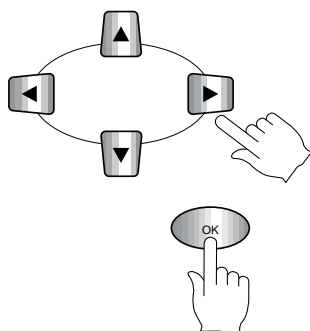
Press STOP to stop recording. The recording indicator **REC** will disappear from the Multi-Function Display. STOP will appear briefly on the TV screen. If the tape reaches the end before STOP is pressed, the VCR will stop and start rewinding the tape to the beginning automatically.

## Recording One Programme While Watching Another

You can record one programme while watching another simply by choosing the desired channel with the TV channel buttons.

If two programmes that you want to watch are broadcast at the same time, you can record one while watching the other.

- Follow steps 1-4 above.
- Use the TV channel selector of the TV set to select the channel for watching.
- Do not change the VCR channel.
- You cannot watch another programme simultaneously if you record a TV programme with the VCR in AV mode.



### To set the colour system

Your VCR is equipped with triple colour standard, you can play back a tape in PAL B/G and SECAM B/G.

During playback your VCR detects the colour system automatically.

Press **i**.

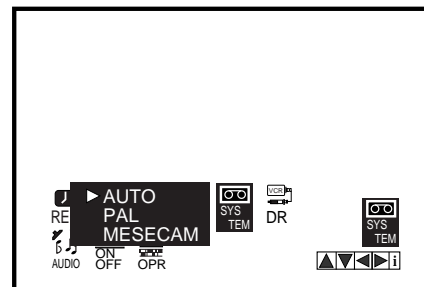
Press ◀ or ▶ to select **SYSTEM**.

Press OK.

Press ▲ or ▼ repeatedly to select:

- AUTO**: automatic colour selection,
- PAL**: PAL recordings
- MESECAM**: SECAM B/G recordings.

Press **i** to return to TV picture.



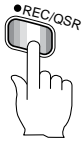
# Quick Start Recording (QSR)

Use this features to start recording quickly.

---

## Starting Quick Start Recording

1



Press REC/QSR to start recording.

---

2

Press REC/QSR again. 0H30 and QSR (Quick Start Recording) will appear on the Multi-Function Display. Each time the REC/QSR button is pressed, the recording time will extend in steps of 30 minutes up to a maximum of 9 hours.

---

## Cancelling Quick Start Recording

- Press OPERATE or STOP to stop the VCR during quick start recording.

### NOTE:

- When quick start recording is complete, the VCR will go into STOP mode and will turn off automatically.
-



# Timer Recording Using the On-Screen Display

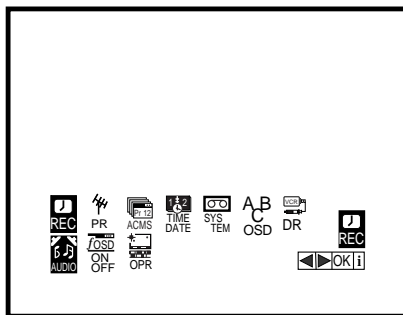
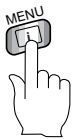
The VCR can be programmed to record up to 7 programmes within a period of 1 month. For unattended recording, the timer needs to know the channel to be recorded and the time to start and end.

## Before You Start

- If you make an incorrect entry during programming, press CURSOR (◀▶) to clear the entry. Then enter again.
- If no entry is made for approximately 3 minutes during programming, the On-Screen menu will revert to the TV screen automatically

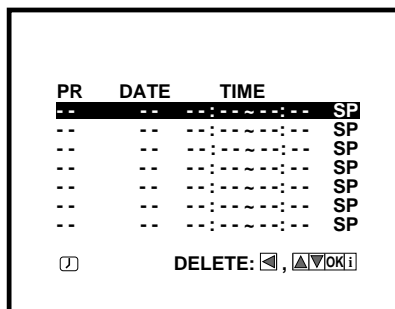
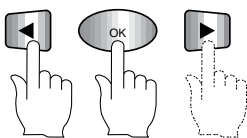
**1** Turn on the VCR and set the TV to the video channel.

**2** Press **i** on the remote control. The following menu will appear on the TV screen:

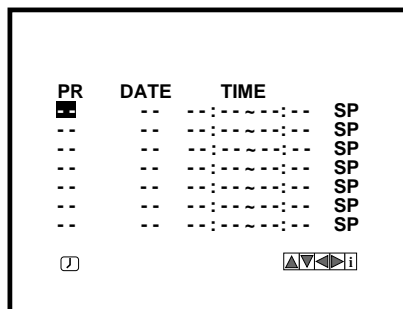


**NOTE:**  
The clock time must be set before setting the programme timer. If the clock time has not been set, the display will change to the clock menu. Now you can set the clock.

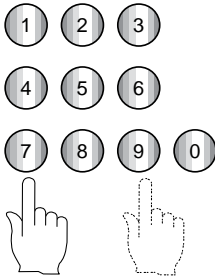
**3** Press cursor (◀▶) to select "REC" and press OK.



**4** Press OK to enter the timer programming mode.



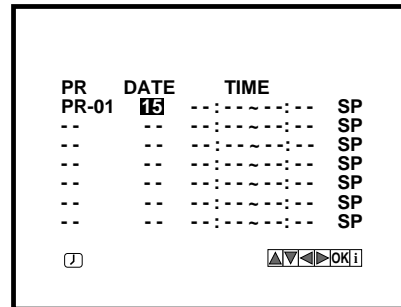
# 5



Select the programme number that you wish to record using the number buttons (for example, 01).

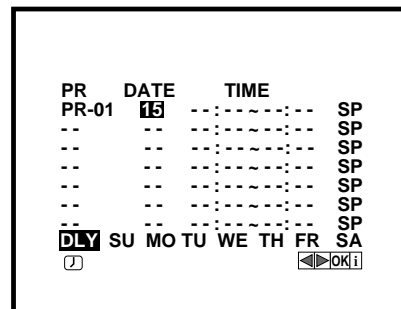
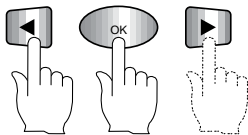
**NOTE:**

Please enter the 2 digits for the programme number and the dates. (For example, "01" for 1 and "02" for 2)



- If connected, press AV for recording TV programmes from the AUDIO/VIDEO input terminals.

If you want to change recording type (Daily or Weekly), press OK before entering the day. Now press CURSOR (◀▶) to select recording type then select it with OK.



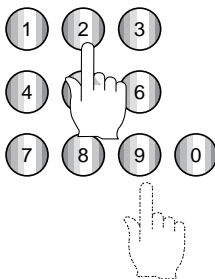
**Daily event**

For recording up to 7 programmes which are broadcast at the same time from Monday to Friday.

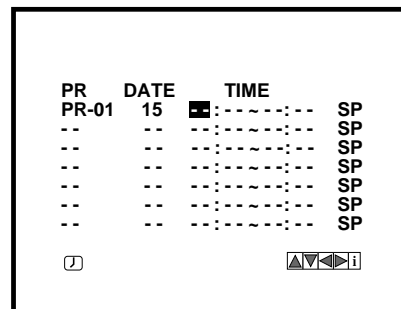
**Weekly event**

For recording up to 7 programmes on a certain day of every week (from Sunday to Saturday).

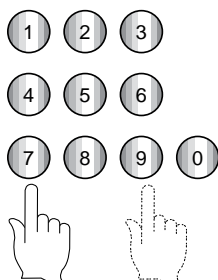
# 6



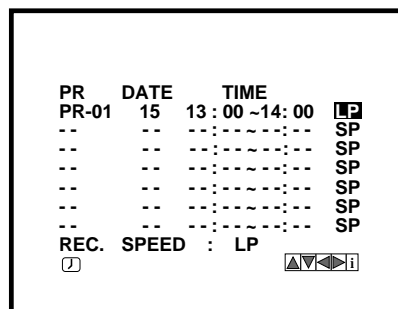
Enter the day using the number buttons.



# 7



The clock uses a 24 hour system. Enter the start and end times by using the number buttons. Enter 2 digits for the hour and 2 for the minutes (For example, 1300 for 1:00 PM).



**NOTES:**

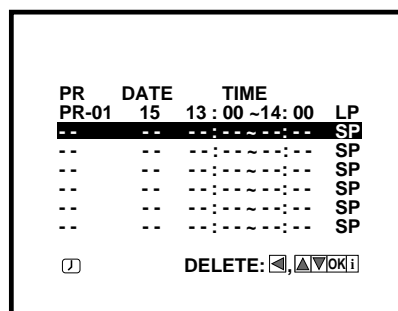
- Press CURSOR (▲/▼) to change the recording speed mode.  
LP: for Long Play.  
SP: for Standard Play.
- Use CURSOR (◀/▶) to delete incorrect entries.

# 8



Press **i** to store your programmes.

**NOTE:** If the programme data is incorrect, the command "PLEASE CHECK" will appear on the TV screen.  
Return to the incorrect programme and enter the correct data.



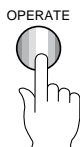
# 9

Additional programmes can now be entered by repeating steps 3 to 8.

# 10

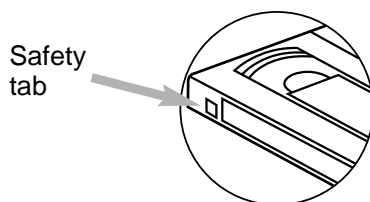
Press **i** to remove the menu from the TV screen.

# 11




When you finish specifying programmes and want to set the VCR to record them, be sure to:

- Insert a blank cassette with a safety tab into the cassette compartment, and press OPERATE to turn the VCR's power off. (The timer recording indicator **TIMER** will appear on the Multi-Function Display.)



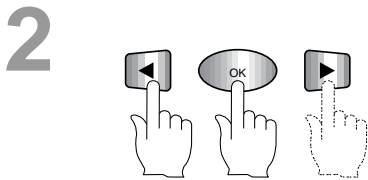
The VCR is now set to record the preset programmes.

**NOTE:** The cassette-in indicator  will blink on the Multi-Function Display, if you finish timer programming without a tape in the cassette compartment.

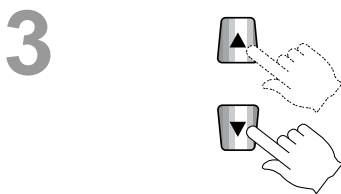
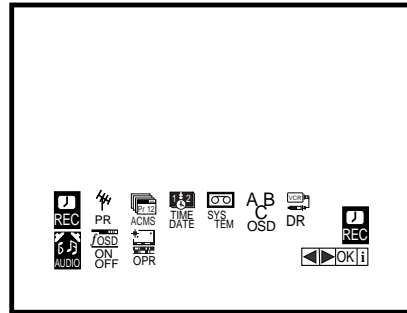
# Erasing A Timer Programme



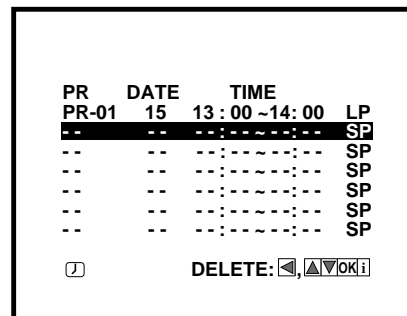
Press **i**.



Press CURSOR (◀▶) to select the "REC" and select it with OK.



Press CURSOR (▲▼) to select the programme that you want to delete.



Press CURSOR (◀) when the programme information to be erased is displayed.



When you finish erasing, press **i** again.

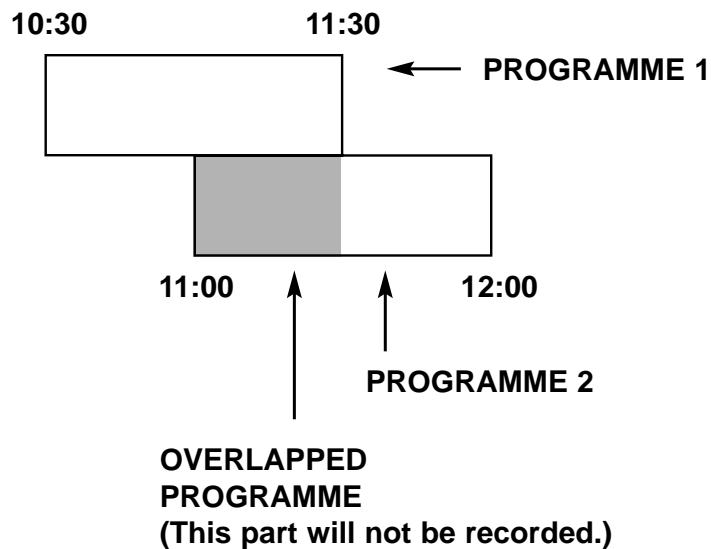
## If Timer Recording Events Overlap...

---

Make sure that the preset times of the timer recording events do not overlap. If they do, the earlier programme will always be given priority.

**Example:** Programme 1 is programmed to start at 10:30 and end at 11:30.  
Programme 2 is programmed to start at 11:00 and end at 12:00

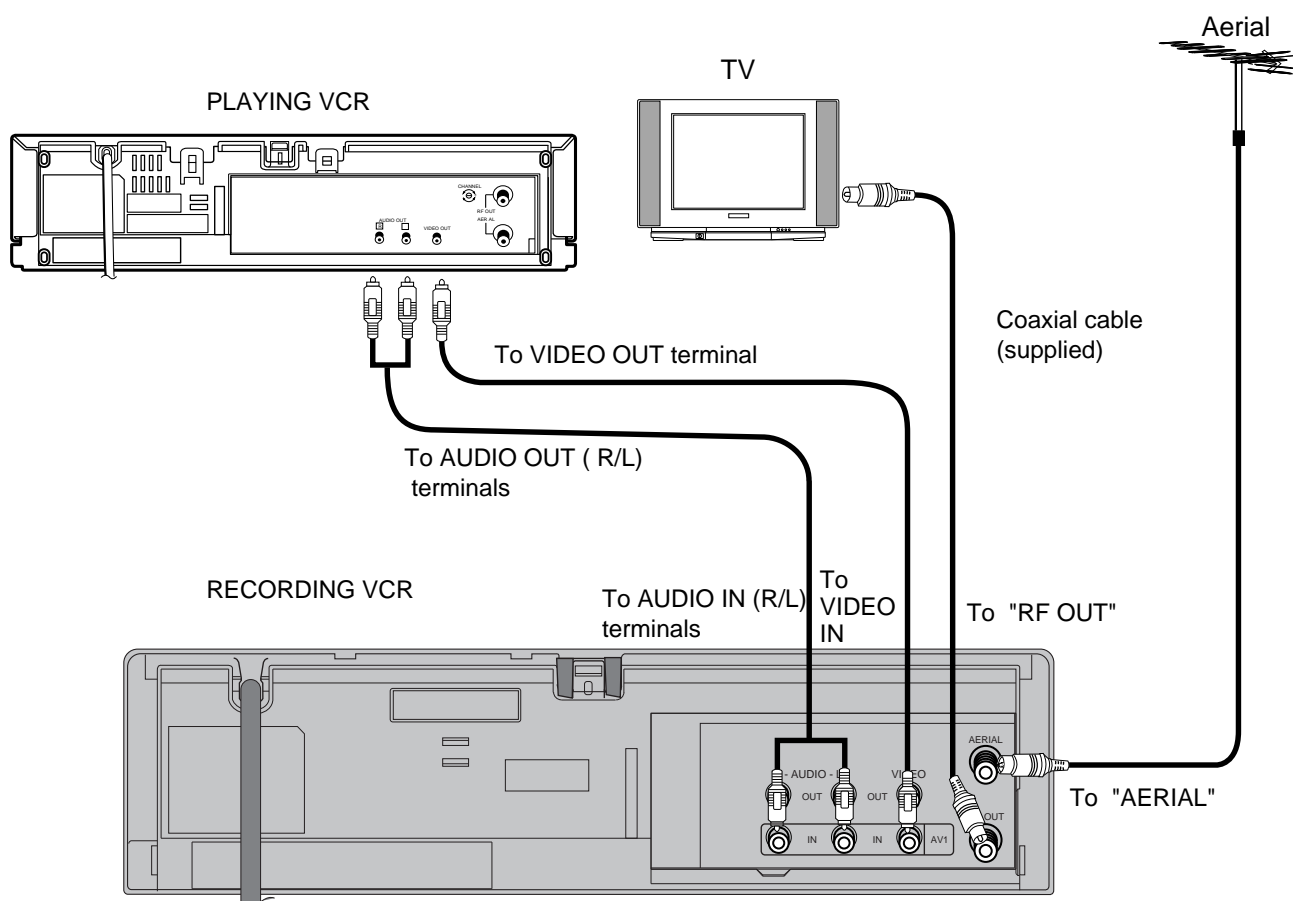
In this case, Programme 1 will be recorded in its entirety, but only the last 30 minutes of Programme 2 will be recorded.



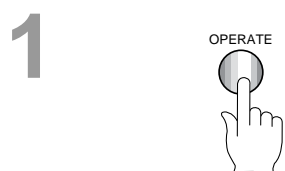
# Dubbing Tapes

It is possible to copy recorded material from one tape to another. In order to do this, you need to connect the VCR to another VCR as follows:

## Connecting Two VCRS to Each Other



## Dubbing Tapes



Press OPERATE buttons on both VCRs.



Press AV on the recording machine to the AV mode.

---

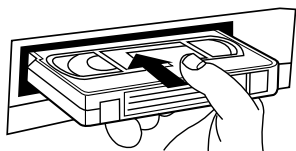
3

If both VCRs have AUDIO/VIDEO terminals, connect these terminals to each other.

Otherwise, connect the AUDIO/VIDEO OUT jacks of the playing VCR to the VIDEO IN and AUDIO IN jacks of the recording VCR.

---

4



Load the pre-recorded cassette into the playing VCR. And load the blank video cassette into the recording VCR.

---

5

Start playback on the playing VCR and start recording on the recording VCR.

---

**NOTES:**

- If VH-602 is the recording VCR, select the AV mode by pressing AV.
- Unauthorized recording of copyrighted television programmes, films, video tapes and other material may infringe the right of copyright owners and be contrary to copyright laws.

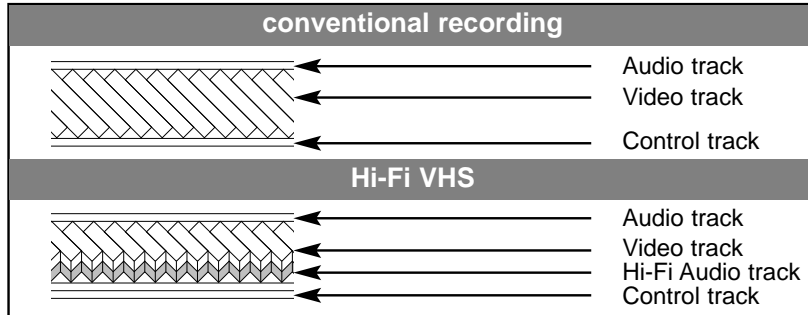
Recording that you make of television broadcasts or other pre-recorded materials may not be used for any purpose other than personal viewing without the consent of the copyright holder.

---

# Audio Track System

This VCR is equipped with a VHS Hi-Fi audio sound system for recording and playback of sound. Further to this, it can also receive stereo and bilingual broadcasts for maximum video enjoyment.

The VCR has regular audio track and two VHS Hi-Fi audio tracks, allowing you to record sound in STEREO or BILINGUAL modes from TV broadcasts, a stereo audio system, stereo video disc player or VCR, and play them back in STEREO or BILINGUAL mode. Connect the VCR to your audio system for enhanced listening enjoyment when viewing video tapes. A mono audio sound signal is recorded automatically onto the mono audio track, even if Hi-Fi is selected for recording.



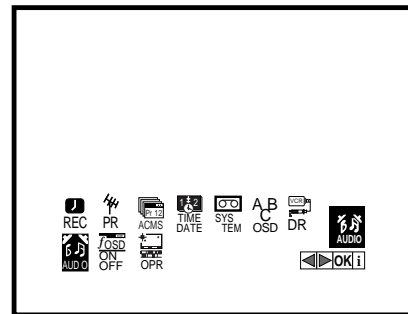
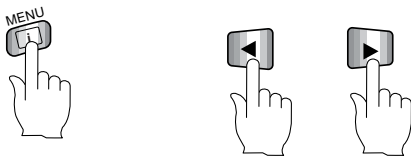
## Recording Hi-Fi Audio Sound

Both Hi-Fi audio and normal audio sound are recorded automatically during regular video recording (i.e. it is not necessary to select the AUDIO mode for recording).

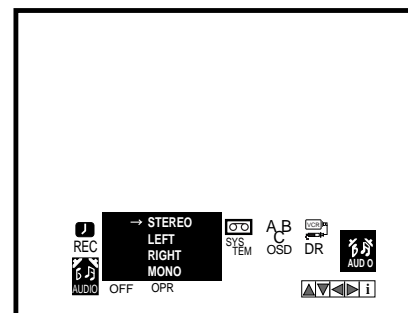
## Playing Back Hi-Fi Audio Sound

Press **i** and select AUDIO by pressing CURSOR (◀▶).

1



Press OK and select the desired audio mode by pressing CURSOR (▲▼). (STEREO, LEFT, RIGHT or MONO).



2

Other operations are the same as for normal playback.

## NOTES:

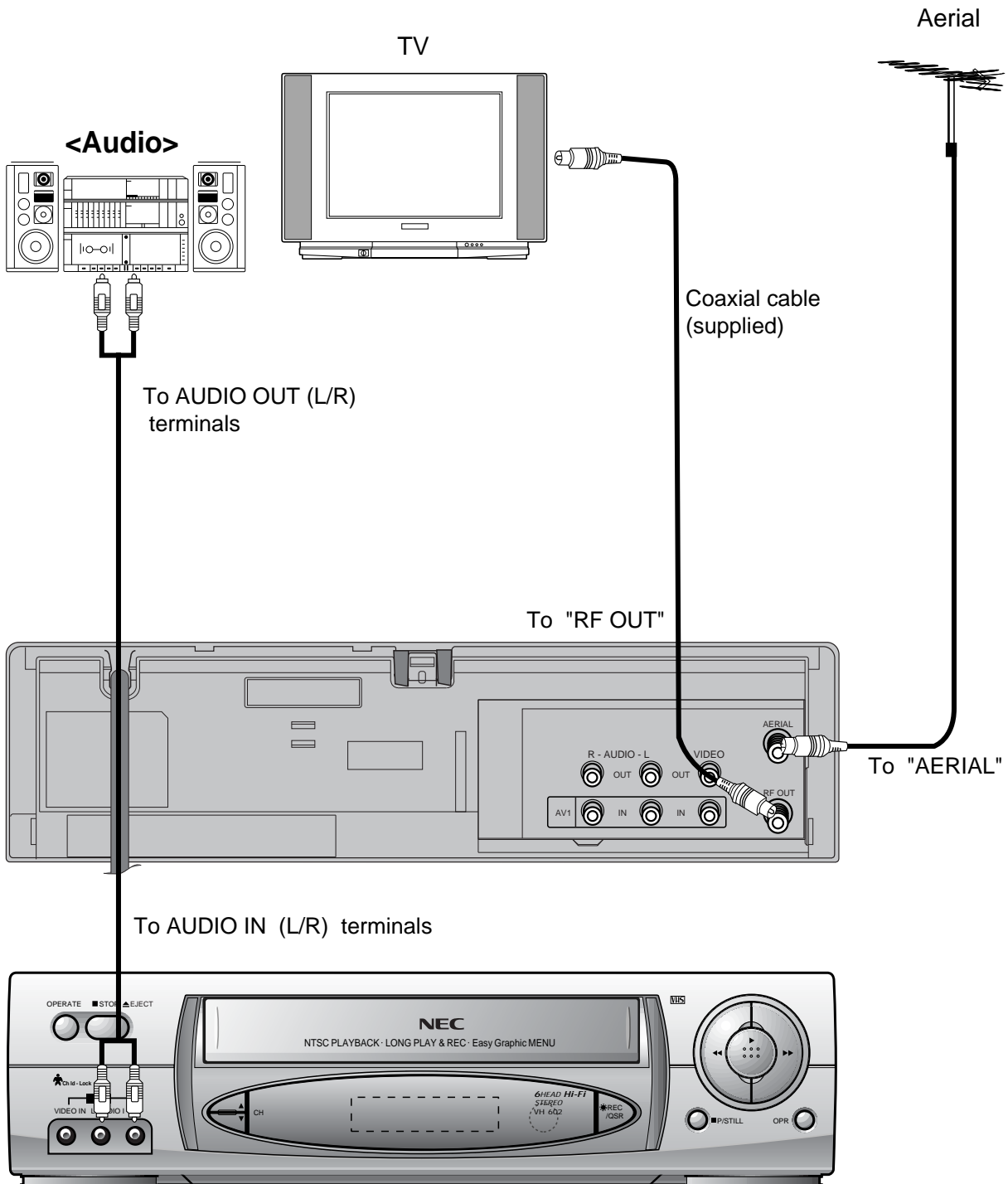
- A difference in audio level may be detected between Hi-Fi and normal audio playback.
- During tracking control adjustment, the Hi-Fi audio sound may revert to normal audio sound. This is normal. To get back the Hi-Fi audio sound, simply re-adjust the tracking control again.



# Simulcast Recording and Playback

This feature enables you to simulcast sound transmitted by an audio source and the picture transmitted by the TV station.


## Additional Connections



---

### Simulcast Stereo Recording

**1** Connect the stereo tuner or receiver to the left and right AUDIO INPUT connectors (AV2) on the front panel of the VCR.

**2**  Press AV to select SIMULCAST (SC).

**3** Adjust the stereo sound quality on your stereo tuner or receiver.

**4** Other operations are the same as for general recording.

---

### Simulcast Stereo Playback

**1** Connect the VCR and TV.

**2** If the VCR is connected both to a stereo TV and your audio system, turn on your audio system and set the TV sound to minimum.

**3** Other operations are the same as general playback.

---

---

## AV Button



Used for selecting the video input source and the appropriate audio tracks for recording. This button has no effect during playback.

---

## Tuner (TU position)

Mono TV broadcasts are recorded automatically and simultaneously onto the mono audio track and VHS Hi-Fi tracks. Stereo broadcasts are recorded in the same way.

---

## Simulcast (SC position)

Selects the video signal from the built-in tuner (TV programme) and the audio signal from a unit connected to the front panel AUDIO INPUT L and R terminals.

---

## Audio/video (AV1 or AV2 position)

Selects the video and audio signals from the units connected to the front panel or rear panel VIDEO INPUT and AUDIO INPUT L and R terminals.

---

# Receiving Stereo or Bilingual Broadcasts

The VCR can receive stereo or bilingual broadcasts sound signals.

---

## Receiving TV Sound (Stereo or Bilingual)

- When the stereo indicator STEREO is on, the VCR will record in stereo onto the VHS Hi-Fi audio tracks (it will also record mono audio onto the mono audio track).
- When the bilingual indicator is on, the VCR will record the main language onto the mono track and the main and sub languages separately onto the right and left Hi-Fi audio tracks.

---

## Bilingual Indicator - BIL

Display when a bilingual broadcast is being received.

---

## Stereo Indicator - STEREO

Display when a stereo broadcast is being received.

### NOTE:

Depending on the broadcast, one or both indicators will display.

---

## Recording Options Depending on Broadcast

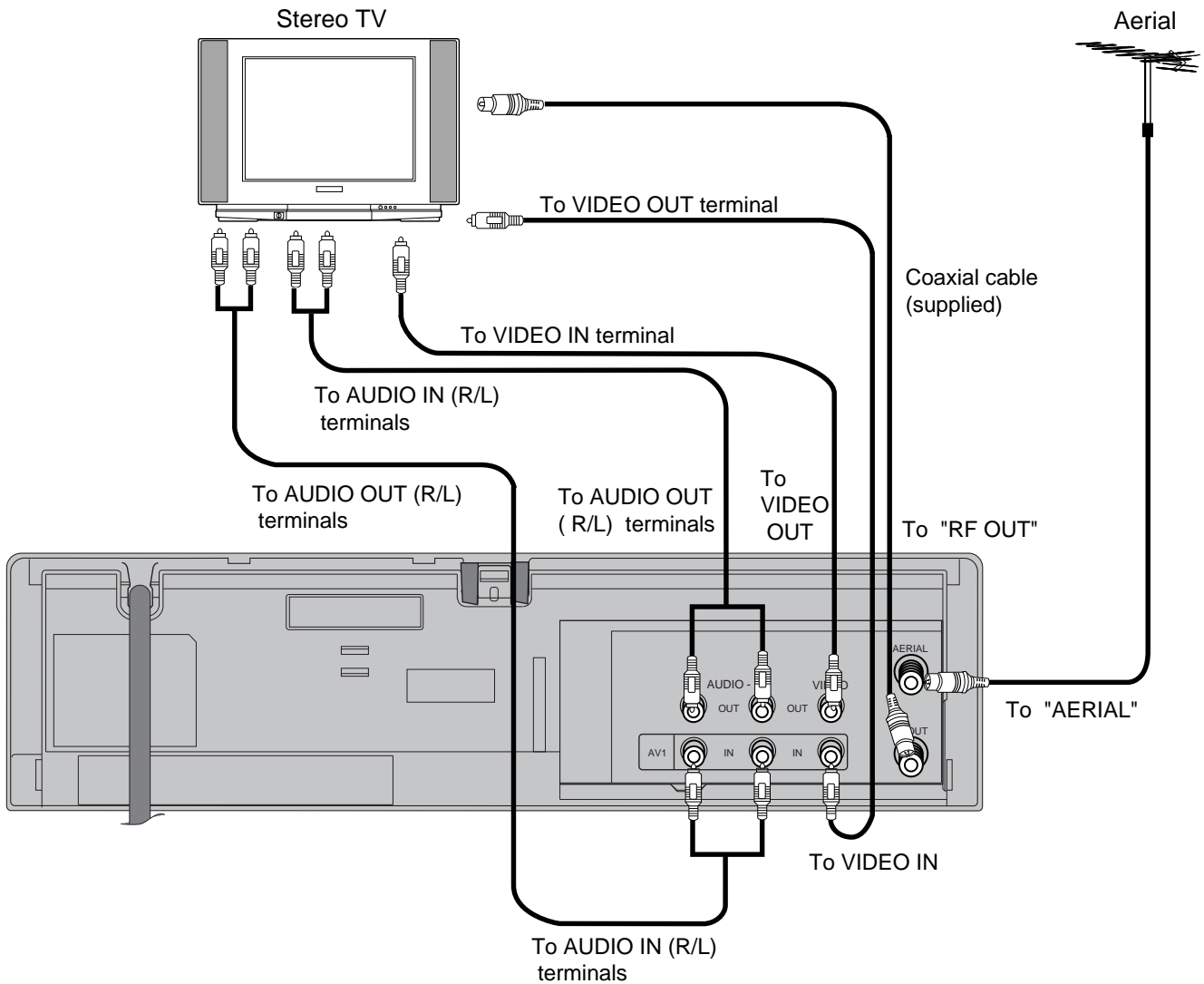
BROADCAST TYPE	AUDIO TRACKS		
	MONO TRACK	Hi-Fi TRACK	
		L-CH	R-CH
STEREO	L-CH+R-CH	L-CH	R-CH
BILINGUAL	L-CH (MAIN)	L-CH (MAIN)	R-CH (SUB)

- Press AV and select TUNER or AV1 (or AV2) to record mono audio programmes.
- Press AV and select TUNER or AV1 (or AV2) to record stereo audio programmes.
- Press AV and select TUNER to record bilingual audio programmes.

All operations are identical with the normal recording procedures.

---


## Playing Back a Tape Recorded in Stereo or Bilingual Mode



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**1** Connect the VCR to a stereo audio system or a stereo TV as shown in the illustration.

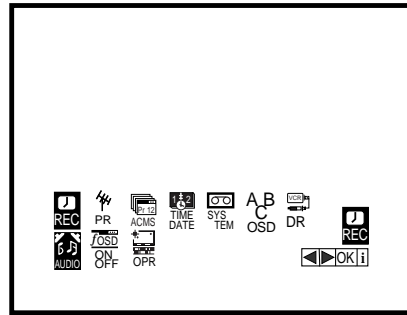
---

**2**  Start playback of the tape.

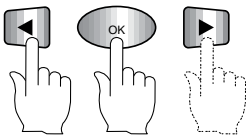
3



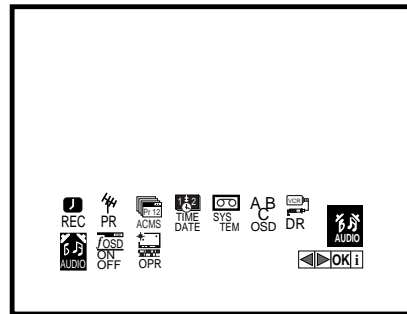
Press i button.



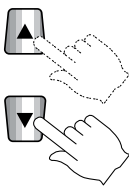
4



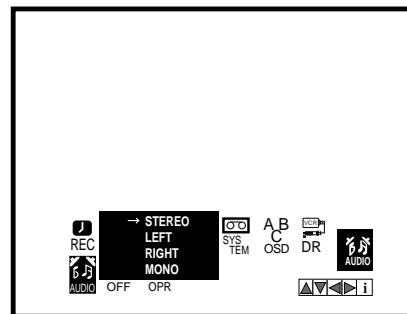
Press CURSOR (◀▶) to select "AUDIO" menu and press OK button.



5



Press CURSOR (▲▼) to select desired audio output mode.



**NOTES:**

- If the audio output mode is set to STEREO while playing a pre-recorded bilingual audio programme, the primary language (L) and the secondary language (R) will be heard simultaneously.
- If the VCR is connected to the TV through 75 Ohm coaxial cable, the audio portion of a stereo or bilingual pre-recorded tape will be heard in mono.
- Select the desired audio output mode when playing back a bilingual tape.

# Before Requesting Service

Before requesting service, check the following items.

<b>PROBLEM</b>	<b>CHECK</b>	<b>CORRECTION</b>
No Power	Unit plugged in?	Plug in the power cord and switch on.
Video cassette cannot be inserted	Is there a video cassette already in?	Replace it. • Insert the video cassette with the window side up and the safety tab facing you.
Auto Play does not work	Is erasure prevention tab intact?	Auto Play only works when erasure prevention tab has been broken off.
TV programmes cannot be recorded	Is connection between VCR and aerial correct? Has the receiving channel of VCR been tuned correctly? Is erasure prevention tab intact?	Check and correct the connections.  Tune into the channel correctly.  If broken off, fix adhesive tape over the hole.
Timer recording does not work	Has the recording start / end times been set correctly?  Is the timer recording indicator TIMER lit?	Set the times correctly. • If there is a power interruption before or during timer recording, timer recording will be interrupted. Make sure the timer recording indicator TIMER lights.
No playback picture	Is TV tuned to the VCR RF output channel?	Tune the TV to the VCR's RF output channel.
Playback picture is noisy or contains streaks		Press TRK (+/-). If the picture is still noisy, then press CURSOR (▲/▼) to set correct tracking.
Top of playback pictures waves back and forth excessively	Is tracking correct?	Adjust the horizontal hold control on the TV. If no result, play another tape.

---

## Power Failures

If the timer was programmed, all programmed information will be lost in the course of the failure, and if timer recording is in progress it will be interrupted.

---

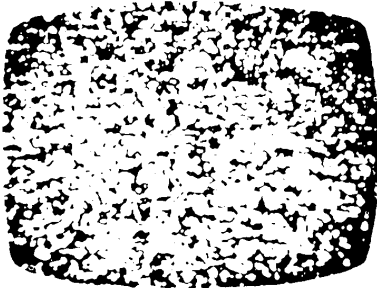
## If Tape Movement Stops Automatically

- If trouble occurs during tape movement or in the mechanism inside the VCR, a safety device works to stop the operation of the VCR. This prevents damage to the tape. If this occurs, the power will be turned off automatically.
  - If moisture (condensation) is present on the head drum, the VCR cannot be operated. Remove the video cassette and let the VCR remain unused, for a couple of hours.  
During the winter months, when condensation may easily form, the power cord of the VCR should remain connected to the mains.
- 

## Cleaning the VCR

- Wipe off the VCR exterior with a clean, dry cloth. Never use cleaning fluids, chemicals or wax.
- 

## Video Head Cleaning



This VCR incorporates an automatic head cleaner which operates whenever the cassette is ejected or inserted.

Cleaning of the video and audio heads is the customer's responsibility and is not covered under the terms of the warranty. Always use quality tapes to reduce the frequency of cleaning.

Dirt accumulation on the head after long periods of use can cause problems.

If high quality video tapes are used in this unit, the video heads should not normally require cleaning. However it is possible that the heads may become clogged when playing old or damaged tapes.

If the image on your screen contains a lot of snow when playing back tapes with quality recordings (see illustration on left), the heads may require cleaning.



# General Notes

- After playing a video tape, remove it from the VCR if the VCR is not going to be used for a long time.
- Do not transport the VCR with a video cassette inserted.
- It is a good idea to save the original shipping carton and packing material. They will come in handy for moving the VCR in the future or returning it in for service.
- Disconnect the VCR from the mains during electrical storms.

# Precautions

Please read these precautions before operating this unit.

- Avoid extreme heat, cold, moisture and dust.
- Do not use near magnetic fields (this will adversely affect the unit's performance).
- Do not wipe the surface of the case with volatile agents such as benzene, alcohol, thinner, chemically processed cloths, etc. These could damage the surface finish or cause the coating to peel.
- Use the unit only in a horizontal position. Do not place heavy objects on the VCR.
- Keep the unit away from flower vases, tubs, sinks, etc. If any liquids should spill into the unit, serious damage could occur. In this case, please disconnect the VCR from the mains and consult qualified service personnel.
- Do not obstruct the ventilation holes. Even soft materials such as paper and cloth can prevent proper ventilation of the recorder.

# Moisture Condensation

When the VCR is moved from a cold place to a warm place, moisture can condense on the HEAD DRUM ASSEMBLY. Attempting to play or record a tape in this situation could result in accidental damage to the tape.

---

## To prevent this:

- Plug the VCR's electric cord into an AC power outlet.
- Wait for about two hours before attempting to play or record a tape.

# Specifications

Tape Format	: Tape Width 1/2" (12.7 mm high density VHS tape)
Video Recording System	: Double Azimuth 4 heads, helical scanning system
Video Signal System	: PAL colour format
Tape Width	: 12.7 mm (1/2 inch)
Tape Speed	: 23.39 mm/sec (SP mode) 11.69 mm/sec (LP mode)
Maximum Recording Time	: 4 Hours in SP mode/8 Hours in LP mode
Fast Forward/Rewind Time	: Less than 65(±10) secs (with E-180 cassette)
Power Source	: ~100-240V, 50/60Hz
Power Consumption	: Approx. 14 Watts
Operating Temperature	: 5°C - 35°C
Operating Humidity	: Less than 80%
Dimensions (W x H x D)	: 360 x 94 x 270 (14.2" x 3.7" x 10.6")
Weight	: About 3.4Kg (7.5 lbs)
Clock	: 24 hour display type

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## VIDEO

Input	: VIDEO IN (RCA type) 1.0 Vp-p, 75 ohms, unbalanced
Output	: VIDEO OUT (RCA type) 1.0 Vp-p, 75 ohms, unbalanced
S/N Ratio	: More than 43 dB
RF Modulation	: UHF Channel 28-68 (Adjustable)

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## AUDIO

Input	: AUDIO IN (RCA type) -6.0 dBs, More than 47 kohm
Output	: AUDIO OUT (RCA type) -6.0 dBs, Less than 1 kohm
Audio Frequency Response	: NORMAL: 100Hz-10KHz (+3/-6 dB) Hi-Fi: 20Hz-20KHz (±3 dB)
S/N Ratio	: Hi-Fi AUDIO: More than 75 dB
Dynamic Range	: Hi-Fi AUDIO: More than 80 dB

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## PROVIDED ACCESSORIES

User's Manual x 1  
Remote Control Unit  
AAA (AM-4) size 1.5 volt batteries x 2  
Aerial Connection Cable  
Audio & Video Cables

- Designs and specifications are subject to change without notice.



**NEC Australia Pty Ltd  
A.B.N. 86 001 217 527  
Personal Product Group**

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**NEC Service Centres  
New South wales**

Sydney	184 Milperra Rd, Revesby, 2212	(02) 9780-8688
Newcastle	120 Parry Street, Newcastle West, 2302	(02) 4926-2466

**Victoria**

Melbourne	480 Princes Highway, Noble Park, 3174	(03) 9554-6245
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**Queensland**

Brisbane	116 Ipswich Road, Woollongabba, 4102	(07) 3361-5858
Southport	Shop 1, 48 Ferry Road, Southport, 4215	(07) 5591-3670

**South Australia**

Adelaide	58 Deeds Road, North Plympton, 5037	(08) 8294-9477
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**Western Australia**

Perth	45 Sarich Court, Osborne Park, 6017	(08) 9446-5333
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For service in outer areas, please contact your NEC retailer for the address of the nearest NEC Australia Pty. Ltd. Authorized Service Centre.

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