SONY_®

3-858-297-**11**(1)

Video Cassette Recorder

Operating Instructions



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WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel

only. The mains lead must only be changed at a

qualified service shop.

Precautions

Safety

- This unit operates on 110 240 V AC, 50/60 Hz. Check that the unit's operating voltage is identical with your local power supply.
- If anything falls into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- The unit is not disconnected from the mains as long as it is connected to the mains, even if the unit itself has been turned off.
- Unplug the unit from the mains if you do not intend to use it for an extended period of time. To disconnect the lead, pull it out by the plug, never by the lead.

Installing

- Allow adequate air circulation to prevent internal heat buildup.
 Do not place the unit on surfaces (rugs,
- Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation slots.
- Do not install the unit near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.
- Do not install the unit in an inclined position. It is designed to be operated in a horizontal position only.
- Keep the unit and cassettes away from equipment with strong magnets, such as microwave ovens or large loudspeakers.
- Do not place heavy objects on the unit.
 If the unit is brought directly from a cold to a warm location, moisture may condense inside the VCR and cause damage to the video head and tape. When you first install the unit, or when you move it from a cold to

a warm location, wait for about one hour

before operating the unit.

Caution

Television programmes, films, video tapes and other materials may be copyrighted. Unauthorized recording of such material may be contrary to the provisions of the copyright laws. Also, use of this recorder with cable television transmission may require authorization from the cable television transmitter and/or programme owner.

Compatible colour systems

This VCR is designed to record and play back using the PAL (B/G and D/K), MESECAM (B/G and D/K), and NTSC colour systems. Recording of video sources based on other colour systems cannot be guaranteed.

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- * G-CODE is a trademark applied for by Gemstar Development Corp. G-CODE system is manufactured under license from Gemstar Development Corporation.

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Getting Started

Getting Started

Step 1 Unpacking

Check that you have received the following items with the VCR:

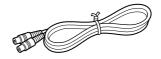
• Remote commander



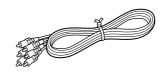
• R6 (size AA) batteries



• Aerial cable



• Audio/video cable (3-phono to 3-phono)

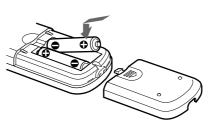


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Setting up the remote commander

Inserting the batteries

Insert two R6 (size AA) batteries by matching the + and – on the batteries to the diagram inside the battery compartment.

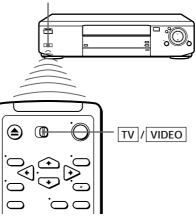


Getting Started

Using the remote commander

You can use this remote commander to operate this VCR and a Sony TV. Buttons on the remote commander marked with a dot (•) can be used to operate your Sony TV.





To operate	Set TV/VIDEO to
the VCR	VIDEO and point at the remote sensor on the VCR
a Sony TV	TV and point at the remote sensor on the TV

Notes

- The TV/VIDEO button selects an input source of the TV from aerial in or line in. The button does not control this VCR.
- With normal use, the batteries should last about three to six months.
- If you do not use the remote commander for an extended period of time, remove the batteries to avoid possible damage from battery leakage.
- Do not use a new battery with an old one.
- · Do not mix different types of batteries.

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Step 2: Setting up the remote commander (continued)

Controlling other TVs with the remote commander

The remote commander is preprogrammed to control non-Sony TVs. If your TV is listed in the table below, set the appropriate manufacturer's code number.

- **1** Set $\underline{TV} / \underline{VIDEO}$ at the top of the remote commander to \underline{TV} .
- 2 Hold down u, and enter your TV's code number(s) using the number buttons. Then release u.

Now you can use the u, VOL +/-, PROG +/-, programme number buttons, ? (ten's digit) and TV/VIDEO buttons to control your TV. You can also use the buttons marked with a dot (•) to control a Sony TV. To control the VCR, reset TV/VIDEO to VIDEO.

Tip

• If you set your TV's code number correctly while the TV is turned on, the TV turns off automatically.

Code numbers of controllable TVs

If more than one code number is listed, try entering them one at a time until you find the one that works with your TV.

Manufacturer	Code number	Manufacturer	Code number
Sony	01*1,02,03,04,05	Inno-Hit	41
Aiwa	32	Irradio	20
Akai	68	ITT/Nokia	15,16,69*3
Blaupunkt	10,21	JVC	33*1
Brionvega	40	Loewe	45
C.G.M	09	Mitsubishi	27* ¹ ,28* ¹ ,50* ¹ ,51* ¹
Colonad	03	Mivar	09
Dual	44	NEC	66
Emerson	03,04	Nordmende	35,42
Fenner	30,31	Orion	47,48
Ferguson	52	Panasonic	17*1,49
Gold Star	03,04,17	Philips	06 * ¹ ,07 * ¹ ,08 * ¹
Grundig	10*1,11*1	Phonola	18,19
Hitachi	24	Pioneer	26
Hyper	31		

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Manufacturer	Code number	Manufacturer	Code number
Saba	12,13	Sinudyne	37
Samsung	22,23	TEAC	67
Sanyo	25	Telefunken	36
Schneider	46	Thomson	43*2
Seleco	14	Toshiba	38
Sharp	29	White	
Siemens	39	- Westinghouse	34

You can use the WIDE button after entering a code number with any of the following marks;

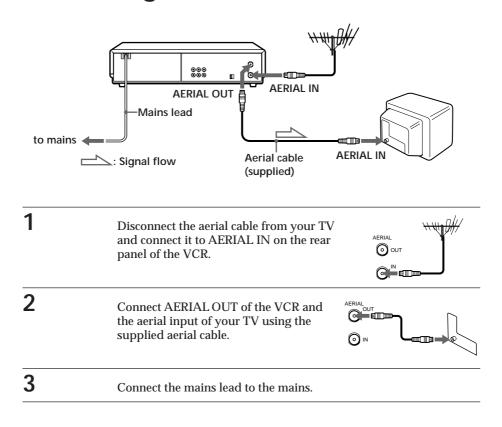
- *¹: Press WIDE to switch the wide picture mode on or off.
- $^{\ast 2}$: Press WIDE, then press VOL+/– to select the wide picture mode you want.
- *³: Press WIDE. The menu appears on the TV screen. Then, press CURSOR >/./?// to select the wide picture you want and press EXECUTE.

Notes

- If the TV uses a different remote control system from the one programmed to work with the VCR, you cannot control your TV with the remote commander.
- If you enter a new code number, the code number previously entered will be erased. When you replace the batteries of the remote commander, the code number
- automatically resets to 01 (Sony). Reset the appropriate code number.

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Connecting the VCR



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Additional connections

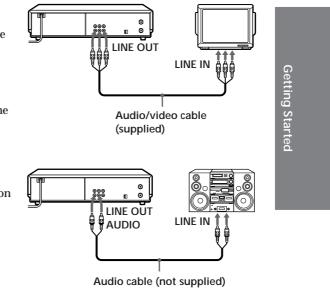
To a TV that has audio/video input jacks

This additional connection improves picture and sound quality. Connect the TV as shown on the right.

If you want to use the Trinitron TV Synchro Play function (see page 29), this connection is necessary. (If your TV has two or more inputs, connect the audio/video cable to the VIDEO IN 1 jacks.)

To a stereo system

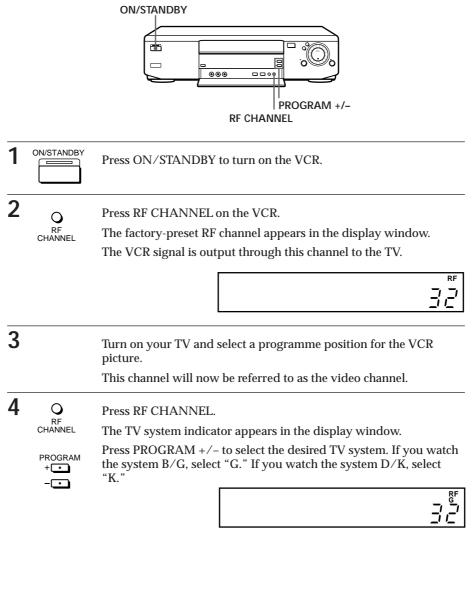
You can improve sound quality by connecting a stereo system as shown on the right.





Tuning your TV to the VCR

If you have connected your VCR to the TV using the audio/video cable, skip this step.



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5		Tune the TV to the same channel as that shown in the display window so that the picture on the right appears on the TV screen.	SONY VIDEO CASSETTE RECORDER
		Refer to your TV manual for tuning instructions.	
		If the picture does not appear clearly, see "To obtain a clear picture from the VCR" below.	Getting :
6	RF CHANNEL	Press RF CHANNEL. You have now tuned your TV to the VCR. Fre you want to play a tape, set the TV to the vide	

To check to see if the TV tuning is correct

Set the TV to the video channel and press PROGRAM +/- on the VCR. If the TV screen changes to a different programme each time you press PROGRAM +/-, the TV tuning is correct

To obtain a clear picture from the VCR

If the picture does not appear clearly in step 5 above, press PROGRAM +/- in step 5, so that another RF channel appears. Then tune the TV to the new RF channel until a clear picture appears.

Note

• If you set the wrong TV system, you may have no sound or sound may be distorted (noisy sound).

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Selecting a language

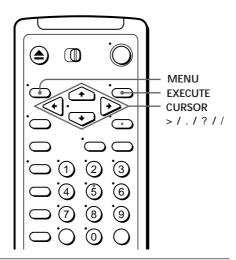
You can change the on-screen display language from English to Chinese.

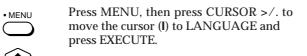
Before you start...

EXECUT

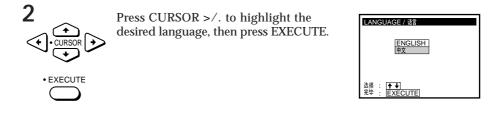
1

- Turn on the VCR and the TV.
- Set the TV to the video channel.









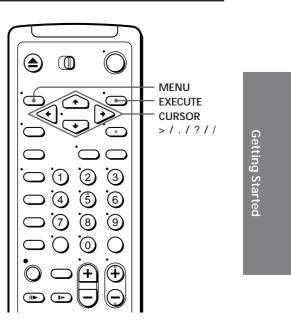
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Presetting channels

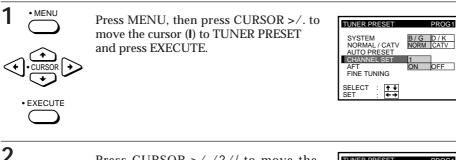
First, we recommend that you preset the receivable channels in your area using automatic presetting. Then, if some channels could not be preset automatically, you can preset them manually; if there are any unwanted channels among the preset ones, you can disable the channels.

Before you start...

- Turn on the VCR and the TV.
- Set the TV to the video channel.



Presetting all receivable channels automatically





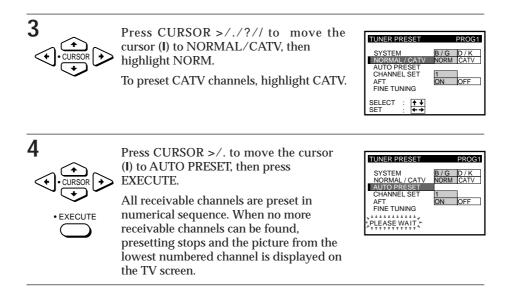
Press CURSOR >/./?// to move the cursor (I) to SYSTEM, then select either B/G or D/K, whichever is applicable in your area. If SYSTEM is set to the wrong position, the sound will be distorted or noisy.

TUNER PRESET	PROG1
SYSTEM NORMAL / CATV AUTO PRESET CHANNEL SET AFT FINE TUNING	B/G D/K NORM CATV 1 ON OFF
SELECT : ★↓ SET : ←→	

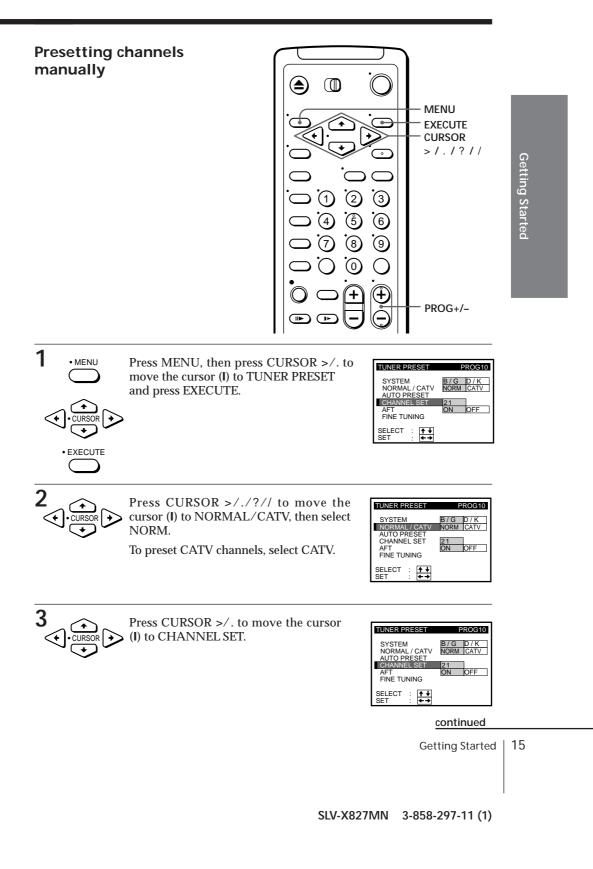
continued

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Step 6: Presetting channels (continued)



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Step 6: Presetting channels (continued)

	Press PROG +/- to sel position.	ect the programme	Selected programm position
	Press CURSOR / repea channel you want is dis Pressing CURSOR ? g previous channels. The channels are scann order:	splayed. oes back to the	TUNER PRESET PROG14 SYSTEM B/G NORMAL/CATV NORM [CATV AUTO PRESET 35 AFT GN FINE TUNING SELECT SET :
	Channel coverage	System D/K	System B/G
	VHF	R1-R12	NZ1–NZ9, E2–E12
	UHF	R21-R69	E21-E69
	CATV (TV distribution)		C1 C41 C01 C07
			S1-S41, S01-S05
	If you know the number programme number bu "0" and then press "5."		vant, press the
	If you know the number programme number bu	ttons. For example, for rted or noisy, press move the cursor (I) either B/G or D/K,	vant, press the or channel 5, first press
$\frac{6}{\underbrace{\begin{array}{c} & & \\ & & \\ & & \\ & & \\ & & \\ \hline \end{array}}}$	If you know the number programme number bu "0" and then press "5." If the TV sound is disto CURSOR>/./?// to to SYSTEM, then select	ttons. For example, for rted or noisy, press move the cursor (I) either B/G or D/K, e in your area.	vant, press the or channel 5, first press TUNER PRESET PROG14 SYSTEM B/G D/K NORMAL/CATV AUTO PRESET CHANNEL SET AFT FINE TUNING SELECT : SET : S

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Disabling unwanted programme positions

After tuning the TV channels, you can disable unused programme positions. The disabled positions will be skipped later when you press the PROG +/- buttons. You can also disable unwanted programme positions using the SET UP CH AND G-CODE menu (page 23).

- **1** In step 5 above, press programme number button "0" twice to display the number "0" beside CHANNEL SET.
- **2** Press EXECUTE.

If the picture is not clear

Normally, the Auto Fine Tuning (AFT) function automatically tunes in channels clearly. If, however, the picture is not clear, you may also use the manual tuning function.

- **1** Press PROG +/- to select the programme number for which you cannot obtain a clear picture.
- 2 Press MENU, then select TUNER PRESET and press EXECUTE.
- **3** Select FINE TUNING. The fine tuning meter appears.

TUNER PRESET	PROG14
SYSTEM NORMAL / CATV AUTO PRESET	B/G D/K NORM CATV
CHANNEL SET	35 ON OFF
FINE TUNING	
SET : ++	

4 Press CURSOR ?// to get a clearer picture, then press EXECUTE. Note that the AFT (Auto Fine Tuning) setting switches to OFF.

Note

• The menu disappears automatically if you don't proceed for more than a few minutes.

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Setting up **G-CODE**

G-CODE is a feature in Sony VCRs that simplifies programming the VCR to make timer recordings. To use G-CODE, each programme position needs to be matched with its G-CODE guide channel. To get the guide channel numbers, look in the programme guide for your area that features G-CODE numbers.

· If you want to record satellite broadcasts using G-CODE, see page 20.

Before you start...

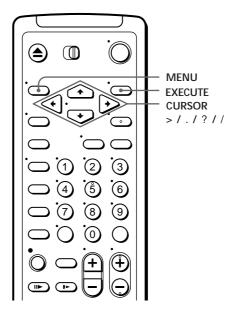
• MENU

EXECUTE

1

- Turn on the VCR and the TV.
- Set the TV to the video channel.

screen.



Press MENU, then press CURSOR >/. to SET UP CH AND G-CODE move the cursor (I) to SET UP CH AND GUIDE G-CODE and press EXECUTE. 12 27 The preset channels are displayed on the 56 5 SELECT MOVE PR RASE PI ROG



Press CURSOR >/. to move the cursor (I) to the row on which you want to set the guide channel.

To display other pages for programme positions 6 to 50, press CURSOR >/. repeatedly.

SET UP O	CH AN	D G-CODE
PROG	СН	GUIDE CH
1	3	
2	9	
3	12	
4	27	
5	56	
SELECT		: ++
MOVE PF	ROG	: →
ERASE P	ROG	: TIMER CLEAR

CF

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	Press CURSOR / twice to highlight the guide channel column.	SET UP CH AND G-CODE PROG CH 1 3 2 9 3 12 4 27 5 56 SELECT GUIDE CH : ▲ ● CONFIRM : ▲ ●
	Press CURSOR >/. to select the guide channel number assigned in the programme guide.	SET UP CH AND G-CODE PROG CH GUIDE CH 1 3 2 9 3 12 - 6 4 12 - 6 5 56 SELECT GUIDE CH : ••
	Press CURSOR ?// to confirm the setting. The cursor (I) appears in the leftmost column.	SET UP CH AND G-CODEPROGCHGUIDE1329312-6427556SELECT: $\widehat{1}$ MOVEPROG:ERASEPROG:
6	To set the guide channel of another station, If you want to change the programme posit proceed to step 2 of "Step 8: Changing/disa positions" on page 21.	ions of the stations,
	Press EXECUTE.	

continued

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Step 7: Setting up G-CODE (continued)

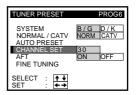
Setting up G-CODE for satellite broadcasts

When your satellite tuner is connected via the AERIAL IN connector, first you have to set the programme position for each satellite channel using the TUNER PRESET menu. Then set the guide channel number for each satellite channel using the SET UP CH AND G-CODE menu.

If your satellite tuner is connected via the LINE-1 IN jacks, you don't have to set programme positions nor guide channel numbers for satellite channels. Skip the following operations.

- **1** Turn on the satellite tuner.
- 2 Press MENU, then select TUNER PRESET and press EXECUTE.
- **3** Press PROG +/- to select a programme position you want to use for watching a satellite channel.
- 4 Select CHANNEL SET, then press CURSOR / to tune the VCR to the satellite tuner.

The channel number displayed beside CHANNEL SET is used for receiving all satellite broadcasts from the satellite tuner.



5 Press PROG +/- to select another programme position for another satellite channel, and press the programme number buttons to enter the same channel number as the one displayed in step 4.

Repeat this step for all satellite channels.

6 Set the guide channel number for each programme position assigned to the satellite channel, following the procedures in "Step 7: Setting up G-CODE" on page 18.

Notes

- The menu disappears automatically if you don't proceed for more than a few minutes.
- If you inadvertently entered a guide channel number, press CURSOR >/. repeatedly to reset the "GUIDE CH" column to "---." "---" appears between 1 and 255.
- The VCR does not allow entering the guide channel number, if the same number has been set.
- If you use a satellite tuner connected via the LINE-1 IN jacks, you don't have to setup G-CODE. Just record a satellite programme using G-CODE, and the VCR automatically records the programme from the LINE-1 IN jacks.
- When you record a satellite broadcast using G-CODE, you need to select the desired channel on the satellite tuner manually.

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Changing/ disabling programme positions

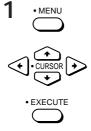
After setting the channels and G-CODE guide channels, you can change the programme positions as you like. If any programme positions are unused or contain unwanted channels, you can disable them.

Before you start...

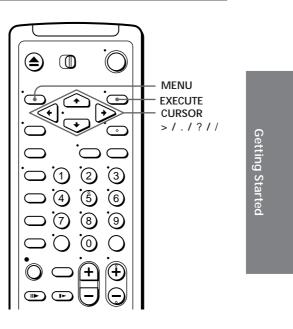
- Turn on the VCR and the TV.
- Set the TV to the video channel.

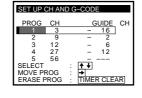
Changing programme positions

e.g. Moving the programme position from 3 to 1



Press MENU, then press CURSOR >/. to move the cursor (I) to SET UP CH AND G-CODE and press EXECUTE.







Press CURSOR >/. to move the cursor (I) to the row on which you want to change the programme position, then press CURSOR /.

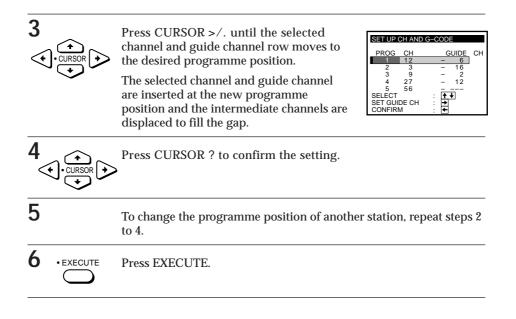
To display other pages for programme positions 6 to 50, press CURSOR >/. repeatedly.

SET UP CH AN	D G-CODE
PROG CH 1 3	GUIDE CH - 16
2 9 3 12	- 2
4 27 5 56	- 12
SELECT SET GUIDE CH CONFIRM	: + : +

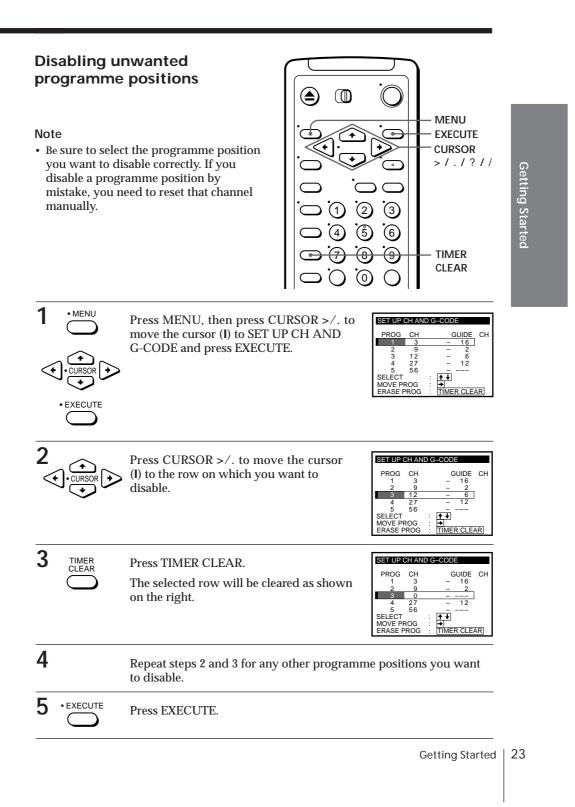
continued

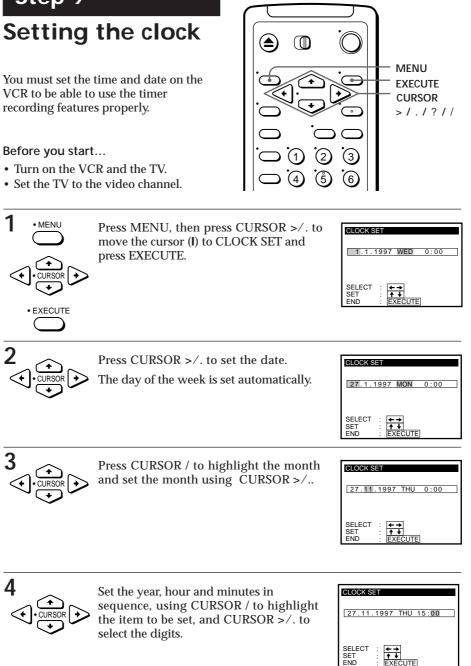
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Step 8: Changing/disabling programme positions (continued)



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• EXECUTE Press EXECUTE to start the clock.

Тір

5

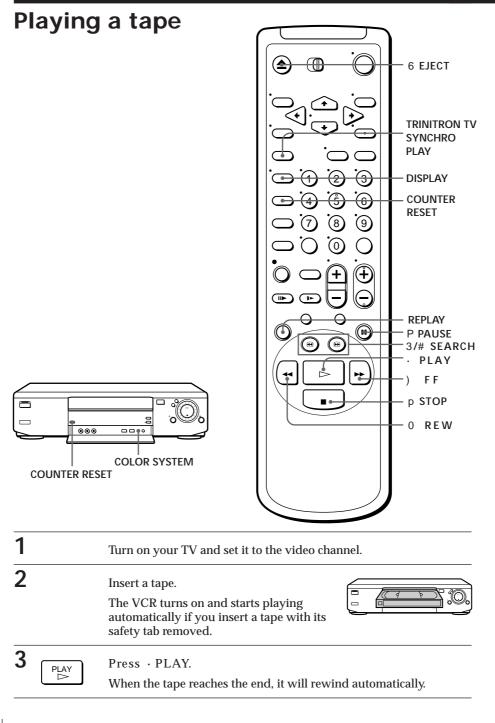
• To change the digits during setting, press CURSOR ? to return to the item to be changed, and select the digits using CURSOR >/..

Note

• The menu disappears automatically if you don't proceed for more than a few minutes.

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Basic Operations



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Additional tasks

То	Press
Stop play	p STOP
Pause play	P PAUSE
Resume play after pause	P PAUSE or · PLAY
Search forward) FF or # SEARCH during playback
Search backward	0 REW or 3 SEARCH during playback
Fast-forward the tape) FF during stop
Rewind the tape	0 REW during stop
Eject the tape	6 EJECT

Replaying a recently watched scene

You can immediately rewind and playback the scene you want to watch again.

During playback, press REPLAY up to four times. The VCR rewinds the tape 10 seconds for each press of the button, and restarts playback.

To set the colour system

If streaks appear during playback, press COLOR SYSTEM on the VCR to confirm to the system that the tape was recorded in. (Normally, the colour system is correctly set whenever the tape is inserted.)

If your tape was recorded in	Press COLOR SYSTEM until the indication below appears in the display window.
PAL	PAL
NTSC	NTSC
MESECAM	PAL

To play an NTSC-recorded tape

Set NTSC PB at the rear of the VCR according to the color system of your TV.

If your TV is	Set NTSC PB to
PAL	ON PAL TV
NTSC 4.43	NTSC 4.43
NTSC 3.58	NTSC 3.58

continued

Basic Operations

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Playing a tape (continued)

To use the time counter

At the point on the tape that you want to find later, press COUNTER RESET. The counter in the display window resets to "0H00M00S." Search for the point afterwards by referring to the counter.



To display the counter on the TV screen, press DISPLAY.

Notes

- The counter resets to "0H00M00S" whenever a tape is reinserted.
- The counter stops counting when it comes to a portion with no recording.
- If a tape has portions recorded in both PAL and NTSC systems, the time counter reading will not be correct. This is due to the difference between the counting cycles of the two video systems.
- Depending on your TV, the following may occur while playing an NTSC-recorded tape:
 - the picture is black and white
 - the picture shakes
 - no picture appears on the TV screen
 - black streaks appear horizontally on the TV screen
 - the colour density increases or decreases.

28 Basic Operations

Turning on the VCR and TV, and starting playback automatically (Trinitron TV Synchro Play)

You can only use this function if your TV is made by Sony (Trinitron TV).

How to connect to use this function

Connect the VCR and TV with the audio/video cable (see "To a TV that has phono type audio/video input jacks" on page 9.) Be sure to connect the audio/video cable to the VIDEO IN 1 jacks on the TV if the TV has two inputs or more. The TV must be placed where it will respond to the remote commander while you are pointing it at the VCR.

Operation

Make sure that the TV's power is in standby mode.

Press TRINITRON TV SYNCHRO PLAY and hold the remote commander in place for about two seconds.

The VCR and TV turn on, and the TV is set to VCR reception. If there is a tape in the VCR, playback starts automatically.

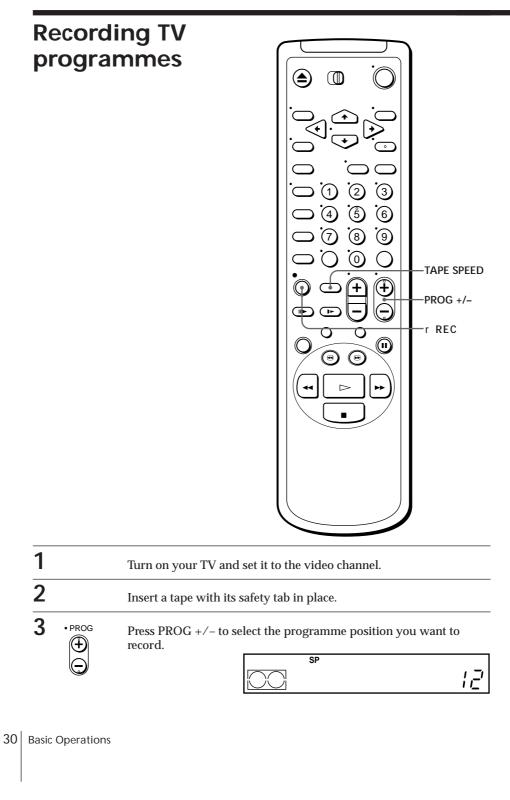
Notes

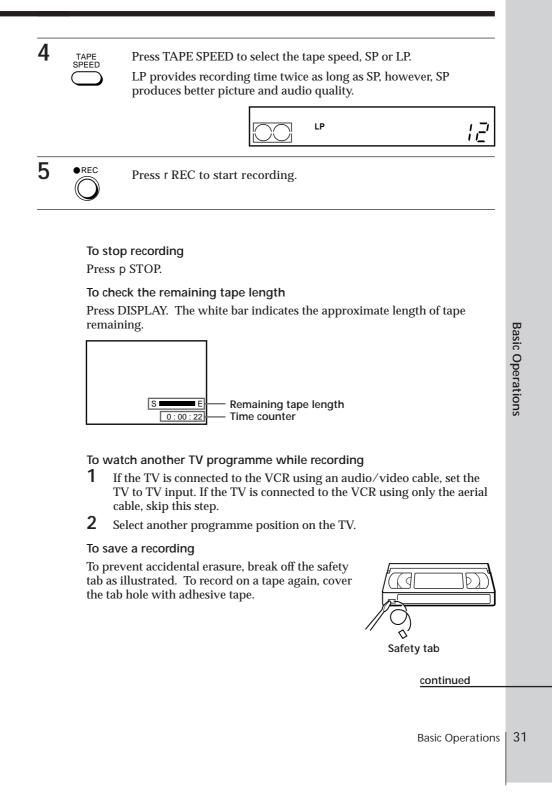
- If the Trinitron TV Synchro Play function does not work properly:
 - Wait a few moments, and press the button again.

– Replace both of the batteries with new ones, and press the button again. Note that this function may not operate some Sony TVs because of the remote commander's signal limitations.

• Do not press TRINITRON TV SYNCHRO PLAY while playing back a video tape. If you do so, the TV's input source will momentarily switch to the TV's tuner.

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Recording TV programmes (continued)

To record NTSC colour system programmes

NTSC colour signals can be recorded on this VCR.

For tape speed, select SP or EP in step 4.

EP provides recording time three times as long as SP, however, SP produces better picture quality.

When playing back, the VCR automatically detects the tape speed.

Tips

- To select a programme position, you can use the programme number buttons on the remote commander. For two-digit numbers, press the ? (ten's digit) button followed by the programme number buttons.
- You can select a video source from the LINE-1 IN or the LINE-2 IN jacks using INPUT SELECT on the VCR.
- The display appears on the TV screen indicating information about the tape, but the information won't be recorded on the tape.
- If you don't want to watch TV while recording, you can turn off the TV.

Notes

- The display does not appear during still (pause) mode or slow-motion playback.
- The display will not appear while playing an NTSC-recorded tape.

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Recording TV programmes using G-CODE

Just enter the programme's G-CODE number listed in the TV programme guide. The date, times and programme position of that programme are set automatically. You can preset up to eight programmes at a time.

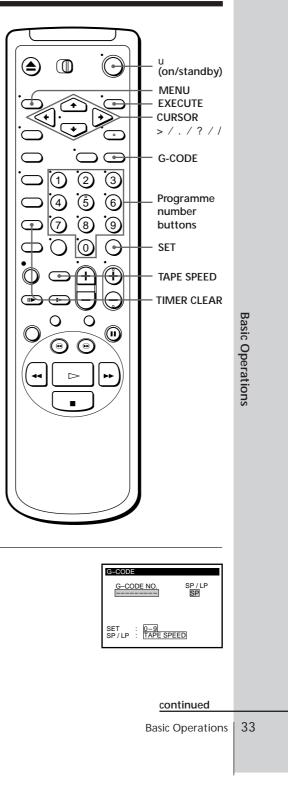
Before you start...

1

G-CODE

- Check that the VCR clock is set to the correct time.
- Insert a tape with its safety tab in place. Make sure the tape is longer than the total recording time.
- Turn on your TV and set it to the video channel.

Press G-CODE.



Recording TV programmes using G-CODE (continued)

2	() () () () () () () () () () () () () (Press the programme numb enter the programme's G-C If you make a mistake, pres CLEAR and re-enter the con	G-CODE B2477691- SP ONCE DAILY WEEKLY SELECT : CONFIRM : SET CANCEL : TIMER CLEAR				
3	SPEED	Press TAPE SPEED to select	t SP or LP.	C-CODE G-CODE NO. SP/LP 82477691- LP ONCE DAILY WEEKLY SELECT : ←→ CONFIR : SET CANCEL : TIMER CLEAR			
4 ⊲		Select ONCE, DAILY or WI using CURSOR ?//, then		G-CODE G-CODE NO. SP/LP 82477691 RECORDING TIME			
		To record	Select	DATE START STOP PROG 1.12MON 20:00 22:00 58 LP			
	SET	Only once	ONCE	CANCEL : TIMER CLEAR			
	\bigcirc	Everyday Monday to Friday	DAILY				
		Once a week	WEEKLY				
		The date, start and stop tim appear on the TV screen.	es, programme po	osition, and tape speed			
	If the information is not correct, press TIMER CLEAR to cance setting.						
5		To enter another setting, repeat steps 1 to 4.					
6	· ^c	Press u to turn off the VCR. The TIMER indicator appears in the display window and the VCR stands by for recording.					

To stop recording

To stop the VCR while recording, press p STOP.

34 Basic Operations

To record satellite broadcasts

If you connect the satellite tuner and the VCR, you can record satellite programmes.

- **1** Turn on the satellite tuner.
- 2 On the satellite tuner, select the satellite programme for which you wish to make a timer setting.
- **3** Repeat the steps described above.
- **4** Keep the satellite tuner turned on until the VCR finishes recording the satellite programme for which you have made a timer setting.

To use the VCR after setting the timer

To use the VCR before a timer recording begins, just press u. The TIMER indicator turns off and the VCR switches on. Remember to press u to reset the VCR after using the VCR.

You can also do the following tasks while the VCR is recording:

- Reset the counter.
- Display tape information on the TV screen.
- Check the timer settings.
- Watch another TV programme.
- Tip

• To cancel the procedure, press G-CODE before pressing SET.

Note

- If the VCR beeps repeatedly, this means that:
 - The G-CODE number is incorrect.
 - ONCE, DAILY, or WEEKLY was selected incorrectly. You cannot select DAILY or WEEKLY for a programme that airs more than seven days ahead.

Basic Operations | 35

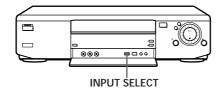
Basic Operations

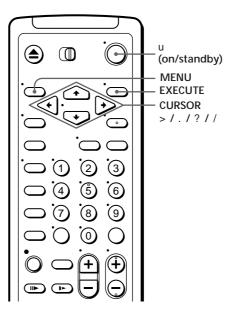
Setting the timer manually

If G-CODE is not available in your area, follow the instructions below to set the timer to record programmes.

Before you start...

- Check that the VCR clock is set to the correct time.
- Insert a tape with its safety tab in place. Make sure the tape is longer than the total recording time.
- Turn on your TV and set it to the video channel.





 1
 MENU
 Press MENU and select TIMER SET/ CHECK, then press EXECUTE.

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Set the date, start and stop times, programme position, and tape speed:

1 Press CURSOR / to highlight each item in turn.

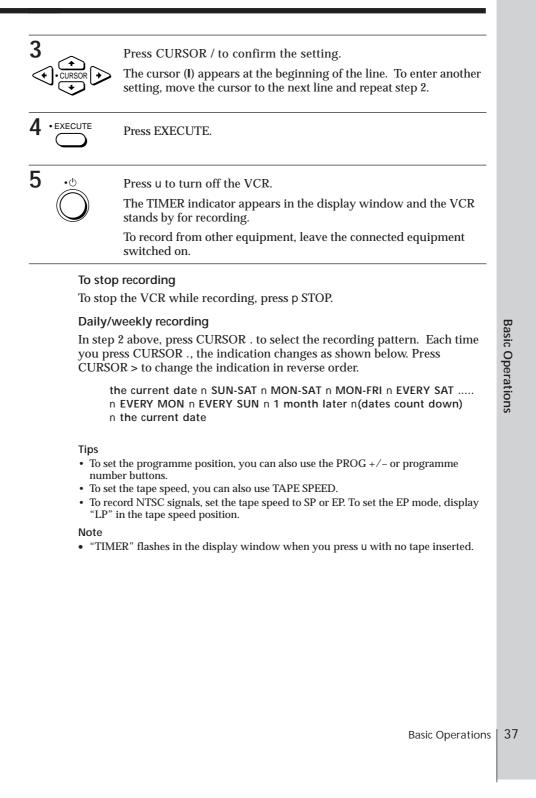
2 Press CURSOR >/. to set each item. To correct a setting, press CURSOR ? to return to that setting and reset.

TIMER SET	/ CHECK	9	. 12 .	TUE
DATE	START	STOP	PR	ЭG
10.12WED	-:	-:		SP
	-:	-:		-
	-:	-:		-
	-:	-:		-
	-:	-:		-
	-:	-:		-
	-:	-:		-
	-:	-:		-

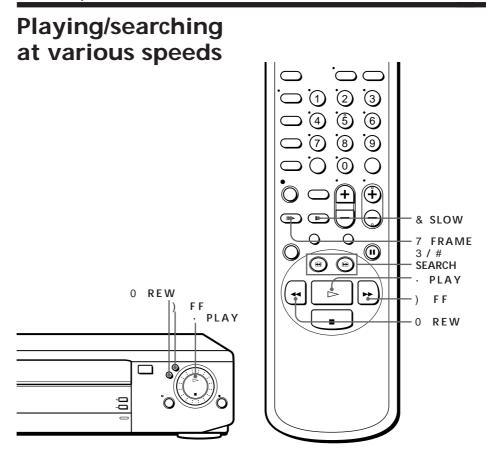
To record the same programme every day or the same day every week, press CURSOR . while the date is highlighted. For details, see "Daily/weekly recording" on the next page.

To record from a source connected to the LINE-1 IN or the LINE-2 IN jacks, press INPUT SELECT on the VCR to display "LINE1" or "LINE2" in the "PROG" position.

36 Basic Operations



Additional Operations



Playback options	Operation
Fast-forward/rewind	During stop, press) FF or 0 REW.
View the picture during fast- forward or rewind	During fast-forward, hold) FF down. During rewind, hold 0 REW down.
Play at high speed	During playback or pause, press # SEARCH or 3 SEARCH. To change direction, press the other one.
Play in slow motion	During playback or pause, press & SLOW.
Play frame by frame	During pause, press 7 FRAME. Hold the button down to play one frame each second.
Rewind and start play	During stop, hold 0 REW <u>on the VCR</u> , and press \cdot PLAY <u>on</u> <u>the VCR</u> .

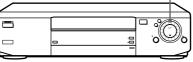
To resume normal playback Press \cdot PLAY.

38 | Additional Operations

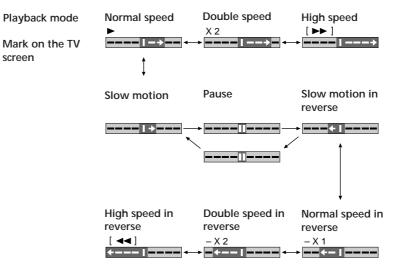
Using the CLICK SHUTTLE ring

With the CLICK SHUTTLE ring, you can operate a variety of playback options.

During playback or pause, turn the CLICK SHUTTLE ring clockwise or anticlockwise. Each change in the CLICK SHUTTLE ring position changes the playback mode, and the CLICK SHUTTLE ring



corresponding mark appears on the TV screen for a few seconds in the following way if the on-screen display function is on:



Тір

- Adjust the picture using TRACKING +/- on the VCR if:
 - streaks appear while playing in slow motion
 - bands appear at the top or bottom while pausing
 - the picture shakes while pausing.

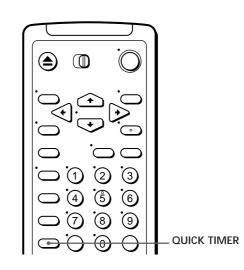
Notes

- The playback sound is muted during these operations.
- In LP mode, noise may appear or there may be no colour.
- If the playback mode mark doesn't appear on the TV screen, press DISPLAY.

Additional Operations 39

Recording TV programmes using the quick timer

After starting recording in the normal way, you can have the VCR stop recording automatically after a specified duration.



1 While recording, press QUICK TIMER on the VCR once.



2 Press QUICK TIMER repeatedly to set the duration.

Each press advances the time in increments of 30 minutes.

→ 0:00 → 0:30 → 1:00 ----→ 10:30 → 11:00-

The duration decreases minute by minute to 0:00, then the VCR stops recording and turns off automatically.

To extend the duration

Press QUICK TIMER repeatedly to set to the new duration.

To stop recording

To stop the VCR while recording, press p STOP.

Тір

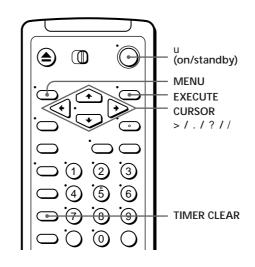
• You can also set the quick timer and start recording during the stop mode.

40 | Additional Operations

Checking/ changing/ cancelling timer settings

Before you start...

• Turn on your TV and set it to the video channel.



- **1** Press u to turn on the VCR.
- **2** Press MENU, then select TIMER SET/CHECK:
 - If you want to change a setting, go on to the next step.
 - If you do not need to change the settings, press EXECUTE, then turn off the VCR to return to recording standby.

TIMER SET	/ CHECk	(9	12 TUE
DATE	START	STOP	PROG
1 O . 12WED			
6.1 TUE			
28.12SUN			
17.12WED	9:58	12:00	LINE2 SP
MON SAT			
EVERY SUN	23:00	0:00	LINE1 SP
	-:	-:	
	-:	-:	

- **3** Press CURSOR >/. to select the setting you want to change or cancel:
 - To change the setting, press CURSOR ?// to highlight the item you want to change, and press CURSOR >/. to reset it. Then, press CURSOR / repeatedly until the cursor (I) appears at the beginning of the line.
 - To cancel the setting, press TIMER CLEAR.
- 4 Press EXECUTE.

If any settings remain, turn off the VCR to return to recording standby.

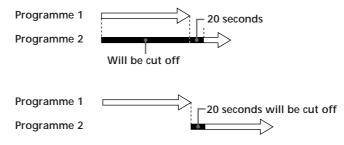
continued

Additional Operations | 41

Checking/changing/cancelling timer settings (continued)

When the timer settings overlap

The programme that starts first has priority and the second programme starts recording only after the first programme has finished. If the programmes start at the same time, the programme listed first in the menu has priority.



42 | Additional Operations

Recording stereo and bilingual programmes

In ZWEITON (German stereo) system

This VCR automatically receives and records stereo and bilingual programmes based on the ZWEITON system. When a stereo or bilingual programme is received, the STEREO indicator appears in the display window.

To select bilingual sound while recording

Press AUDIO MONITOR to select the sound you want.

To listen to	On-screen display	Display window
Main	MAIN	STEREO
Sub	SUB	STEREO
Main and sub	MAIN/SUB	STEREO

In NICAM system

This VCR receives and records stereo and bilingual programmes based on the NICAM system (the NICAM indicator appears). When a stereo or bilingual programme is received, the STEREO indicator appears in the display window.

To record a NICAM programme, HIFI AUDIO in the SET UP MENU should be set to NICAM (initial setting). To check the menu setting, see page 47 for details.

To select the sound while recording

Press AUDIO MONITOR to select the sound you want.

Stereo programme

To listen to	On-screen display	Display window
Stereo	STEREO	STEREO
Standard sound*	No indicator	No indicator

* Usually the mixed sound of left and right channels (monaural)

continued

Additional Operations | 43

Recording stereo and bilingual programmes (continued)

Bilingual programme		
To listen to	On-screen display	Display window
Main	MAIN	STEREO
Sub	SUB	STEREO
Main and sub	MAIN/SUB	STEREO
Standard sound*	No indicator	No indicator

* Usually the main sound (monaural)

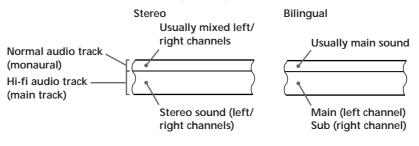
Selecting the sound during playback

Press AUDIO MONITOR to select the sound you want.

To listen to	On-screen display	Display window
Stereo/main and sub (left and right channels)	STEREO	STEREO
Left channel/main	LCH	STEREO
Right channel/sub	RCH	STEREO
Standard sound	No indicator	No indicator

How sound is recorded on a video tape

The VCR records sound onto two separate tracks. Hi-fi audio is recorded onto the main track along with the picture. Monaural sound is recorded onto the normal audio track along the edge of the tape.



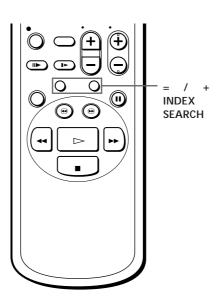
Notes

- To play a tape in stereo, you must use the AUDIO OUT connections.
- When you play a tape recorded in monaural, the sound is heard in monaural regardless of the AUDIO MONITOR setting.
- If the AUDIO MONITOR button does not function, check that AUDIO MIX in the SET UP MENU is set to OFF.
- If HIFI AUDIO is set to STD, the standard sound will be recorded on both the hi-fi and normal audio tracks. Pressing AUDIO MONITOR will not change the sound.

44 Additional Operations

Searching using the index function

The VCR marks the tape with an index signal at the point where each recording begins. Use these signals as references to find a specific recording. The VCR can search up to 99 index signals ahead of or behind the current position.



- **1** Insert an indexed tape into the VCR.
- 2 Press =/+ INDEX SEARCH repeatedly to specify how many index signals ahead or behind you want to search:
 - To search ahead, press + INDEX SEARCH.
 - To search backwards, press =INDEX SEARCH.

The VCR starts searching and the index number on the TV screen counts down to zero. Playback starts automatically from that point.

To stop searching

Press p STOP.

Note

• No index signal will be added when recording starts from recording pause. However, an index signal will be marked if you change the channel during recording pause.



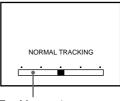
Additional Operations 45

Adjusting the picture

Adjusting the tracking

Although the VCR automatically adjusts the tracking when playing a tape (the tracking indicator \boxtimes flashes in the display window, then goes off), distortion may occur if the tape was recorded in poor condition. If so, manually adjust the tracking.

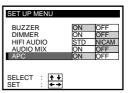
Press the TRACKING +/- buttons to display the tracking meter. The distortion should disappear as you press one of the two buttons (The \boxtimes indicator lights up). To resume automatic tracking adjustment, eject the tape and reinsert it.



Tracking meter

About Adaptive Picture Control (APC)

Adaptive Picture Control (APC) automatically improves recording and playback quality by adjusting the VCR to the condition of the video heads and tape. To maintain better picture quality, we recommend that you set APC to ON in the SET UP MENU (with the APC indicator in the display window lit).



APC playback

The APC function automatically works on all types of tapes, including rental tapes and tapes that were not recorded with APC.

APC recording

Whenever you insert a tape and first start recording, the VCR adjusts to the tape using the APC function (the APC indicator flashes rapidly). This adjustment is retained until the tape is ejected.

To deactivate the APC

Press MENU and select SET UP MENU, then set APC to OFF. The APC indicator in the display window goes off.

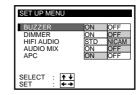
Note

• There is a delay of a few seconds before the VCR actually starts recording while the VCR analyses the tape. To avoid the delay, first set the VCR to recording pause (the APC indicator flashes slowly) and press r REC to have the VCR analyse the tape (the APC indicator flashes rapidly). After the APC indicator stops flashing, press P PAUSE to start recording immediately. If you want to start recording quickly without using the APC function, first set the VCR to recording pause (the APC indicator flashes slowly) and press P PAUSE to start recording pause (the APC indicator flashes slowly) and press P PAUSE to start recording.

46 | Additional Operations

Changing menu options

1 Press MENU, then select SET UP MENU.



- 2 Press CURSOR >/. to select the option to change, then press CURSOR ?// to change the setting.
- **3** Press EXECUTE to return to the original screen.

Menu choices

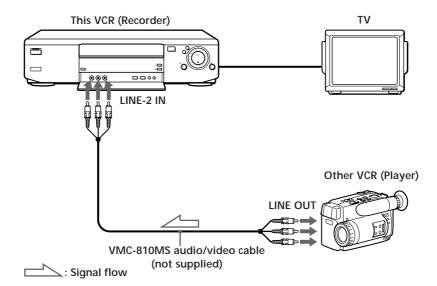
Initial settings are indicated in bold print.

Menu option	Set this option to
BUZZER	ON to output a beep sound when all illogical operation is made. OFF to deactivate it.
DIMMER	ON to make the display window dim, OFF to make it brighter.
HIFI AUDIO	STD to record standard sound on the hi-fi audio track. NICAM to record NICAM broadcasts on the hi-fi audio track. For details, see page 43.
AUDIO MIX	ON to listen to the hi-fi and normal audio tracks at the same time. The AUDIO MONITOR button will not function. OFF to listen to hi-fi and normal audio tracks separately. Select the sound using the AUDIO MONITOR button.
APC	ON to switch on the APC (Adaptive Picture Control) function and improve picture quality, OFF to switch off APC.

Additional Operations | 47

Editing with another VCR

How to connect to record on this VCR



How to connect to a stereo system

Connect LINE-2 IN AUDIO on this VCR to the audio output jacks on the stereo system, using the RK-C510KS audio cable (not supplied).

Tips

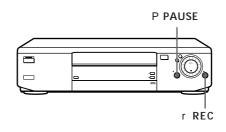
- Make sure you connect the plugs to jacks of the same colour.
- If the other VCR is a monaural type, connect the audio plug to the AUDIO L (white) jack. The sound is recorded on both right and left channels. When connecting to the AUDIO R (red) jack, the sound is recorded only on the right channel.
- If you connected this VCR to both the LINE IN and LINE OUT jacks of the other VCR, select the input correctly to prevent a humming noise.
- You can also use the LINE-1 IN jacks instead.

48 | Additional Operations

Operation (when recording on this VCR)

Before you start editing

- Turn on your TV and set it to the video channel.
- Press INPUT SELECT to display "L2" in the display window.
- Press TAPE SPEED to select the tape speed (SP or LP for the PAL system, and SP or EP for the NTSC system).



- **1** Insert a source tape with its safety tab removed into the other (playback) VCR. Search for the point to start playback and set it to playback pause.
- 2 Insert a tape with its safety tab in place into this (recording) VCR. Search for the point to start recording and press P PAUSE.
- **3** Press r REC on this VCR and set it to recording pause.
- **4** To start editing, press the P PAUSE buttons on both VCRs at the same time.

To stop editing

Press the p STOP buttons on both VCRs.

Tips

- To edit more precisely, press the P PAUSE buttons on the VCRs to release pause.
- To cut out unwanted scenes while editing, press P PAUSE on this VCR when an unwanted scene begins. When it ends, press P PAUSE again to resume recording.

Note

• If you start recording following the procedure above, the VCR won't start recording with the APC function. To record a tape with the APC function, press r REC again during recording pause in step 3 so that the VCR analyses the tape. Then when you start recording in step 4, press P PAUSE after the APC indicator stops flashing. If you press P PAUSE <u>before</u> the APC indicator stops flashing, the APC function is cancelled.

Additional Operations 49

Additional Information

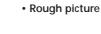
Troubleshooting

If you have any questions or problems not covered below, please consult your nearest Sony service facility.

	Symptom	Remedy
er	The ON/STANDBY switch does not function.	• Connect the mains lead to mains securely.
Power	The power is turned on but the VCR does not operate.	• Moisture condensation occurs. Turn the power off, unplug the mains lead and leave the VCR to dry for over one hour.
Clock	The clock has stopped and "-:" lights in the display window.	• The clock stops if the VCR is disconnected from the mains for more than an hour. Reset the clock (and timer).
	The playback picture does not appear on the TV screen.	• Make sure the TV is set to the video channel. If you are using a monitor, set it to video input.
Playback	The picture is not clear.	 Adjust the tracking with the TRACKING +/- buttons. Make sure the colour system is set to the system that the tape was recorded in. The video heads are dirty (see below). Clean the video heads using the Sony V-25CL video head cleaning cassette. If this cleaning cassette is not available in your area, have the heads cleaned at your nearest Sony service facility (a standard service charge will be required). Do not use a commercially available wet-type cleaning cassette, as it may damage the video heads. The video heads may have to be replaced. Consult your local Sony service facility for more information.
	The picture rolls vertically during picture search.	• Adjust the vertical hold control on the TV or monitor.
	The picture has no sound.	• The tape is defective. Use a new tape.
	The sound is unstable or has an echo.	• When you play a tape with the same sound recorded on both the hi-fi and normal sound tracks, make sure the AUDIO MIX option in the SET UP MENU is set to OFF.

Symptoms caused by contaminated video heads

- Normal picture



Unclear picture

 No picture (or black & white screen appears)









terminal

50 Additional Information

	Symptom	Remedy
	No TV programmes appear on the TV screen.	• Make sure the TV is set to the video channel. If you are using a monitor, set it to video input.
Recording	TV reception is poor.	 Adjust the TV aerial. Make sure SYSTEM (B/G or D/K) in the TUNER PRESET menu is set to the system in your area.
	The tape starts playing as soon as it is inserted.	• The safety tab has been removed. To record on this tape, cover the tab hole.
	The tape is ejected when you press r REC.	• Check that the safety tab has not been removed.
	Nothing happens when you press r REC.	 Make sure the tape is not at its end. Select the correct source with the INPUT SELECT button. Select a programme position when recording TV programmes; select "L1" or "L2" when recording from other equipment.
Timer recording	The timer does not operate.	 Check that the clock is set. Make sure a tape has been inserted. Check that the safety tab has not been removed. Make sure the tape is not at its end. Make sure a programme has been set for timer recording. Make sure your timer settings have not already passed the current time. Check that the satellite tuner is turned on. The clock stops if the VCR is disconnected from the mains for more than an hour. Reset the clock and timer.
	No tape can be inserted.	• Check that a tape isn't already in the tape compartment.
	The remote commander does not function.	 Make sure you are pointing the remote commander at the remote sensor on the VCR. Replace all the batteries in the remote commander with new ones if they are weak. Make sure the TV/VIDEO remote control switch is set correctly.
Others	You cannot control other TVs.	• Set your TV's code number. The code number resets to 01 when you replace the batteries of the remote commander.
	The tracking indicator does not appear on the screen.	• The recording condition of the tape is very poor and tracking cannot be adjusted, or the NTSC system is being used.
	The VCR needs to be cleaned.	• Clean the cabinet, panel and controls with a dry, soft cloth, or a soft cloth slightly moistened with a mild detergent solution. Do not use any type of solvent, such as alcohol or benzine.

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Specifications

System

Channel coverage VHF R1 to R12, E2 to E12, NZ1 to NZ9 UHF E21 to E69, R21 to R69 CATV S01 to S05, S1 to S41 RF output signal UHF channels 21 to 69 Aerial out 75-ohm asymmetrical aerial socket

Inputs and outputs

LINE-1 IN and LINE-2 IN VIDEO IN, phono jack (1 each) Input signal: 1 Vp-p, 75 ohms, unbalanced, sync negative AUDIO IN, phono jack (2 each) Input level: 327 mVrms Input impedance: more than 47 kilohms LINE OUT VIDEO OUT, phono jack (1) Output signal: 1 Vp-p, 75 ohms, unbalanced, sync negative AUDIO OUT, phono jack (2) Standard output: 327 mVrms Load impedance: 47 kilohms Output impedance: less than 10 kilohms

General

Power requirements 110 – 240 V AC, 50/60 Hz Power consumption 22 W Operating temperature 5°C to 40°C Storage temperature –20°C to 60°C Dimensions Approx. 430 × 109 × 308 mm (w/h/d) including projecting parts and controls Mass Approx. 4.5 kg

Supplied accessories

Remote commander (1) R6 (size AA) batteries (2) Aerial cable (1) Audio/video cable (3-phono to 3-phono) (1)

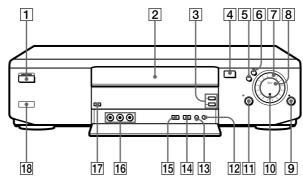
Design and specifications are subject to change without notice.

52 Additional Information

Index to parts and controls

Refer to the pages indicated in parentheses () for details.

Front panel



- 1 ON/STANDBY switch/indicator (10)
- 2 Tape compartment
- 3 PROGRAM/TRACKING +/buttons (10, 46)
- 4 6 EJECT button (27)
- 5 0 REW button (27, 38)
- 6) FF button (27, 38)
- 7 CLICK SHUTTLE ring (39)
- 8 · PLAY button (26, 38)
- 9 r REC button (31)

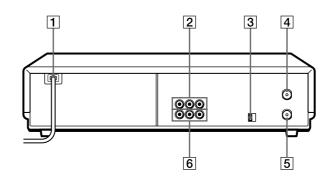
- 0 p STOP button (27, 31)
- ! ¡ P PAUSE button (27, 49)
- !™ RF CHANNEL button (10)
- ! £ COLOR SYSTEM button (27)
- ! ¢ TAPE SPEED button (31)
- ! INPUT SELECT button (32, 36)
- ! § LINE-2 IN AUDIO L/R/VIDEO jacks (48)
- ! ¶ COUNTER RESET button (28)
- ! Remote sensor (5)

continued

Additional Information 53

Index to parts and controls (continued)

Rear panel

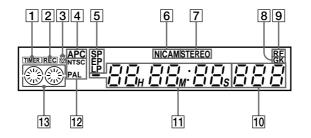


- 1 Mains lead (8)
- 2 LINE-1 IN AUDIO L/R/VIDEO jacks (48)
- 3 NTSC PB switch (27)

- 4 AERIAL OUT connector (8)
- 5 AERIAL IN connector (8)
- 6 LINE OUT AUDIO L/R/VIDEO jacks (9)

54 Additional Information

Display window



- 1 TIMER indicator (34, 37)
- 2 REC indicator
- 3 ⊠ (tracking) indicator (46)
- 4 APC indicator (46)
- 5 Tape speed indicator (31)
- 6 NICAM indicator (43)
- 7 STEREO indicator (43)

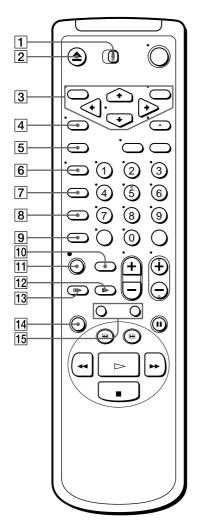
- 8 TV system indicator (10)
- 9 RF indicator (10)
- 0 Line/programme position indicator (10, 30)
- ! ¡ Time counter/clock indicator (28)
- !™ Colour system indicator (27)
- ! £ Tape indicator

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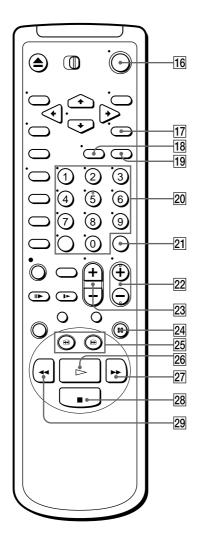
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- 1 TV/VIDEO remote control switch (5)
- 2 6 EJECT button (27)
- 3 Menu operation buttons (12)
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- 4 WIDE button (For TV) (7)
- 5 TRINITRON TV SYNCHRO PLAY button (29)
- 6 DISPLAY button (28)
- 7 COUNTER RESET button (28)
- 8 TIMER CLEAR button (23, 34, 41)
- 9 QUICK TIMER button (40)
- ! ° TAPE SPEED button (31)
- ! ; r REC button (31)
- ![™] & SLOW button (38)
- ! £ 7FRAME button (38)
- ! ¢ REPLAY button (27)
- ! =/+ INDEX SEARCH buttons (45)

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- ! § u (on/standby) switch (34, 37)
- ! ¶ AUDIO MONITOR button (43)
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