

DVD Recorder

Operating Instructions

RDR-GX300



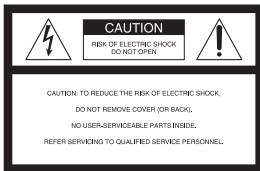
WARNING

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 AC power cord must be changed only at a qualified service shop only.

CAUTION

The use of optical instruments with this product will increase eye hazard. As the laser beam used in this DVD recorder is harmful to eyes, do not attempt to disassemble the cabinet. Refer servicing to qualified personnel only.



This symbol is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

CAUTION

TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.

For customers in the U.S.A Owner's Record

The model and serial numbers are located at the rear of the unit.

Record the serial number in the space provided below. Refer to them whenever you call upon your Sony dealer regarding this product.
Model No. RDR-GX300
Serial No. _____

CAUTION

You are cautioned that any change or modifications not expressly approved in this manual could void your authority to operate this equipment.

Note

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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

Precautions

This equipment has been tested and found to comply with the limits set out in the EMC Directive using a connection cable shorter than 3 meters.

On safety

Should any solid object or liquid fall into the cabinet, unplug the recorder and have it checked by qualified personnel before operating it any further.

On power sources

- The recorder is not disconnected from the AC power source as long as it is connected to the wall outlet, even if the recorder itself has been turned off.
- If you are not going to use the recorder for a long time, be sure to disconnect the recorder from the wall outlet. To disconnect the AC power cord, grasp the plug itself; never pull the cord.

On placement

- Place the recorder in a location with adequate ventilation to prevent heat build-up in the recorder.
- Do not place the recorder on a soft surface such as a rug that might block the ventilation holes.
- Do not place the recorder in a confined space such as a bookshelf or similar unit.
- Do not place the recorder in a location near heat sources, or in a place subject to direct sunlight, excessive dust, or mechanical shock.
- Do not place the recorder in an inclined position. It is designed to be operated in a horizontal position only.
- Keep the recorder and discs away from equipment with strong magnets, such as microwave ovens, or large loudspeakers.
- Do not place heavy objects on the recorder.
- To prevent fire or shock hazard, do not place objects filled with liquids, such as vases, on the apparatus.

On recording

- Note that the contents of the recording cannot be compensated for under any and all conditions, including conditions that may arise due to a malfunction of this unit.
- Make trial recordings before making the actual recording.

Copyrights

- Television programs, films, video tapes, discs, 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 program owner.
- This product incorporates copyright protection technology that is protected by U.S. patents and other intellectual property rights. Use of this copyright protection technology must be authorized by Macrovision, and is intended for home and other limited viewing uses only unless otherwise authorized by Macrovision. Reverse engineering or disassembly is prohibited.

Copy guard function

Since the recorder has a copy guard function, programs received through an external tuner (not supplied) may contain copy protection signals (copy guard function) and as such may not be recordable, depending on the type of signal.

IMPORTANT NOTICE

Caution: This recorder is capable of holding a still video image or on-screen display image on your television screen indefinitely. If you leave the still video image or on-screen display image displayed on your TV for an extended period of time you risk permanent damage to your television screen. Plasma display panels and projection televisions are especially susceptible to this.

If you have any questions or problems concerning your recorder, please consult your nearest Sony dealer.

IMPORTANT SAFETY INSTRUCTIONS

- 1 Read these instructions.
- 2 Keep these instructions.
- 3 Heed all warnings.
- 4 Follow all instructions.
- 5 Do not use this apparatus near water.
- 6 Clean only with dry cloth.
- 7 Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- 8 Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- 9 Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- 10 Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- 11 Only use attachments/accessories specified by the manufacturer.
- 12 Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.



- 13 Unplug this apparatus during lightning storms or when unused for long periods of time.
- 14 Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

About this manual

- Instructions in this manual describe the controls on the remote. You can also use the controls on the recorder if they have the same or similar names as those on the remote.
- The on-screen display illustrations used in this manual may not match the graphics displayed on your TV screen.
- The explanations regarding discs in this manual refer to discs created on this recorder. The explanations do not apply to discs that are created on other recorders and played back on this recorder.

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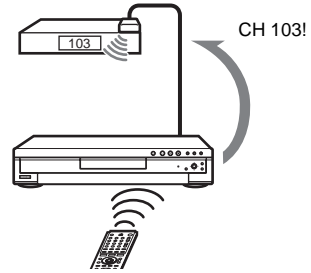
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Ways to Use Your DVD Recorder

Remote cable box or satellite receiver control – Set top box control

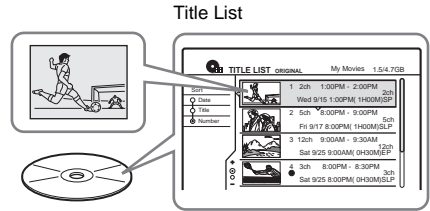
- ➔ Connect the supplied set top box controller to have the recorder change the channel of your cable box or satellite receiver during a timer recording (page 14).



Quick access to recorded titles – Title List

- ➔ Display the Title List to see all of the titles on the disc, including recording date, channel, recording mode and thumbnail image (page 32). The recorder will automatically take program label information from the XDS (Extended Data Service)* and display it as the title name (page 32).

* not available in some areas.



Play the beginning of a title while it is being recorded – Chasing Playback

- ➔ If you are using a DVD-RW (VR mode), you can watch a program from the beginning while it is being recorded (page 57).



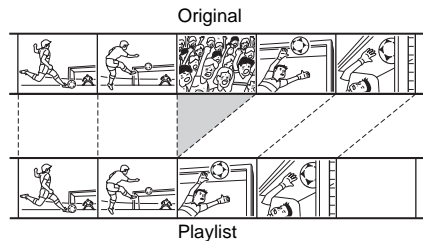
Watching one title while recording another – Simultaneous Rec and Play

- ➔ If you are using a DVD-RW (VR mode), you can watch a previously recorded program while recording another program on the same disc (page 57).



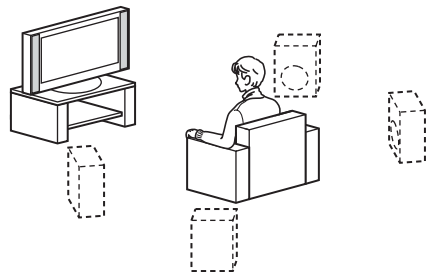
Creating your own program – Playlist

- ➔ Record a program on a DVD-RW (VR mode), then delete, move and add scenes at will to create your own, original program (page 65).



Dynamic surround sound – TVS










- ➔ Enjoy virtual surround sound effects from just your TV's speakers with the TV Virtual Surround settings when playing a DVD VIDEO with multichannel audio tracks such as Dolby Digital (5.1ch) (page 53).



A list of recordable and playable discs is on page 8.

Quick Guide to Disc Types

Recordable and playable discs

Type		Disc Logo	Icon used in this manual	Formatting (new discs)	Compatibility with other DVD players (finalizing)
DVD+RW				Automatically formatted	Playable on DVD+RW compatible players (automatically finalized)
DVD-RW	VR mode			Format in VR mode (page 35)	Playable only on VR mode compatible players (finalization unnecessary)
	Video mode			Format in Video mode (page 35)	Playable on most DVD players (finalization necessary) (page 36)
DVD+R				Automatically formatted	Playable on DVD+R compatible players (finalization necessary) (page 36)
DVD-R				Automatically formatted	Playable on most DVD players (finalization necessary) (page 36)

Usable disc versions (as of May 2004)

- 4x-speed or slower DVD+RWs
- 2x-speed or slower DVD-RWs (Ver.1.1, Ver.1.1 with CPRM*1)
- 8x-speed or slower DVD+Rs
- 8x-speed or slower DVD-Rs (Ver.2.0)

“DVD+RW,” “DVD-RW,” “DVD+R,” and “DVD-R,” are trademarks.

*1 CPRM (Content Protection for Recordable Media) is a coding technology that protects copyrights for images.

*2 Only if the recording mode is SP, HSP, or HQ, and “Rec Screen Size” is set to “16:9.”









*3 Erasing titles does not free up disc space.

	Recording Features				Editing Features			
	Rewrite (page 41)	Auto Chapter (page 78)	Manual Chapter (page 65)	Record 16:9 sizes (page 48)	Change title name (page 62)	Delete title (page 63)	A-B Erase (page 63)	Playlist (page 65)
	Yes	Yes	No	No	Yes	Yes	Yes	No
	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Yes	Yes	No	Yes *2	Yes	Yes	No	No
	No	Yes	No	No	Yes	Yes *3	No	No
	No	Yes	No	Yes *2	Yes	Yes *3	No	No

Discs that cannot be recorded on

- 4x-speed compatible DVD-RWs (Ver. 1.2/4x)
- DVD-RWs (Ver. 1.0)
- DVD+RWs that are not 2.4x-speed compatible
- Dual layer discs
- 8 cm discs

Playable discs

Type	Disc Logo	Icon used in this manual	Characteristics
DVD VIDEO			Discs such as movies that can be purchased or rented
VIDEO CD			VIDEO CDs or CD-Rs/CD-RWs in VIDEO CD/Super VIDEO CD format
CD			Music CDs or CD-Rs/CD-RWs in music CD format that can be purchased
DATA CD			CD-ROMs/CD-Rs/CD-RWs created on a PC or similar device in music format containing MP3 audio tracks

Discs that cannot be played

- All CD-ROMs (including PHOTO CDs)
- CD-Rs/CD-RWs, other than those recorded in music CD format, MP3 format, or Video CD format
- Data part of CD-Extras
- DVD-ROMs
- DVD Audio discs
- DVD-RAMs
- HD layer on Super Audio CDs
- DVD VIDEOS with a different region code (see below)
- A disc recorded in a color system other than NTSC, such as PAL or SECAM


Hint

This DVD recorder can play 8 cm CDs and 8 cm DVDs as well.

Note on playback operations of DVD VIDEOS/ VIDEO CDs

Some playback operations of DVD VIDEOS/ VIDEO CDs may be intentionally set by software producers. Since this recorder plays DVD VIDEOS/VIDEO CDs according to the disc contents the software producers designed, some playback features may not be available. Also, see the instructions supplied with the DVD VIDEOS/ VIDEO CDs.

Region code (DVD VIDEO only)

Your recorder has a region code printed on the rear of the unit and will only play DVD VIDEOS (playback only) labeled with identical region codes. This system is used to protect copyrights. DVD VIDEOS labeled  will also play on this recorder.

If you try to play any other DVD VIDEO, the message "Playback prohibited by region code." will appear on the TV screen. Depending on the DVD VIDEO, no region code indication may be labeled even though playing the DVD VIDEO is prohibited by area restrictions.



Music discs encoded with copyright protection technologies

This product is designed to playback discs that conform to the Compact Disc (CD) standard. Recently, various music discs encoded with copyright protection technologies are being marketed by some record companies. Please be aware that among those discs, there are some that do not conform to the CD standard and may not be playable by this product.

Notes

- You cannot mix VR mode and Video mode on the same DVD-RW. To change the disc's format, reformat the disc (page 35). Note that the disc's contents will be erased after reformatting.
- You cannot shorten the time required for recording even with high-speed discs. Also, you cannot record on the disc if the disc is not 1x speed compatible.
- It is recommended that you use discs with "For Video" printed on their packaging.
- You cannot add new recordings to DVD-Rs or DVD-RWs (Video mode) that contain recordings made on other DVD equipment.
- In some cases, you may not be able to add new recordings to DVD+RWs that contain recordings made on other DVD equipment. If you do add a new recording, note that this recorder will rewrite the DVD menu.
- If the disc contains PC data unrecognizable by this recorder, the data may be erased.
- Some DVD+RWs/DVD+Rs, DVD-RWs/DVD-Rs, or CD-RWs/CD-Rs cannot be played on this recorder due to the recording quality or physical condition of the disc, or the characteristics of the recording device and authoring software. The disc will not play if it has not been correctly finalized. For more information, see the operating instructions for the recording device.

Hooking Up the Recorder

Follow steps 1 to 7 to hook up and adjust the settings of the recorder.

Notes

- Plug cords securely to prevent unwanted noise.
- Refer to the instructions supplied with the components to be connected.
- You cannot connect this recorder to a TV that does not have a video input jack.
- Be sure to disconnect the power cord of each component before connecting.

Step 1: Unpacking

Check that you have the following items:

- Audio/video cord (pinplug × 3 ↔ pinplug × 3) (1)
- Power cord (1)
- Antenna cable (1)
- Remote commander (remote) (1)
- Set top box controller (1)
- Size AA (R6) batteries (2)

Step 2: Connecting the Antenna Cable and Set Top Box Controller

Select one of the following antenna hookups. Do not connect the power cord until you reach “Step 5: Connecting the Power Cord” (page 20).

If you have	Hookup
Cable box with a video/audio output or a satellite receiver	A (page 13)
Cable box with an antenna output only	B (page 15)
Cable without cable box, or antenna only (no cable TV)	C (page 14)

Using the cable box/satellite receiver control function

The cable box/satellite receiver control function can be used with hookup A or B. It allows the recorder to control a cable box or satellite receiver via the supplied set top box controller. The recorder controls channels on the cable box or satellite receiver for timer recording. You can also use the recorder’s remote control to change channels on the cable box/satellite receiver whenever the cable box/satellite receiver is turned on, even if the recorder is turned off.

To use the cable box/satellite receiver control function, you need to connect the set top box controller and set the code number and output channel (page 23). After setting up the cable box/satellite receiver control, check that the recorder can correctly control the cable box or satellite receiver (page 26).

Note to CATV system installer (in USA)

This reminder is provided to call the CATV system installer’s attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

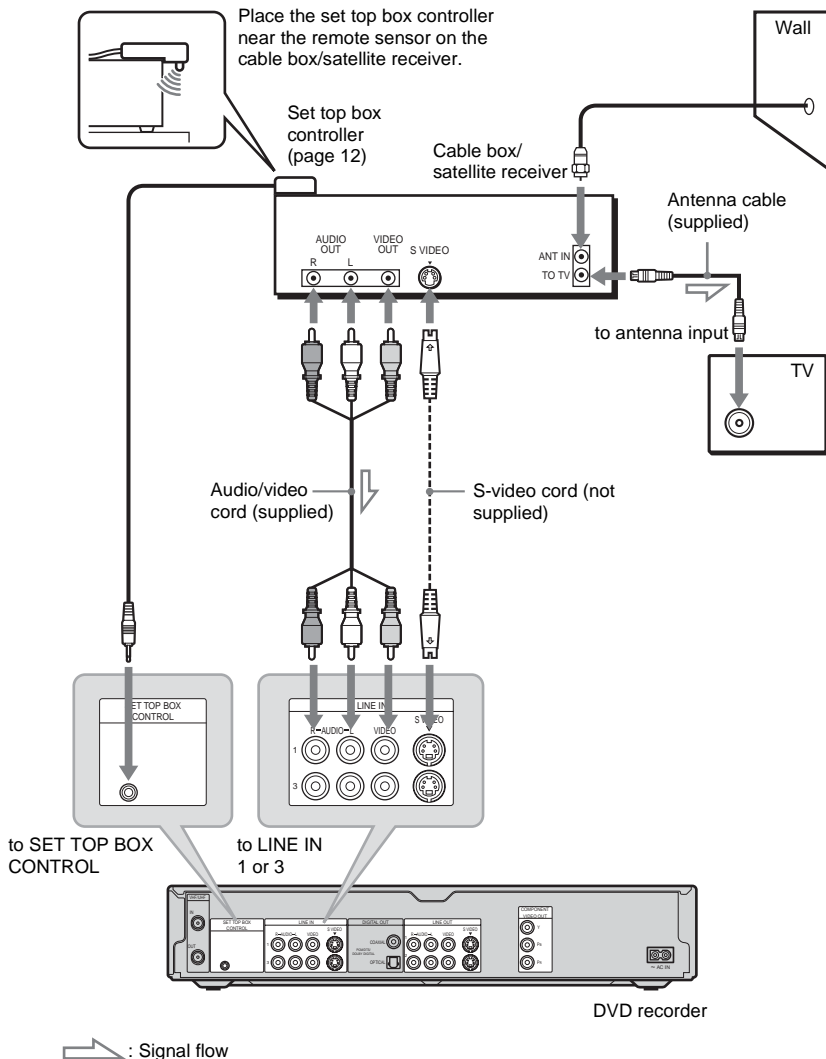
Notes

- If your antenna is a flat cable (300-ohm twin lead cable), use an external antenna connector (not supplied) to connect the antenna to the recorder.
- If you have separate cables for VHF and UHF antennas, use a UHF/VHF band mixer (not supplied) to connect the antenna to the recorder.

A: Cable box or satellite receiver with a video/audio output

With this hookup, you can record any channel on the cable box or satellite receiver. Be sure that the satellite receiver or cable box is turned on.

To watch cable or satellite programs, you need to match the channel on the recorder (L1 or L3) to the input jack connected to the cable box or satellite receiver (LINE IN 1 or 3).



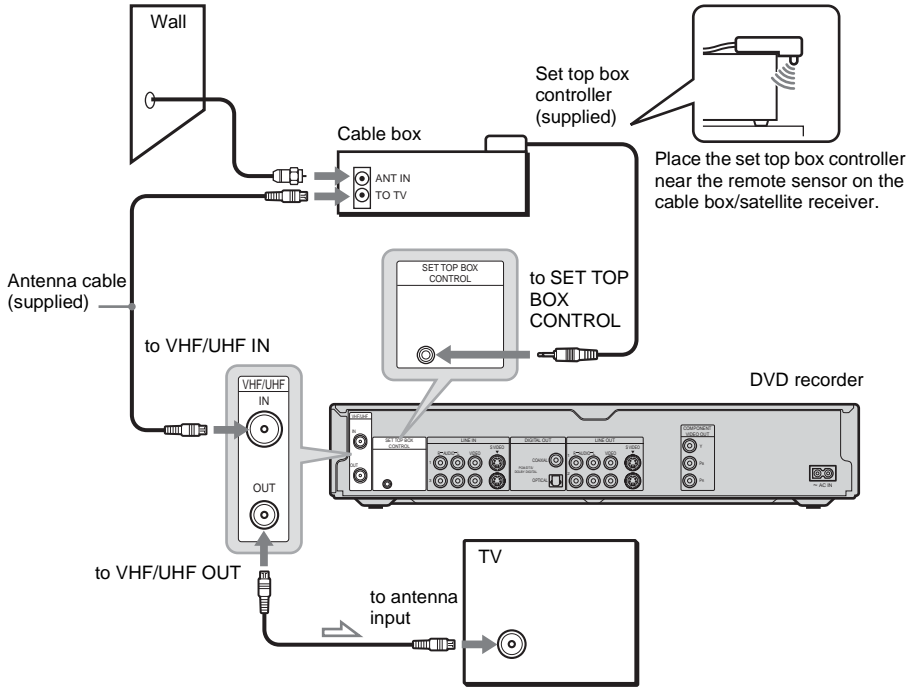
💡 Hints


- If your cable box or satellite receiver has an S-video jack, you can use an S-video cord (not supplied) instead of the audio/video cord.
- If you connect an S-video cord to the LINE IN 1 jack, set "Line1 Input" in Video Setup to "S VIDEO" (page 75). If you connect an S-video cord to the LINE IN 3 jack, set "Line3 Input" in Video Setup to "S VIDEO" (page 74).

B: Cable box with an antenna output only

With this hookup, you can record any channel on the satellite receiver or cable box. Be sure that the satellite receiver or cable box is turned on.

To watch cable programs, you need to match the channel on the recorder (2ch, 3ch, or 4ch) to the antenna output channel on the cable box (2ch, 3ch, or 4ch).

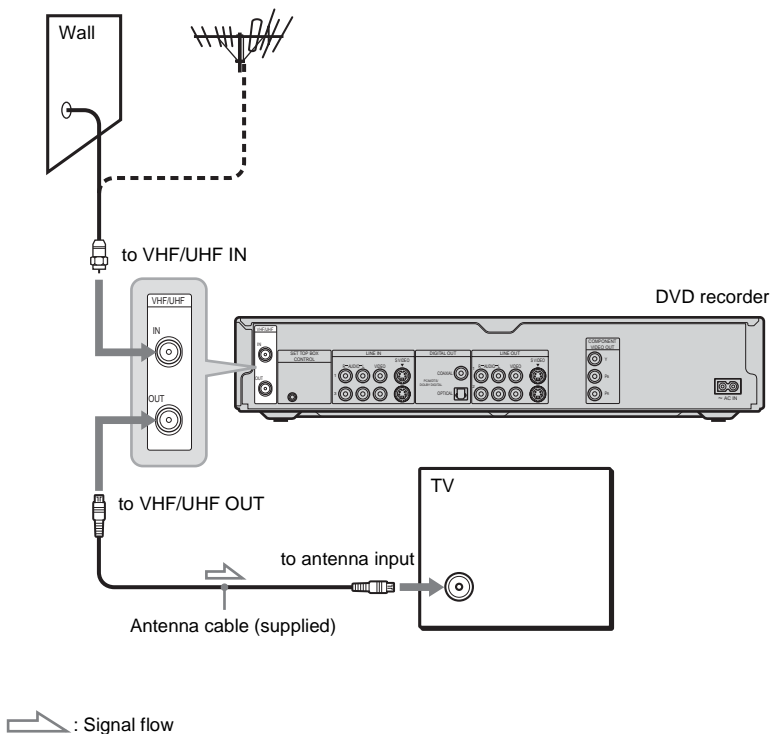


 : Signal flow

C: Cable without cable box, or antenna only (no cable TV)

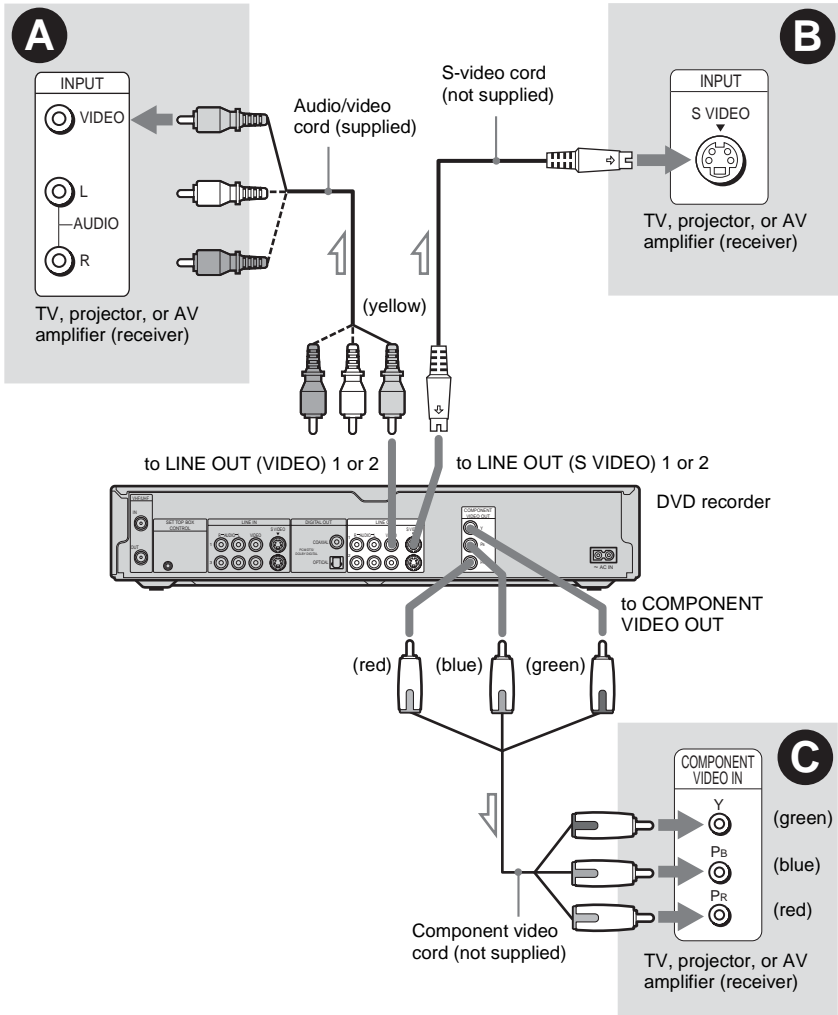
Use this hookup if you watch cable channels without a cable box. Also use this hookup if you are using a VHF/UHF antenna or separate VHF and UHF antennas.

With this hookup, you can record any channel by selecting the channel on the recorder.



Step 3: Connecting the Video Cords

Select one of the following patterns **A** through **C**, according to the input jack on your TV monitor, projector, or AV amplifier (receiver). This will enable you to view pictures. Audio connections are explained in “Step 4: Connecting the Audio Cords” (page 18).



 : Signal flow

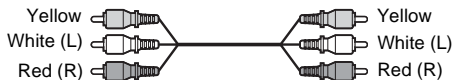
Note

Do not connect more than one type of video cord between the recorder and your TV at the same time.

A Connecting to a video input jack

Connect the yellow plug of the audio/video cord (supplied) to the yellow (video) jack. You will enjoy standard quality images.

Note that you cannot use the PROGRESSIVE button with this connection.



B Connecting to an S VIDEO input jack

Connect an S-video cord (not supplied). You will enjoy high quality images.

Note that you cannot use the PROGRESSIVE button with this connection.



C Connecting to component video input jacks (Y, P_B, P_R)

Connect the COMPONENT VIDEO OUT jacks using a component video cord (not supplied) or three video cords (not supplied) of the same kind and length. You will enjoy accurate color reproduction and high quality images.

If your TV accepts progressive 480p format signals, you must use this connection and then press PROGRESSIVE on the remote to send progressive video signals. For details, see “Using the PROGRESSIVE button” (page 17).



When playing “wide screen” images

Some recorded images may not fit your TV screen. To change the aspect ratio, see page 74.

If you are connecting to a VCR

Connect your VCR to the LINE IN (VIDEO) jack on the recorder (page 29).

Using the PROGRESSIVE button

By using the PROGRESSIVE button on the remote, you can select the signal format in which the recorder outputs video signals: Interlace or Progressive.

Connect the recorder using the COMPONENT VIDEO OUT jacks (pattern C above), and press PROGRESSIVE repeatedly. “PROGRESSIVE” appears in the front panel display when the recorder outputs progressive signals.

◆ Progressive

Select this when:

- your TV accepts progressive signals, and,
- the TV is connected to the COMPONENT VIDEO OUT jacks.

Note that the pictures will not be clear or no picture will appear if you select progressive signal output when either of the above conditions is not met.

◆ Interlace

Set to this position when:

- your TV does not accept progressive signals, or,
- your TV is connected to jacks other than the COMPONENT VIDEO OUT jacks (LINE OUT (VIDEO) or S VIDEO).

💡 Hint

When you select progressive signal output, you can fine-tune the signal according to the type of software you are watching (page 75).

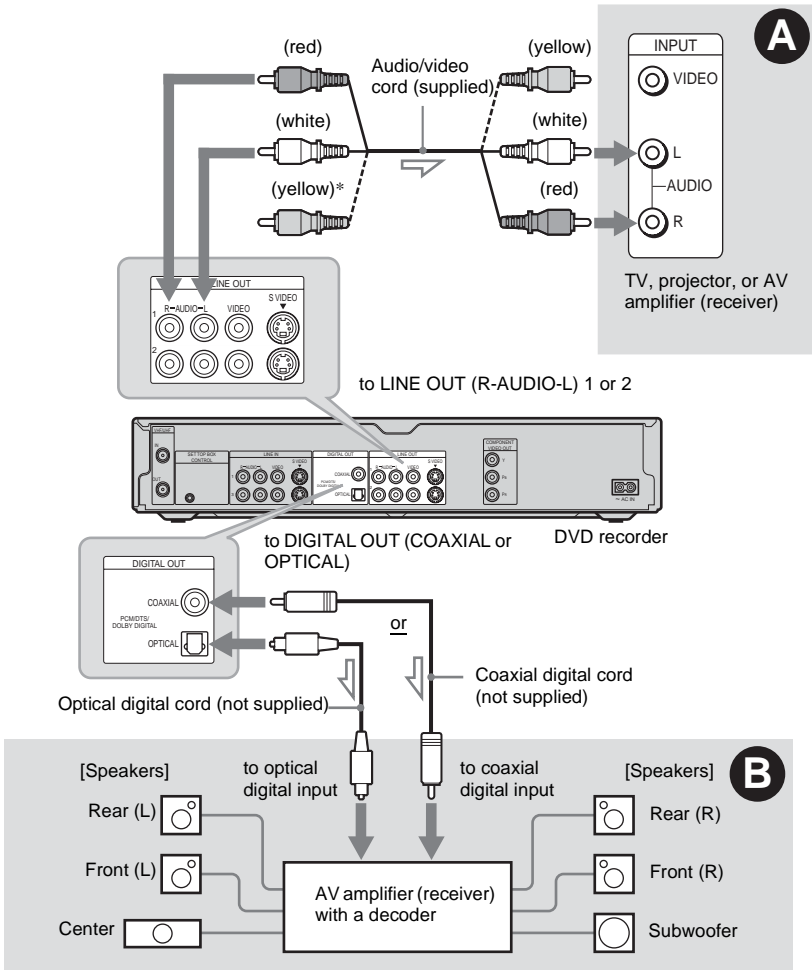
Note

Consumers should note that not all high definition television sets are fully compatible with this product and may cause artifacts to be displayed in the picture. In the case of 480 progressive scan picture problems, it is recommended that the user switch the connection to the ‘standard definition’ output. If there are questions regarding our TV set compatibility with this model 480p DVD recorder, please contact our customer service center.

Step 4: Connecting the Audio Cords

Select one of the following patterns **A** or **B**, according to the input jack on your TV monitor, projector, or AV amplifier (receiver).

This will enable you to listen to sound.



Hint

For correct speaker location, see the operating instructions supplied with the connected components.

Note

Do not connect your TV's audio output jacks to the LINE IN (AUDIO L/R) jacks at the same time. This will cause unwanted noise to come from your TV's speakers.

A Connecting to audio L/R input jacks

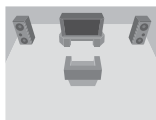
This connection will use your TV's or stereo amplifier's (receiver's) two speakers for sound. Connect using the audio/video cord (supplied).



- Surround effect (page 53)
TV: Dynamic, Wide, Night



Stereo amplifier (receiver): Standard, Night



Note

Do not connect your TV's audio output jacks to the LINE IN (AUDIO L/R) jacks at the same time. This will cause unwanted noise to come from your TV's speakers.

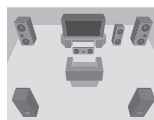
B Connecting to a digital audio input jack

If your AV amplifier (receiver) has a Dolby^{*1} Digital or DTS^{*2} decoder and a digital input jack, use this connection.

Connect using a coaxial or optical digital cord (not supplied).



- Surround effect
Dolby Digital (5.1ch), DTS (5.1ch)



^{*1} Manufactured under license from Dolby Laboratories. "Dolby," "Pro Logic," and the double-D symbol are trademarks of Dolby Laboratories.

^{*2} "DTS" and "DTS Digital Out" are trademarks of Digital Theater Systems, Inc.

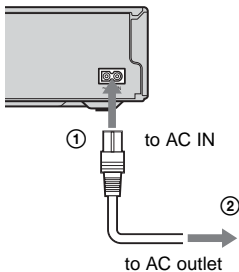
Notes

- After you have completed the connection, make the appropriate settings under "Audio Connection" in Easy Setup (page 23). Otherwise, no sound or a loud noise will come from your speakers.
- The surround sound effects of this recorder cannot be used with this connection.


Step 5: Connecting the Power Cord

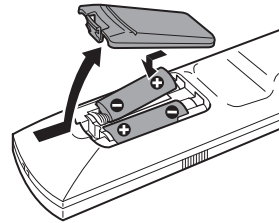
Connect the supplied power cord to the AC IN terminal of the recorder. Then plug the recorder and TV power cords into an AC outlet. After you connect the power cord, **you must wait for a short while before operating the recorder**. You can operate the recorder only after the front panel display lights up and the recorder enters standby mode.

If you connect additional equipment to this recorder (page 29), be sure to connect the power cord only after all connections are complete.




Step 6: Preparing the Remote

You can control the recorder using the supplied remote. Insert two size AA (R6) batteries by matching the ⊕ and ⊖ ends on the batteries to the markings inside the battery compartment. When using the remote, point it at the remote sensor  on the recorder.



Notes

- If the supplied remote interferes your other Sony DVD recorder or player, change the command mode number for this recorder (page 22).
- Use the batteries correctly to avoid possible leakage and corrosion. Do not touch the liquid with bare hands should leakage occur. Observe the following:
 - Do not use a new battery with an old battery, or batteries of different manufacturers.
 - Do not attempt to recharge the batteries.
 - If you do not intend to use the remote for an extended period of time, remove the batteries.
 - If battery leakage occurs, wipe out any liquid inside the battery compartment, and insert new batteries.
- Do not expose the remote sensor (marked  on the front panel) to strong light, such as direct sunlight or lighting apparatus. The recorder may not respond to the remote.

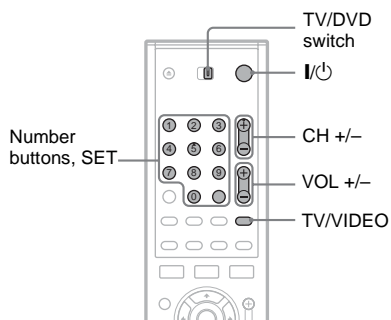
Controlling TVs with the remote

You can adjust the remote control's signal to control your TV.

If you connected the recorder to an AV amplifier (receiver), you can also use the supplied remote to control the AV amplifier's (receiver's) volume.

Notes

- Depending on the connected unit, you may not be able to control your TV or AV amplifier (receiver) with some or all of the buttons below.
- If you enter a new code number, the code number previously entered will be erased.
- When you replace the batteries of the remote, the code number may be reset to the default setting. Set the appropriate code number again.



- 1 Slide the TV/DVD switch to TV.
- 2 Hold down I/⏻.
- 3 Enter your TV's manufacturer code (see "Code numbers of controllable TVs" below) using the number buttons.
- 4 Release I/⏻.
When the TV/DVD switch is set to TV, the remote performs the following:

I/⏻	Turns your TV on or off
VOL +/-	Adjusts the volume of your TV
CH +/-	Selects the channel on your TV
TV/VIDEO	Switches your TV's input source
Number buttons and SET	Selects the channel on your TV

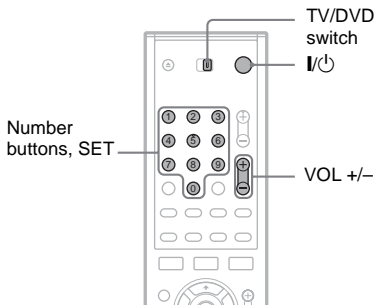
Code numbers of controllable TVs

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
Sony	01 (default)
Akai	04
AOC	04
Centurion	12
Coronado	03
Curtis-Mathes	12, 14
Daewoo	04, 22
Daytron	03, 12
Fisher	11
General Electric	04, 06, 10
Gold Star/LG	03, 04, 17
Hitachi	02, 03, 04
J.C.Penney	04, 10, 12
JVC	09
KMC	03
Magnavox	03, 04, 08, 12, 21
Marantz	04, 13
MGA/Mitsubishi	04, 12, 13, 17
NEC	04, 12
Panasonic	06, 19
Philco	02, 03, 04, 08
Philips	08, 21
Pioneer	06, 16
Portland	03
Proscan	10
Quasar	06, 18
Radio Shack	05, 10, 14
RCA	04, 10
Sampo	12
Samsung	03, 04, 12, 20
Sanyo	11, 14
Scott	12
Sears	07, 10, 11
Sharp	03, 05, 18

Manufacturer	Code number
Sylvania	08, 12
Teknika	03, 08, 14
Toshiba	07, 18
Wards	03, 04, 12
Yorx	12
Zenith	14, 15

Controlling the volume of your AV amplifier (receiver) with the remote



- Slide the TV/DVD switch to DVD.
- Hold down I/⏻, and enter the manufacturer code (see the table below) for your AV amplifier (receiver) using the number buttons.
- Release I/⏻.
The VOL +/- buttons control the AV amplifier's volume.
If you want to control the TV's volume, slide the TV/DVD switch to TV.

Hint

If you want to control the TV's volume even when the TV/DVD switch is set to DVD, repeat the steps above and enter the code number 90 (default).

Code numbers of controllable AV amplifiers (receivers)

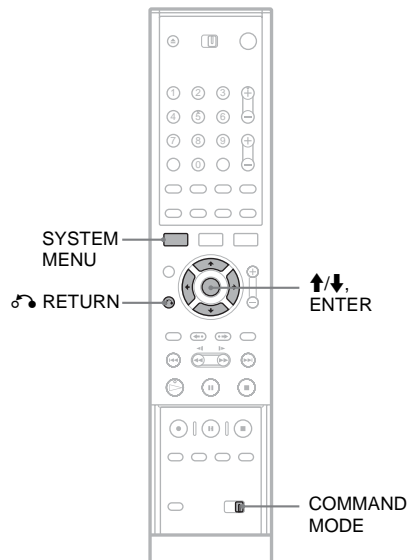
If more than one code number is listed, try entering them one at a time until you find the one that works with your AV amplifier (receiver).

Manufacturer	Code number
Sony	78, 79, 80, 91
Denon	84, 85, 86
Kenwood	92, 93
Onkyo	81, 82, 83
Pioneer	99
Sansui	87
Technics	97, 98
Yamaha	94, 95, 96

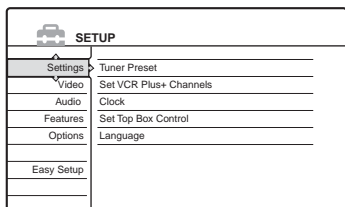
If you have a Sony DVD player or more than one Sony DVD recorder

If the supplied remote interferes with your other Sony DVD recorder or player, set the command mode number for this recorder and the supplied remote to one that differs from the other Sony DVD recorder or player.

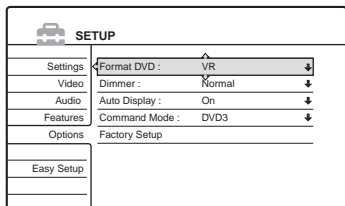
The default command mode setting for this recorder and the supplied remote is DVD3.



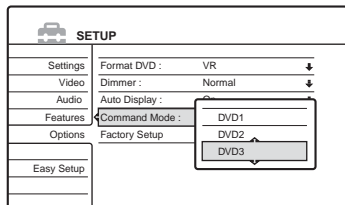
- 1 Press **SYSTEM MENU**.
The System Menu appears.
- 2 Select **"SETUP,"** and press **ENTER**.



- 3 Select **"Options,"** and press **ENTER**.



- 4 Select **"Command Mode,"** and press **ENTER**.



- 5 Select the Command mode (DVD1, DVD2, or DVD3), and press **ENTER**.
- 6 Slide the **COMMAND MODE** switch on the remote so it matches the mode you selected above.

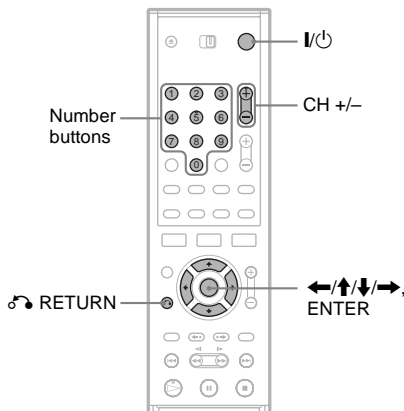
To return to the previous step
Press **RETURN**.

Step 7: Easy Setup

Follow the steps below to make the minimum number of basic adjustments for using the recorder. If you do not complete Easy Setup, it will appear each time you turn on your recorder. Settings are made in the following order.

- OSD Language Setup
- ↓
- Clock Setup
- ↓
- Cable Box/Sat. Control Setup
- ↓
- Tuner and Channel Setup
- ↓
- TV Type Setup
- ↓
- Audio Connection Setup
- ↓

Finished!



- 1 Turn on the TV.
- 2 Press **I/Power**.
The recorder turns on.

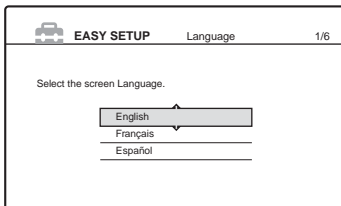
3 Switch the input selector on your TV so that the signal from the recorder appears on your TV screen.

“Initial settings necessary to operate the DVD recorder will be made. You can change them later using Setup. Before you start, check that you have made all necessary connections.” appears.

- If this message does not appear, select “Easy Setup” from “SETUP” in the System Menu to run Easy Setup. For details, see “Settings and Adjustments” on page 69.

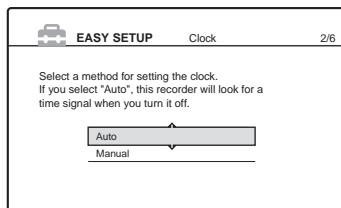
4 Press ENTER.

The Setup Display for selecting the language used in the on-screen display appears.



5 Select a language, and press ENTER.

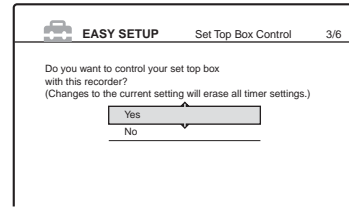
The Setup Display for clock setting appears.



6 Select “Manual,” and press ENTER.

Press \uparrow/\downarrow to set the month and press \rightarrow . Set the day, year, hour, and minutes in the same way. The day of the week is set automatically. If you used antenna hookup C (page 15), you can select “Auto.” The recorder will automatically search for a channel that carries a time signal when you turn off the recorder after finishing Easy Setup.

Once the clock is set, the Setup Display for cable box/satellite receiver control appears.



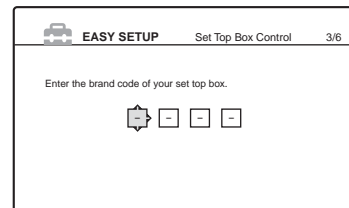
7 Set the cable box/satellite receiver control, and press ENTER.

If you want to use the cable box/satellite receiver control (page 14), select “Yes.” If you do not have a cable box, select “No,” then go to step 11.

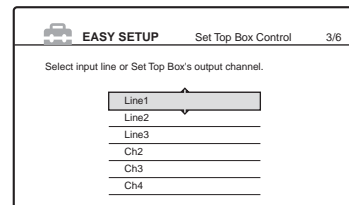
8 Enter the brand code of your cable box/satellite receiver.

See “Cable Box/Satellite Receiver Brand Code” (page 96).

Use \uparrow/\downarrow to select the number and \leftarrow/\rightarrow to move the cursor.



9 Press ENTER.

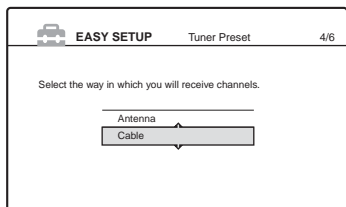


10 Select the cable box output channel.

If you connect your cable box or satellite receiver to the recorder’s audio/video input (page 13), select “Line1,” “Line2,” or “Line3,” then go to step 13.

If you connect the satellite receiver or cable box to the recorder's antenna input (page 14), select "Ch2," "Ch3," or "Ch4" and press ENTER, then go to step 13. See the instructions supplied with your cable box to confirm the cable box's antenna output channel.

11 Select whether or not you have a cable connection.

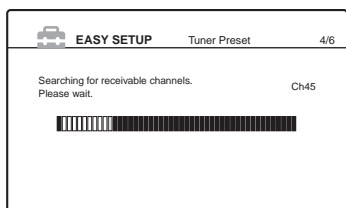


If you use an antenna only (no cable TV), select "Antenna."

If you use a cable connection without a cable box, select "Cable."

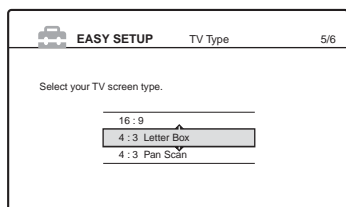
12 Press ENTER.

The Tuner Preset function automatically starts searching for all of the receivable channels and presets them.



To set the channels manually, see page 71. After the Tuner Preset is finished, the Setup Display for selecting the aspect ratio of the connected TV appears.

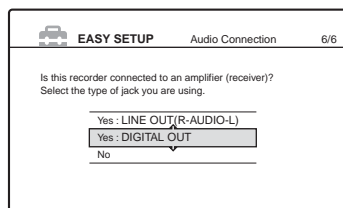
13 Select the setting that matches your TV type.



"4:3 Letter Box": For standard TVs. Displays "wide screen" pictures with bands on the upper and lower sections of the screen.
 "4:3 Pan Scan": For standard TVs. Automatically displays "wide screen" pictures on the entire screen and cuts off the sections that do not fit.
 "16:9": For wide-screen TVs or standard TVs with a wide screen mode.
 For details, see "TV type" on page 74.

14 Press ENTER.

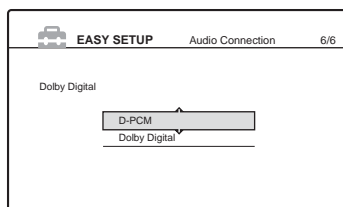
The Setup Display for selecting the type of jack used to connect to your amplifier (receiver) appears.



15 Select the type of jack (if any) you are using to connect to an amplifier (receiver), and press ENTER.

If you did not connect an AV amplifier (receiver), select "No," then go to step 19. If you connected an AV amplifier (receiver) using just an audio cord, select "Yes: LINE OUT (R-AUDIO-L)," then go to step 19. If you connected an AV amplifier (receiver) using either a digital optical or coaxial cord, select "Yes: DIGITAL OUT."

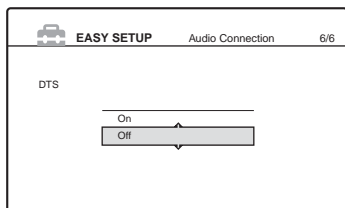
16 Select the type of Dolby Digital signal you wish to send to your amplifier (receiver).



If your AV amplifier (receiver) has a Dolby Digital decoder, select "Dolby Digital." Otherwise, select "D-PCM."

17 Press ENTER.

The Setup Display for the DTS signal appears.



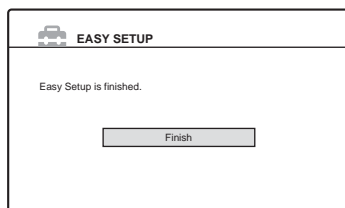
18 Select whether or not you wish to send a DTS signal to your amplifier (receiver), and press ENTER.

If your AV amplifier (receiver) has a DTS decoder, select "On." Otherwise, select "Off."

19 Press ENTER when "Finish" appears.

Easy Setup is finished. All connections and setup operations are complete.

If you use the cable box/satellite receiver control, check that the control works correctly (see below).



To return to the previous step

Press RETURN.

Hint

If you want to run Easy Setup again, select "Easy Setup" in the Setup Display (page 81).

Notes

- If there are only a few channels in your area that carry time signals, setting the clock automatically may take up to about 20 minutes after the recorder turns off. If nothing happens even after you wait about 20 minutes, set the clock manually in "Clock" of "Settings" (page 72).
- To record TV programs using the timer, you must set the clock accurately.
- If you use an S-video cord to connect your cable box or satellite receiver, set "Line1 Input" or "Line3 Input" in Video Setup to "S Video" (page 75).

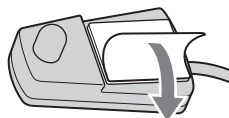
Checking the cable box/satellite receiver control setting

- 1 Point the remote at the recorder (not at the cable box/satellite receiver.)
- 2 Press CH +/- and check that the channel changes on the cable box/satellite receiver window.
- 3 Press the number buttons and check that the channel changes on the cable box/satellite receiver window.

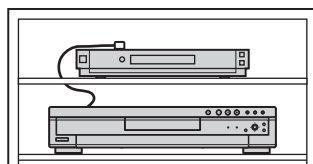
To fix the set top box controller to your cable box/satellite receiver

Once you have confirmed that the set top box controller controls your cable box or satellite receiver, fix it in place.

- 1 Remove the backing on the double-sided tape.



- 2 Attach it so that the cable mouse is directly above the remote control sensor on your cable box/satellite receiver.



If you cannot get the recorder to control your cable box/satellite receiver

Check the settings at "Set Top Box Control" in Settings Setup (page 73).

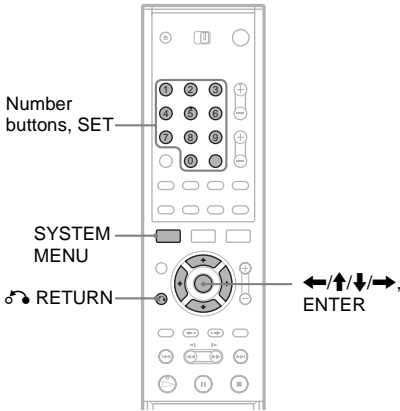
Check the connection and position of the cable mouse (page 13).

If your cable box or satellite receiver still does not operate with this recorder, contact your cable company to see if they can provide you with a compatible cable box or satellite receiver.

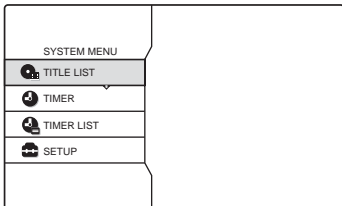
Setting Up the VCR Plus® System

Setting up your recorder involves coordinating the TV channel number (the number you turn to on your TV or recorder to watch a program) with the guide channel (the number that's assigned to that channel in your TV program guide).

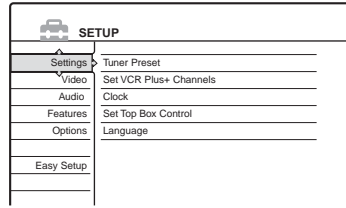
To find the guide channel numbers, look at the "Channel Line-up Chart" in the program guide for your area that features VCR PlusCode numbers. Use the Channel Line-up Chart to coordinate the guide channel number with the TV channel number. For example, if HBO is listed in the Channel Line-up Chart as channel 33, and the recorder receives HBO on channel 5, coordinate these numbers using the following procedure.



1 Press SYSTEM MENU while the recorder is stopped.

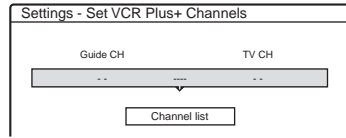


2 Select "SETUP," and press ENTER.

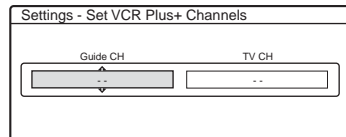


3 Select "Settings," and press ENTER.

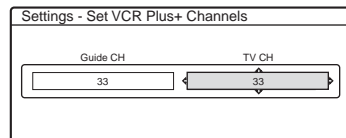
4 Select "Set VCR Plus+ Channels," and press ENTER.



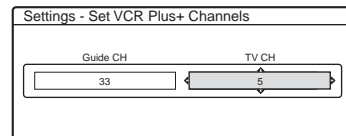
5 Select "Guide CH - TV CH," and press ENTER.



6 Enter the guide channel number assigned in the program guide using the number buttons, and press SET.



7 Enter the TV channel number using the number buttons, and press SET.



If you connected a cable box or satellite receiver to the recorder and set “Set Top Box Control” to “On,” enter the TV channel number on your cable box.

If you connected a cable box and set “Set Top Box Control” to “Off,” enter the cable box output channel (Usually 2ch, 3ch, or 4ch). See the instructions supplied with your cable box to confirm the cable box’s output channel.

8 Repeat steps 5 to 7 for each guide channel number that does not match the TV channel number.

9 Press SYSTEM MENU repeatedly to exit the menu.

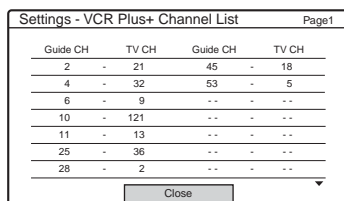
To return to the previous step

Press ⏪ RETURN.

To check the channel settings

When displaying the “Set VCR Plus+ Channels” menu, select “Channel List,” then press ENTER.

The display lists the channels for which the guide channel number does not match the TV channel number.



Guide CH	TV CH	Guide CH	TV CH
2	- 21	45	- 18
4	- 32	53	- 5
6	- 9	--	- --
10	- 121	--	- --
11	- 13	--	- --
25	- 36	--	- --
28	- 2	--	- --

Close

To go to the next page, press ↓.

To return to the previous page, press ↑.

Connecting a VCR or Similar Device

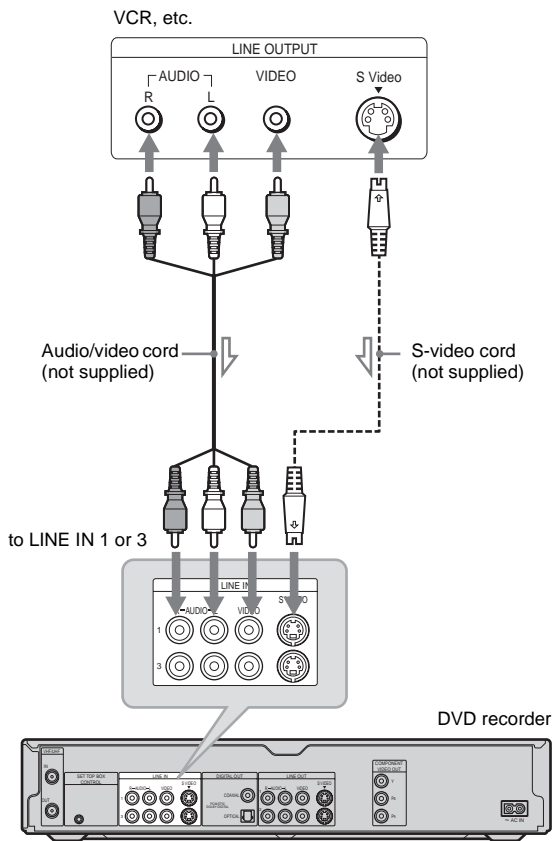
After disconnecting the recorder's power cord from an AC outlet, connect a VCR or similar recording device to the LINE IN jacks of this recorder.


See also the instruction manual supplied with the connected equipment.

To record on this recorder, see "Recording From a VCR or Similar Device" (page 49).

Connecting to the LINE IN 1 or 3 jacks

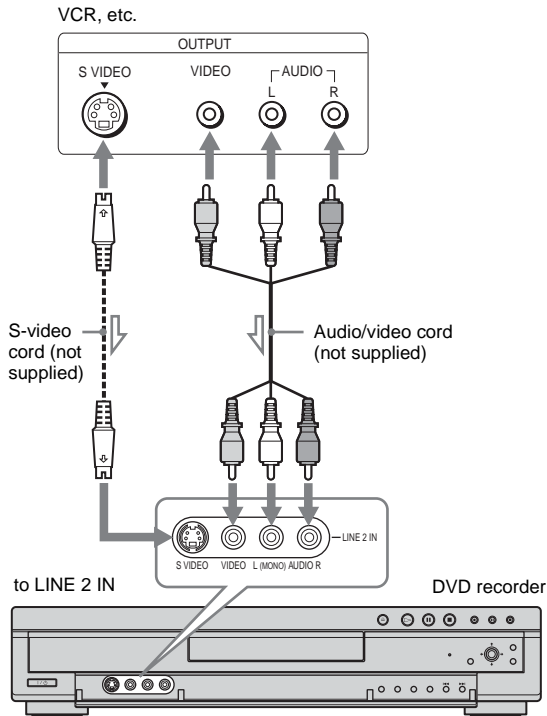
If the equipment has an S-video jack, you can use an S-video cord instead of an audio/video cord.



 : Signal flow

Connecting to the LINE 2 IN jacks on the front panel

Connect a VCR or similar recording device to the LINE 2 IN jacks of this recorder. If the equipment has an S-video jack, you can use an S-video cord instead of an audio/video cord.



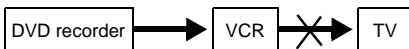
: Signal flow

Hint

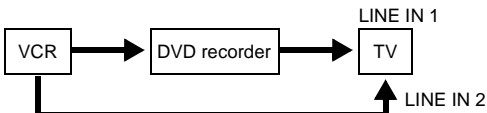
When the connected equipment outputs only monaural sound, use audio cables that distribute monaural sounds to left/right channels (not supplied).

Notes

- Do not connect the yellow LINE IN (VIDEO) jack when using an S-video cord.
- Do not connect the output jack of this recorder to another equipment's input jack with the other equipment's output jack connected to the input jack of this recorder. Noise (feedback) may result.
- Pictures containing copy protection signals that prohibit any copying cannot be recorded.
- If you pass the recorder signals via the VCR, you may not receive a clear image on your TV screen.



Be sure to connect your VCR to the DVD recorder and your TV in the order shown below. To watch videotapes, watch the tapes through a second Line input on your TV.

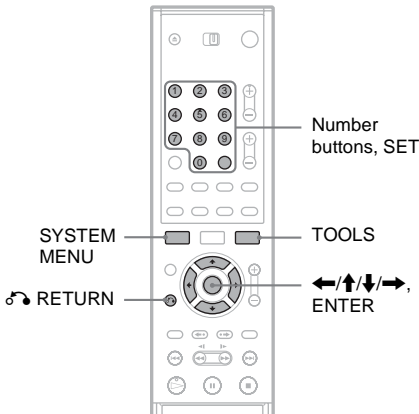


- Do not connect more than one type of video cord between the recorder and your TV at the same time.

Using the On-Screen Menus

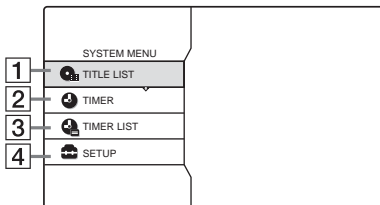


This section introduces the System Menu, TOOLS menu, and sub-menu. By using these displays, you can perform most of the recorder's operations.



System Menu

The System Menu appears when you press **SYSTEM MENU**, and provides entries to all of the recorder's main functions, such as timer recording and setup. Select an option by pressing **↑/↓** and **ENTER**.



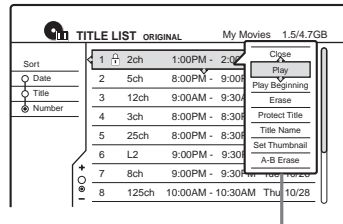
- 1 **TITLE LIST** (page 32): Turns on the Title List menu, which shows recorded titles on the disc.

- 2 **TIMER** (page 41): Allows you to set a new timer recording setting.
- 3 **TIMER LIST** (page 44): Turns on the Timer List menu, which allows you to check, change, or cancel timer settings.
- 4 **SETUP** (page 69): Turns on the Setup Display, which allows you to set up the recorder to suit your preferences.

Sub-menu

The sub-menu appears when you select an item from a list menu (e.g. a title from the Title List menu), and press **ENTER**. The sub-menu displays options applicable only to the selected item. The displayed options differ depending on the situation and disc type. Select an option by pressing **↑/↓** and **ENTER**.

Example: The Title List menu



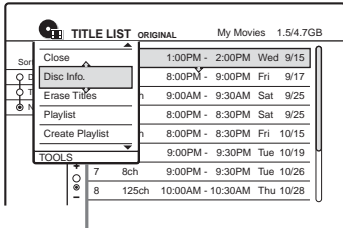
Options for the selected item

TOOLS

The TOOLS menu appears when you press TOOLS, and displays options applicable to the entire disc (e.g. disc protection), recorder (e.g. audio settings during recording), or multiple items on a list menu (e.g. erasing multiple titles). The displayed options differ depending on the situation and disc type.

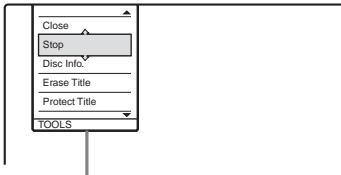
Select the option by pressing \uparrow/\downarrow and ENTER.

Example 1: When you press TOOLS while the Title List menu is turned on.



Options for the disc or menu

Example 2: When you press TOOLS while a DVD-RW (VR mode) is playing.



Options for the disc or picture

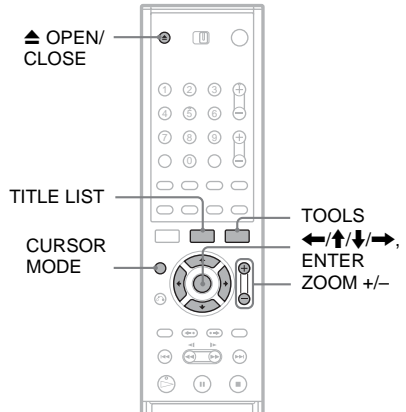
To return to the previous display

Press \leftarrow RETURN.

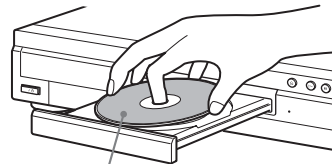
Using the Title List

+RW **-RWvR** **-RWVideo** **+R** **-R**

The titles of programs recorded on a disc are displayed in the Title List.



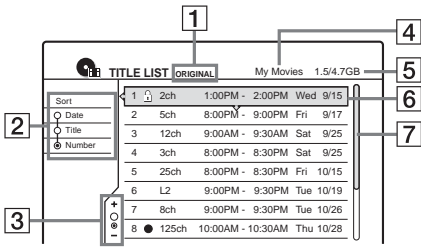
- 1 Press \triangle OPEN/CLOSE, and place a disc on the disc tray.



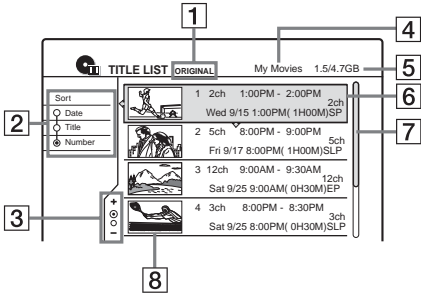
With the recording side facing down

- 2 Press \triangle OPEN/CLOSE to close the disc tray.
Wait until "LOAD" disappears from the front panel display.
- 3 Press TITLE LIST.
To show the list in greater detail (zoom), press ZOOM+.

Standard Title List (Example: DVD-RW in VR mode)



“Zoomed” Title List



- 1** Title type (DVD-RW in VR mode only): Displays the title type, Original or Playlist.
- 2** Sort buttons: Sorts the title order (see below).
- 3** Zooming indicator: Shows the current zoom status.
- 4** Disc name (page 35)
- 5** Disc space (remainder/total)
- 6** Title information: Displays the title number, title name, and recording date. “●” (red) indicates that the title is currently being recorded. “⏏” indicates the protected title.
- 7** Scroll bar: Appears when all of the titles do not fit on the list. To view the hidden titles, press \uparrow/\downarrow .
- 8** Title’s thumbnail picture

To scroll the list display by page (Page mode)

Press CURSOR MODE while the list display is turned on. The display enters Page mode. Each time you press \uparrow/\downarrow , the entire Title List changes to the next/previous page of titles. To return to the Cursor mode, press CURSOR MODE again.

About the Title List for DVD-RWs (VR mode)

You can switch the Title List to show Original or Playlist.

While the Title List menu is turned on, press TOOLS and select either “Original” or “Playlist,” and press ENTER. “PLAYLIST” appears on the front panel display when “Playlist” is selected. For details, see “Edit options for DVD-RWs (VR mode)” (page 61).

To change the title order (Sort)

Press \leftarrow while the Title List menu is turned on to move the cursor to the Sort column. Press \uparrow/\downarrow to select the item, and press ENTER.

Order	Sorted
Date	in order of when the titles were recorded. The title that is recorded most recently is listed at the top.
Title	in alphabetical order.
Number	in order of recorded title number.

To change a title thumbnail picture (Thumbnail) (DVD-RW in VR mode only)

You can select a favorite scene for the thumbnail picture shown in the Title List menu.

- 1** Press TITLE LIST while a disc is in the recorder, and press ZOOM+.
- 2** Select a title whose thumbnail picture you want to change, and press ENTER.
- 3** Select “Set Thumbnail” from the sub-menu, and press ENTER. The selected title starts to play in the background.
- 4** While watching the playback picture, press \triangleright PLAY, \parallel PAUSE, or $\ll\ll\ll\ll$ to select the scene you want to set for a thumbnail picture, and press ENTER. The scene is set for the title’s thumbnail picture.

To turn off the Title List

Press TITLE LIST.

Hint

After recording, the first scene of the recording (the title) is automatically set as the thumbnail picture.

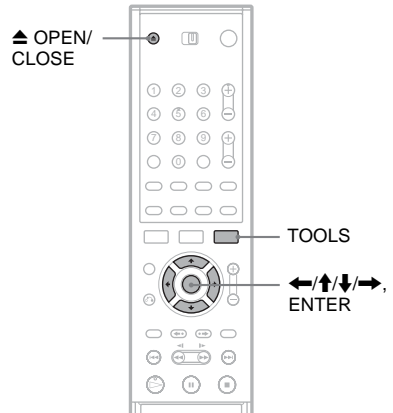
Notes

- The Title List may not appear for discs created on other DVD recorders.
- Letters that cannot be displayed are replaced with an “g”.
- Title thumbnail pictures are displayed only on this recorder.
- It may take a few seconds for the thumbnail pictures to be displayed.
- After editing, the title thumbnail picture may change to the first scene of the recording (title).

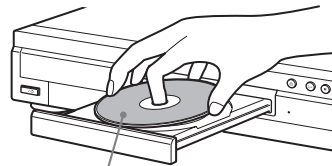
Using the “Disc Info” Screen (disc settings)

+RW -RWVR -RWVideo +R -R

With the Disc Information display, you can check the disc type and remaining disc space. Also, you can perform operations such as formatting and finalizing (page 35).



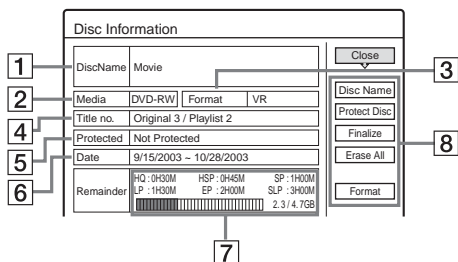
- 1 Press **▲ OPEN/CLOSE**, and place a disc on the disc tray.



With the recording side facing down

- 2 Press **▲ OPEN/CLOSE** to close the disc tray.
Wait until “LOAD” disappears from the front panel display.
- 3 Press **TOOLS**.
The **TOOLS** menu appears.
- 4 Select “Disc Info.,” and press **ENTER**.
Items in the display differ depending on the disc type or recording format.

Example: DVD-RW (VR mode)



- 1 “Disc Name”
- 2 “Media”: Disc type
- 3 “Format”: Recording format type (DVD-RW only)
- 4 “Title no.”: Total number of titles
- 5 “Protected”: Indicates whether protection is set (DVD-RW in VR mode only)
- 6 “Date”: Dates of when the oldest and the most recent titles were recorded
- 7 “Continuous Rem. Time”/“Remainder” (approximate)
 - The longest continuous recording time in each of the recording modes
 - Disc space bar
 - Remaining disc space/total disc space
- 8 Disc setting buttons (page 35)
 - “Disc Name”
 - “Protect Disc”
 - “Finalize”/“Unfinalize”
 - “Erase All”
 - “Format”

Available settings differ depending on the disc type.

Hint

For DVD-RWs (Video mode) and DVD+RWs, you can check free space and title location on the disc using the Disc Map display (page 64).

Note

On this model, 1 GB (read “gigabyte”) is equivalent to 1 billion bytes. The larger the number, the larger the disc space.

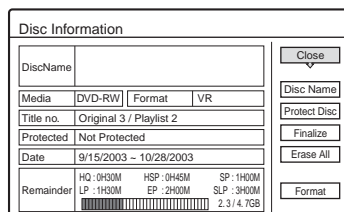
Labeling, protecting, or formatting a disc

+RW -RWVR -RW_{video} +R -R

You can execute options effective for the entire disc using the Disc Information display.

- 1 Press **TOOLS** while the disc is in the recorder.
The **TOOLS** menu appears.
- 2 Select “Disc Info.,” and press **ENTER**.

Example: When the inserted disc is a DVD-RW (VR mode).



- 3 Select an option, and press **ENTER**.

- “Disc Name”: Labels a disc. Enter the disc name in the “Input Disc Name” display (page 39).
- “Protect Disc” (DVD-RW in VR mode only): Protects all titles on the disc. To cancel the protection, select “Don’t Protect.”
- “Erase All” (DVD-RW/DVD+RW only): Erases all titles on the disc (except the protected titles).
- “Format” (DVD-RW/DVD+RW only): Erases all contents of the disc to make a blank disc. For DVD-RWs, select a recording format (VR or Video) according to your needs.

Hints

- You can set protection for individual titles (page 62).
- By reformatting, you can change the recording format on DVD-RWs, or record again on DVD-RWs (Video mode) that have been finalized.

Note

You can enter up to 64 characters for a disc name. The disc name may not appear when the disc is played on other DVD equipment.

Finalizing a disc (preparing a disc for playback on other equipment)

+RW **-RWVR** **-RW_{Video}** **+R** **-R**

Finalizing is necessary when you play discs recorded with this recorder on other DVD equipment.

When you finalize a DVD+RW, DVD-RW (Video mode), DVD+R, or DVD-R, a DVD menu will be automatically created, which can be displayed on other DVD equipment.

Before finalizing, check the differences between the disc types in the table below.

Differences between the disc types

+RW Discs are automatically finalized when removed from the recorder. However, you may need to finalize the disc for certain DVD equipment, or if the recording time is short. You can edit or record on the disc even after finalizing.

-RWVR Finalizing is unnecessary when playing a disc on VR format compatible equipment. Even if your other DVD equipment is VR format compatible, you may need to finalize the disc, especially if the recording time is short. You can edit or record on the disc even after finalizing.

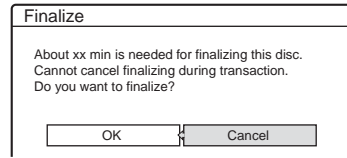
-RW_{Video} Finalizing is necessary when playing on any equipment other than this recorder. After finalizing, you cannot edit or record on the disc. If you want to record on it again, reformat the disc (page 35). However, all recorded contents will be erased.

+R Finalizing is necessary when playing on any equipment other than this recorder.
-R After finalizing, you cannot edit or record on the disc.

1 Press **TOOLS** while the disc is in the recorder.
The **TOOLS** menu appears.

2 Select **"Disc Info.,"** and press **ENTER**.
The Disc Information display appears.

3 Select **"Finalize,"** and press **ENTER**.
The display shows the approximate time required for finalizing and asks for confirmation.



4 Select **"OK,"** and press **ENTER**.
The recorder starts finalizing the disc.

To unfinalize a DVD-RW (VR mode)

If you cannot record or edit on a DVD-RW (VR mode) that has been finalized with other DVD equipment (a message appears), unfinalize the disc by selecting **"Unfinalize"** in step 3 above.

Hint

You can check whether the disc has been finalized or not. If you cannot select **"Finalize"** in step 3 above, the disc has already been finalized.

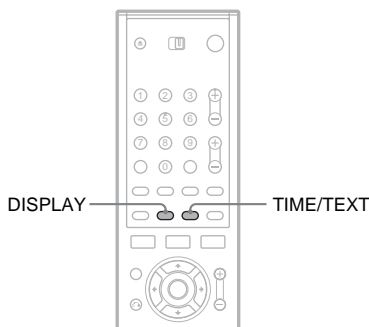
Notes

- Depending on the condition of the disc, recording, or the DVD equipment, discs may not play even if the discs are finalized.
- The recorder may not be able to finalize the disc if it was recorded on another recorder.

Checking the Play Information and Playing Time



You can check the playing time and remaining time of the current title, chapter, or track. Also, you can check the disc name recorded on the disc.



Press DISPLAY repeatedly.

Each time you press the button, the display changes as follows:

Title/track information (Display 1)



Play mode/time information (Display 2)

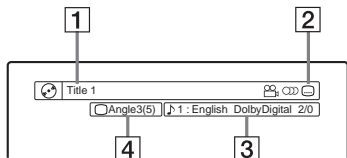


(Display off)

The displays differ depending on the disc type or playing status.

◆ Display 1

Example: When playing a DVD VIDEO

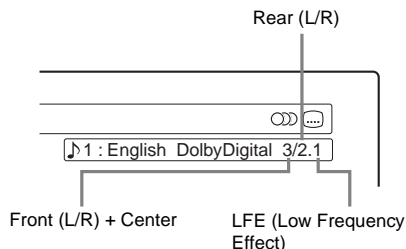


1 Title number/name

(Track number for CDs/VIDEO CDs without PBC, scene number for VIDEO CDs with PBC, track number/name for DATA CDs)

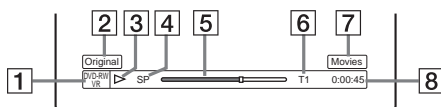
- 2 Available functions for DVD VIDEOS (⊞ angle/⊞ audio/⋮ subtitle, etc.)
- 3 The current selected function or audio setting (appears only temporarily)
- 4 The current selected angle

Example: Dolby Digital 5.1 ch



◆ Display 2

Example: When playing a DVD-RW (VR mode)



- 1 Disc type*2/format (page 8)
- 2 Title type (Original or Playlist) (page 61)
- 3 Play mode
- 4 Recording mode (page 40)
- 5 Playing status bar*3
- 6 Title number (chapter number*1) (page 58)
(Track number for CDs/VIDEO CDs without PBC, scene number for VIDEO CDs with PBC, track number (album number*1) for DATA CDs)
- 7 CD text (album name) appears when text is recorded on a CD.
- 8 Playing time (remaining time*1)

*1 Displayed when you press TIME/TEXT repeatedly.

*2 Displays Super VCDs as "SVCD", DATA CDs as "CD".

*3 Does not appear with VCDs, or DATA CDs.

🔔 Hints

- If “DTS” is set to “Off” in Audio Setup, the DTS track selection option will not appear on the screen even if the disc contains DTS tracks (page 77).
- When “Auto Display” is set to “On” (default) in Options Setup (page 80), playback information automatically appears when the recorder is turned on, etc.

Notes

- The recorder can only display the first level of a CD’s text, such as the disc name.
- The letters or symbols that cannot be displayed are replaced with “*.”

Checking the playing/remaining time

You can view the playing or time information displayed on the TV screen and the front panel display.

Press TIME/TEXT repeatedly.

The displays differ depending on the disc type or playing status.

◆Front panel display

Example: When playing a DVD

Playing time and number of the current title

T 1 1:03:24



Remaining time of the current title

T 1 - 1:15:36



Playing time and number of the current chapter

C 2 02:23:00



Remaining time of the current chapter

C 2 - 01:32:20



Example: When playing a CD

Track playing time and the current track/index number



Remaining time of the current track



Playing time of the disc



Remaining time of the disc



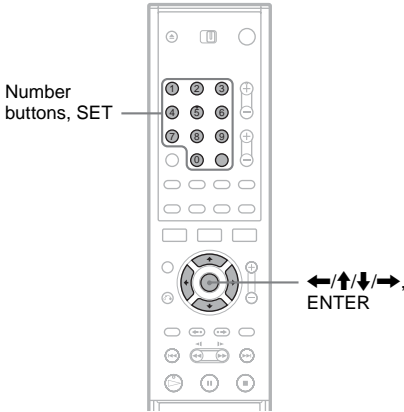
CD text (when available)

Notes

- The recorder can only display the first level of a CD’s text, such as the disc name.
- The letters or symbols that cannot be displayed are replaced with “*.”
- Playing time of MP3 audio tracks may not be displayed correctly.

How to Enter Characters

You can label a title, disc, or program by entering characters. You can enter up to 64 characters for a title or disc name, but the actual number of characters displayed in the menus such as the Title List will vary. When the display for entering characters appears, follow the steps below.



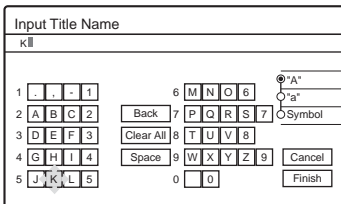
1 Press $\leftarrow/\uparrow/\downarrow/\rightarrow$ to move the cursor to the right of the screen and select "A" (upper-case), "a" (lower-case), or "Symbol," and press ENTER.

The characters of the selected type are displayed.

2 Press $\leftarrow/\uparrow/\downarrow/\rightarrow$ to select the character you want to enter, and press ENTER.

The selected character appears at the top of the display.

Example: Input Title Name



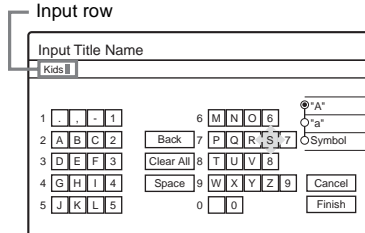
The type of characters will change according to the language you select in Easy Setup. Some languages allow you to enter an accent mark.

To enter a letter with an accent mark, select an accent followed by the letter.

Example: Select "´" and then "a" to enter "à."

To insert a space, select "Space."

3 Repeat steps 1 and 2 to enter the remaining characters.



To erase a character, move the cursor to the right of the character at the input row. Select "Back" and press ENTER.

To insert a character, move the cursor to the right of the point where you want to insert the character. Select the character and press ENTER.

To erase all of the characters, select "Clear All" and press ENTER.

4 Select "Finish," and press ENTER.

To cancel the setting, select "Cancel."

To use the number buttons

You can also use the number buttons to enter characters.

1 In step 2 above, press the number buttons repeatedly to select a character.

Example:

Press the number 3 button once to enter "D."

Press the number 3 button three times to enter "F."

2 Press SET and select the next character.

3 Select "Finish" and press ENTER.

Before Recording

Before you start recording...

- This recorder can record on various discs. Select the disc type according to your needs (page 8).
- Check that the disc has enough available space for the recording (page 34). For DVD+RWs and DVD-RWs, you can free up disc space by erasing titles (page 64).
- Adjust the recording picture quality and picture size if necessary (page 48).

Hint

Timer recordings will be made regardless whether or not the recorder is turned on. You can turn off the recorder without affecting the recording even after recording starts.

Recording mode

Like the SP or LP recording mode of VCRs, this recorder has six different recording modes. Select a recording mode according to the time and picture quality you need. For example, if picture quality is your top priority, select the High Quality mode (HQ). If recording time is your priority, Super Long Play mode (SLP) can be a possible choice. Note that the recording time in the following table is an approximate guide. Press REC MODE repeatedly to switch the recording modes.

I want to record with the best possible picture quality, so I'll select HQ.



Recording mode		Recording time (minute)
HQ (High quality)		60
HSP	↑	90
SP (Standard mode)		120
LP	↓	180
EP	↓	240
SLP (Long duration)		360

Note

Situations below may cause slight inaccuracies with the recording time.

- Recording a program with poor reception, or a program or video source of low picture quality
- Recording on a disc that has already been edited
- Recording only a still picture or just sound

Recording a stereo/SAP program

The recorder can receive and record stereo/SAP programs.

Stereo programs

When a stereo program is received, the “STEREO” indicator lights up on the front panel display. If there is noise in the stereo program, set “Auto Stereo” in Audio Setup to “Off” (page 76). The sound will be recorded in monaural but with less noise.

SAP (Second Audio Program)

When a SAP (Second Audio Program) is received, the “SAP” indicator lights up on the front panel display. To record only SAP sound, set “Tuner Audio” in Audio Setup to “SAP” (page 76).

Hint

You can select the audio (main or SAP) while recording bilingual programs using the AUDIO button. This does not affect the recorded sound.

Unrecordable pictures

Pictures with copy protection cannot be recorded on this recorder.

When the recorder receives a copy guard signal, the recorder continues to record but only a blank, grey colored screen will be recorded.

Copy control signals	Recordable discs
Copy-Free	+RW -RWVR -RW _{Video} +R -R
Copy-Once	-RWVR Ver.1.1 with CPRM*
Copy-Never	None (a blank screen is recorded)

* The recorded disc can be played only on CPRM compatible equipment.

Timer Recording (Standard/VCR Plus+)

+RW -RWVR -RW_{Video} +R -R

You can set the timer for a total of 30 programs, up to one month in advance.

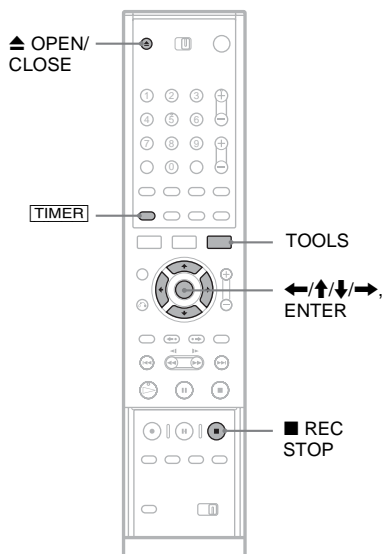
There are two methods to set the timer: the standard method and VCR Plus+ method.

- Standard: Set the date, time, and channel of the program manually.
- VCR Plus+: Enter the PlusCode number designated for each TV program (page 43).

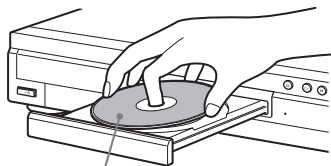
Note

Do not operate your cable box or satellite receiver just before or during a timer recording. This may prevent the accurate recording of a program.

Setting the timer manually (Standard)



- 1 Press **▲ OPEN/CLOSE**, and place a recordable disc on the disc tray.



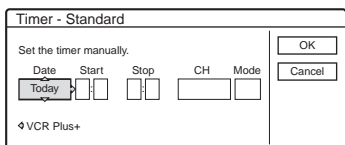
With the recording side facing down

- 2 Press **▲ OPEN/CLOSE** to close the disc tray.

Wait until “LOAD” disappears from the front panel display.

Unused DVDs are formatted automatically.

- 3 Press **[TIMER]**.



If the Timer programming (VCR Plus+) menu appears, press **←** to switch the display to “Standard.”

- 4 Select an item using **←/→** and adjust using **↑/↓**.

“Date”: Sets the date.

The item changes as follows.

Today **↔** Tomorrow **↔** **↔** Tue 10/

28 (1 month later) **↔** Sun (every Sunday)

↔ **↔** Sat (every Saturday) **↔**

Mon-Fri (Monday to Friday) **↔** Mon-Sat

(Monday to Saturday) **↔** Sun-Sat (Sunday to

Saturday) **↔** Today

“Start”: Sets the start time.

“Stop”: Sets the stop time.

“CH”: Selects the channel or input source.

◆When using the cable box/satellite box control

Turn on the cable box or satellite receiver and enter the channel number.

Example: When selecting 215ch

Select 2 and press **→** for the next digit. Select 1 and press **→**. Then select 5.

“Mode”: Selects the recording mode (page 40).

If you make a mistake, select the item and change the setting.

- 5 Select “OK,” and press **ENTER**.

The Timer List menu (page 44) appears. The **TIMER REC** indicator lights up on the front panel and the recorder is ready to start recording.

Unlike a VCR, there is no need to turn off the recorder before the timer recording starts.

To stop recording during timer recording

Open the remote’s cover and press **■ REC STOP**. Note that it may take a few seconds for the recorder to stop recording.

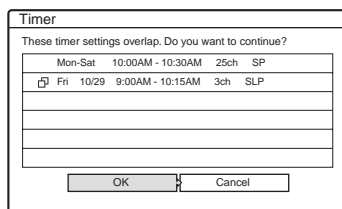
Rec Mode Adjust

If there is not enough available disc space for the recording, the recorder automatically adjusts the recording mode to enable the entire program to be recorded. This function is normally set to “On.”

To cancel this function, press **TOOLS** while the Timer List is displayed. Select “Rec Mode Adjust” and press **ENTER**. Select “Off” and press **ENTER**.

If the timer settings overlap

Overlapped timer settings are shown as follows.



To store the setting as shown, select “OK.” The program at the top of the list has priority over the rest of the programs.

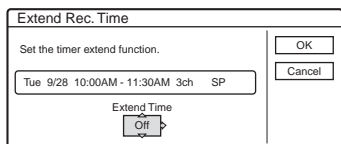
To cancel the overlapped timer setting, select “Cancel.”

To confirm, change, or cancel timer recording

See “Checking/Changing/Canceling Timer Settings (Timer List)” (page 44).

To extend the recording duration time while recording

- 1 Press **TOOLS** during recording.
The **TOOLS** menu appears.
- 2 Select "Extend Rec Time," and press **ENTER**.



- 3 Press **↑/↓** to select the duration time.
You can set the duration in increments of 10 minutes, for a maximum of 60 minutes.
- 4 Select "OK," and press **ENTER**.

Hint

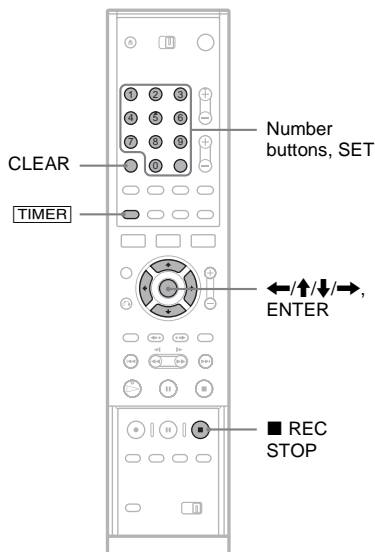
You can play the recorded program by selecting the program title in the Title List menu.

Notes

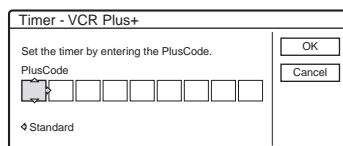
- If "The disc is full or nearly full" appears on the screen, change the disc, or make available space for the recording (DVD+RW/DVD-RW only) (page 64).
- To record a cable or satellite program without using cable box/satellite box control, turn on the cable box or satellite receiver and select the program you want to record. Leave the cable box or satellite receiver turned on until the recorder finishes recording.
- Even if the timer is set for the same daily or weekly program, the timer recording cannot be made if it overlaps with a program that has priority. The mark will appear next to the overlapped setting in the Timer List. Check the priority order of the settings (page 44).
- Even if the timer is set, timer recordings cannot be made while recording a program that has priority.
- The Rec Mode Adjust function only works with a timer recording. It does not function with Quick Timer (page 47).

Recording TV programs using the VCR Plus+ system

The VCR Plus+ system is a feature that simplifies setting the timer. Just enter the PlusCode number listed in the TV program guide. The date, time, and channel of that program are set automatically. Before you start, check that the TV and guide channels are correctly set in "Set VCR Plus+ Channels" in "Settings" (page 71).



- 1 Insert a recordable disc.
- 2 Press **TIMER**.

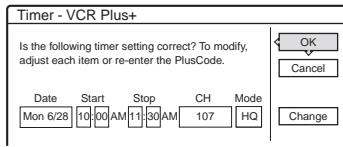


If the Timer programming (Standard) menu appears, press **←** to switch the display to "VCR Plus+."

- 3 Press the number buttons to enter the PlusCode number, and press **SET**.
If you make a mistake, press **CLEAR** and re-enter the correct number.

4 Select "OK," and press ENTER.

The date, start and stop times, channel, and recording mode appear.



If you want to change the setting, press ←/→ to select the item and press ↑/↓ to change the setting.

To re-enter the PlusCode number, select "Change."

5 Select "OK," and press ENTER.

The **TIMER REC** indicator lights up on the front panel, and the recorder is ready to start recording.

To stop recording during timer recording

Open the remote's cover and press **■ REC STOP**. Note that it may take a few seconds for the recorder to stop recording.

If the timer settings overlap

See page 41.

To extend the recording duration time while recording

See page 41.

To confirm, change, or cancel timer recording

See "Checking/Changing/Canceling Timer Settings (Timer List)" (page 44).

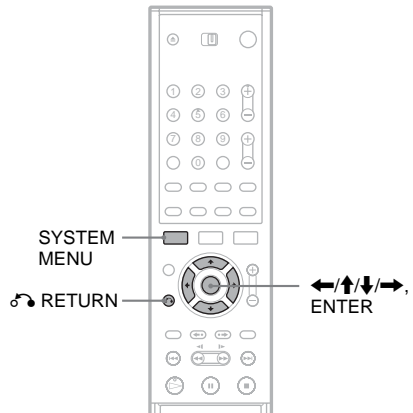
Hint

The Rec Mode Adjust function also works with this timer method (page 41).

Checking/Changing/Canceling Timer Settings (Timer List)

+RW **-RWVR** **-RWvideo** **+R** **-R**

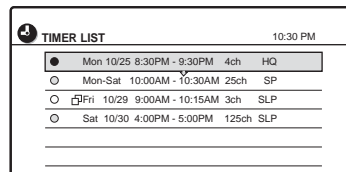
You can check, change, or cancel timer settings using the Timer List menu.



1 Press **SYSTEM MENU**.

The System Menu appears.

2 Select "TIMER LIST," and press **ENTER**.



Timer information displays the recording date, time, recording mode, etc.

“□”: Indicates that the setting is overlapped by another setting.

“○” (green): Indicates that the setting is fully recordable.

“●” (red): Indicates the setting currently being recorded.

“●” (grey): Indicates that the setting cannot be recorded in the selected recording mode.

3 Select the timer setting you want to check/change/cancel, and press **ENTER**.

The sub-menu appears.

4 Select one of the options, and press ENTER.

“Modify”: Changes the timer setting. Select an item using **←/→** and adjust using **↑/↓**. Select “OK” and press ENTER.

Modify

Modify the timer setting.

Date	Start	Stop	CH	Mode
Mon-Sat	10:00 PM	10:15 PM	25	SP

OK
Cancel

“Erase”: Erases the timer setting. Select “OK” and press ENTER.

Erase

Are you sure you want to erase this timer setting?

Mon-Sat 10:00AM - 10:30AM 25ch SP

OK Cancel

“Check Overlap”: Checks for overlapped settings.

The timer setting set most recently is listed at the top and has priority over the other settings. You may not be able to record a program of lower priority.

Check Overlap

These timer settings overlap.

Mon-Sat	10:00AM - 10:30AM	25ch	SP
<input checked="" type="checkbox"/>	Fri 10/29	9:00AM - 10:15AM	3ch SLP

Change Close

To change the priority of a program, press **←/→** to select “Change.” For details, see “Changing the priority of overlapped settings” (page 46).

Select “Close” to return to the Timer List. To change or cancel the setting, repeat steps 3 and 4 above.

To turn off the Timer List

Press **↶** RETURN.

Hint

While recording, you cannot modify the timer setting for the current recording, but you can extend the recording duration of the recording time (page 41).

Notes

- Even if the timer is set, timer recordings cannot be made while recording a program that has priority.
- Even if the timer is set for the same daily or weekly program, the timer recording cannot be made if it overlaps with a program that has priority. “**☐**” will appear next to the overlapped setting in the Timer List. Check the priority order of the settings.

Changing the priority of overlapped settings

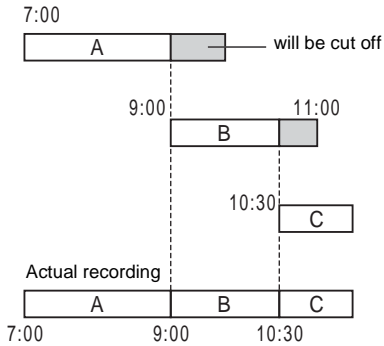
If the timer settings overlap, the program that was set last has priority and will be recorded. A timer recording of lower priority may be canceled, start from the middle or stop midway through the program.

You can change the priority of a program if necessary.

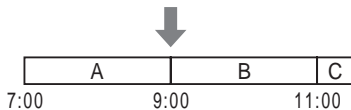
When the timer settings overlap

The program set last has priority.

Example: You set the timer in order of A, B, and C (setting C has first priority)

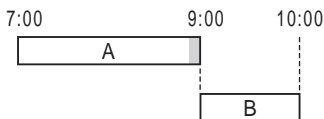


If you give setting B priority over setting C, all of program B will be recorded and program C is recorded only after program B has ended.



If the end time of one recording and the start time of another are the same

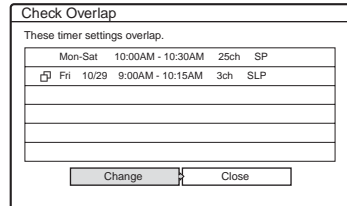
The end of program A will be cut.



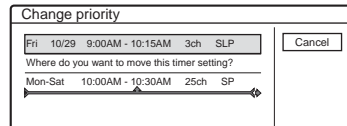
- 1 Press **SYSTEM MENU**.
The System Menu appears.
- 2 Select **"TIMER LIST,"** and press **ENTER**.



- 3 Select an overlapped timer setting, and press **ENTER**.
 indicates that the timer setting is overlapped by another timer setting.
- 4 Select **"Check Overlap,"** and press **ENTER**.



- 5 Select **"Change,"** and press **ENTER**.



- 6 Press **↑/↓** to change the timer setting's priority, and press **ENTER**.

The setting moves to its new location in the list. A timer setting higher up in the list has higher priority.

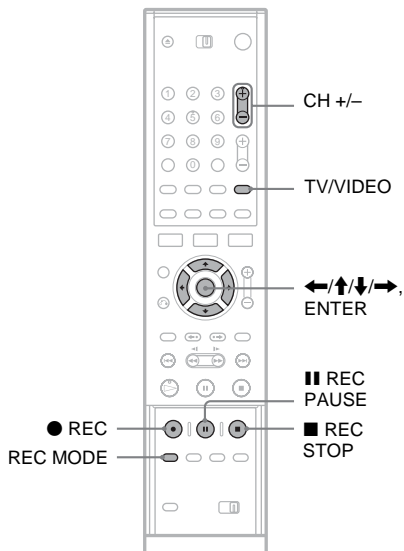
To return to the Timer List, select **"Cancel."**

Hint

You can change the priority of a timer setting while recording.

Recording Without the Timer

+RW -RWVR -RWVideo +R -R



- 1 Insert a recordable disc.
- 2 Press CH +/- to select the channel or input source you want to record.
- 3 Press REC MODE repeatedly to select the recording mode.

Each time you press the button, the display changes on the TV screen as follows:

HQ → HSP → SP → LP → EP → SLP

For more details about the recording mode, see page 40.

- 4 Press ● REC.
Recording starts.
Recording continues until you stop the recording or the disc is full.

To stop recording

Press ■ REC STOP located beneath the remote control cover. Note that it may take a few seconds for recording to stop.

To pause recording

Press || REC PAUSE located beneath the remote control cover. To restart recording, press the button again.

To watch another TV program while recording

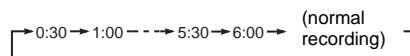
Set your TV to the TV input using the TV/VIDEO button.

Using the Quick Timer function

You can set the recorder to record in 30 minute increments.

Press ● REC repeatedly to set the duration.

Each press advances the time in 30 minute increments. The maximum duration is six hours.



The time counter decreases minute by minute to 0:00, then the recorder stops recording (power does not turn off). Even if you turn off the recorder during recording, the recorder continues to record until the time counter runs out.

To cancel the Quick Timer

Press ● REC repeatedly until the counter appears in the front panel display. The recorder returns to normal recording mode.

Hint

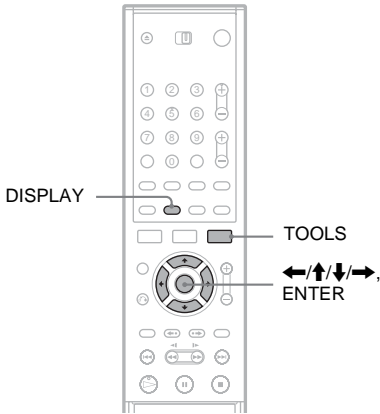
If you do not want to watch TV while recording, you can turn off the TV. When using a cable box, make sure to leave it on.

Notes

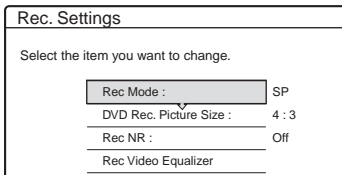
- After pressing ● REC, it may take a short while to start recording.
- You cannot change the recording mode while recording or during recording pause.
- If there is a power failure, the program you are recording may be erased.
- You cannot watch a TV program while recording another TV program.

Adjusting the recording picture quality and size

You can adjust the recording picture quality and picture size.



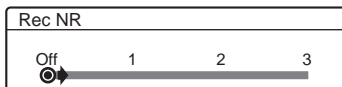
- 1 Before recording starts, press **TOOLS** and select "Rec Settings." Then press **ENTER**.



- 2 Select the item you want to adjust, and press **ENTER**.

The adjustment display appears.

Example: Rec NR



"Rec Mode": Selects the recording mode for the desired recording time and picture quality. For more information, see "Recording mode" (page 40).

"DVD Rec. Picture Size": Sets the picture size of the program to be recorded.

- 4:3 (default): Sets the picture size to 4:3.
- 16:9: Sets the picture size to 16:9 (wide mode).

This function works with DVD-Rs and DVD-RWs (Video mode) when the recording mode is set to HQ, HSP, or SP. For all other recording modes, the screen size is fixed at "4:3."

For DVD-RWs (VR mode), the actual picture size is recorded regardless of the setting. For example, if a 16:9 size picture is received, the disc records the picture as 16:9 even if "Rec Screen Size" is set to "4:3."

For DVD+RWs/DVD+Rs, the screen size is fixed at "4:3."

"Rec NR" (noise reduction): Reduces noise contained in the video signal.

"Rec Video Equalizer": Adjusts the picture in greater detail.

Press **↑/↓** to select the item you want to adjust, then press **ENTER**.

- Contrast: Changes the contrast.
- Brightness: Changes the overall brightness.
- Color: Makes the colors deeper or lighter.
- Hue: changes the color balance.

- 3 Adjust the setting using **←/↑/↓/→**, and press **ENTER**.

The default setting is underlined.

"Rec NR": (weak) Off 1 ~ 3 (strong)

"Rec Video Equalizer":

- Contrast: (weak) -3 ~ 0 ~ 3 (strong)
- Brightness: (dark) -3 ~ 0 ~ 3 (bright)
- Color: (light) -3 ~ 0 ~ 3 (deep)
- Hue: (red) -3 ~ 0 ~ 3 (green)

Repeat steps 2 and 3 to adjust any other items.

Notes

- If one program contains two picture sizes, the selected size is recorded. However, if the 16:9 signal cannot be recorded as 16:9, it is recorded as 4:3.
- When playing a 16:9 size picture recorded as 4:3, the image is fixed to 4:3 letter box regardless of the setting in "TV Type" of Video Setup (page 74).
- Remnants of images may appear on your screen when using "Rec NR."

Checking the disc status while recording

You can check the recording information such as recording time or disc type.

Press **DISPLAY** twice during recording.

The recording information appears.



- 1 Disc type/format
- 2 Recording status
- 3 Recording mode
- 4 Recording time

Press **DISPLAY** to turn off the display.

Creating chapters in a title

The recorder will automatically divide a recording (a title) into chapters by inserting chapter marks at 6 or 15 minute intervals during recording. Select the interval, “6Min” (default) or “15Min” in “Auto Chapter” of Features Setup (page 78).

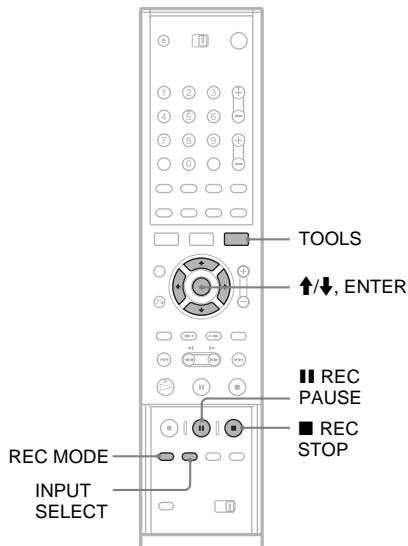
Hint

You can create chapters manually when playing DVD-RWs (VR mode). For details, see page 65.

Recording From a VCR or Similar Device

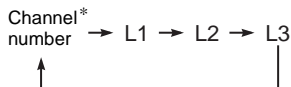
+RW **-RWVR** **-RW_{Video}** **+R** **-R**

You can record from a connected VCR or similar device. To connect a VCR or similar device, see “Connecting a VCR or Similar Device” (page 29).



- 1 Insert a recordable disc.
- 2 Press **INPUT SELECT** to select an input source according to the connection you made.

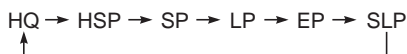
The front panel display changes as follows:



* Does not appear when “Set Top Box Control” is set to “On.”

- 3 Press **REC MODE** repeatedly to select the recording mode.

The recording mode changes as follows:



4 Press **TOOLS** and select “Line Audio Input.” Then press **ENTER**.

“Main/Sub”: Records the two different sound tracks on DVD-RWs (VR mode). You can select either sound track when playing back the disc.

“Stereo” (default): Records stereo sound only. Select this for discs other than DVD-RWs (VR mode).

5 Press **■ REC PAUSE** to set this recorder to record pause.

6 Insert the source tape into the connected equipment and set to playback pause.

7 At the same time, press **■ REC PAUSE** on this recorder and the pause or play button on the connected equipment.

Recording starts.

To stop recording, press **■ REC STOP** on this recorder.

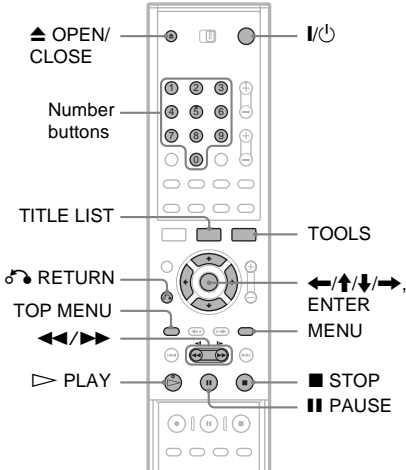
 **Hint**

You can adjust the settings for the recording picture before recording. See “Adjusting the recording picture quality and size” (page 48).

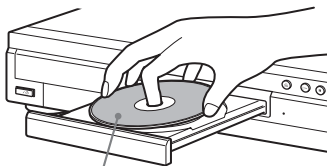
Notes

- When recording a video game image, the screen may not be clear.
- Any program that contains a Copy-Never copy guard signal cannot be recorded. The recorder continues to record, but a blank screen will be recorded.

Playing



1 Press **▲ OPEN/CLOSE**, and place a disc on the disc tray.



With the playback side facing down

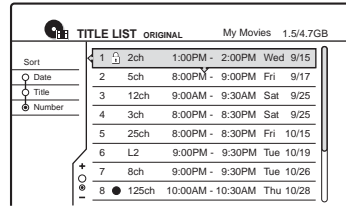
2 Press **▲ OPEN/CLOSE** to close the disc tray.

If you inserted a DVD VIDEO, VIDEO CD, CD, or DATA CD, press **▷ PLAY**. Playback starts.

3 Press **TITLE LIST**.

For details about the Title List, see “Using the Title List” (page 32).

Example: DVD-RW (VR mode)



4 Select the title, and press **ENTER**.

The sub-menu appears.

5 Select “Play,” and press **ENTER**.

Playback starts from the selected title on the disc.

To use the DVD’s Menu

When you play a DVD VIDEO, or a finalized DVD+RW, DVD-RW (Video mode), DVD+R, or DVD-R, you can display the disc’s menu by pressing **TOP MENU** or **MENU**.

To play VIDEO CDs with PBC functions

PBC (Playback Control) allows you to play VIDEO CDs interactively using the menu on your TV screen.

When you start playing a VIDEO CD with PBC functions, the menu appears. Select an item using the number buttons and press **ENTER**. Then follow the instructions in the menu (press **▷ PLAY** when “Press SELECT” appears). The PBC function of Super VCDs does not work with this recorder. Super VCDs are played in continuous play mode only.

To stop playback

Press **■ STOP**.

To resume playback from the point where you stopped the disc (Resume Play)

When you press **▷ PLAY** again after you stop the disc, the recorder resumes playback from the point where you pressed **■ STOP**. To start from the beginning, press **TOOLS**, select “Play Beginning” and press **ENTER**. Playback starts from the beginning of the title/track/scene.

The point where you stopped playing is cleared when:

- you open the disc tray.
- you play another title.
- you switch the Title List menu to Original or Playlist (DVD-RW in VR mode only).
- you edit the title after stopping playback.
- you change the settings on the recorder.
- you turn off the recorder (VIDEO CD/CD/DATA CD only).
- you make a recording (except for DVD-RWs in VR mode).

To play restricted DVDs (Parental Control)



If you play a restricted DVD, the message “Do you want temporarily change parental control to *?” appears on your TV screen.


- 1 Select “OK” and press ENTER.
The display for entering your password appears.
- 2 Enter your four digit password using the number buttons.
- 3 Press ENTER to select “OK.”
The recorder starts playback.



To register or change the password, see “Parental Control (DVD VIDEO only)” (page 78).

To lock the disc tray (Child Lock)


You can lock the disc tray to prevent children from ejecting the disc.

When the recorder is in standby mode, press  RETURN, ENTER, and then  on the remote.

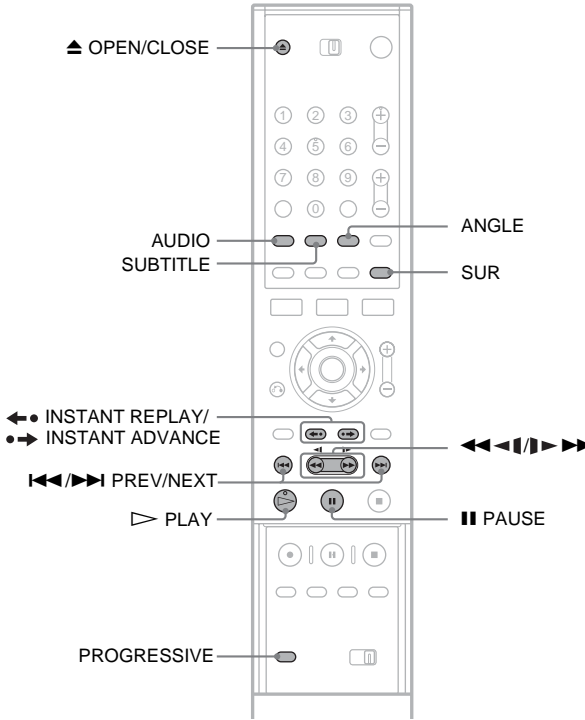
The recorder turns on and “LOCKED” appears on the front panel display. The  OPEN/CLOSE button does not work while the Child Lock is set.

To unlock the disc tray, press  RETURN, ENTER, and then  on the remote again when the recorder is in standby mode.

Hints

- You can also use the  PLAY button in step 4 (page 51) to start playback.
- Even if a timer recording starts during playback, neither the recording nor playback will stop (DVD-RWs (VR mode) only). See page 57.
- Even if you select “Factory Setup” in Options Setup (page 80), the Child Lock remains set.

Playback options



Buttons	Operations	Discs
▲ OPEN/CLOSE	Stops play and opens the disc tray.	All discs
AUDIO	<p>Selects one of the audio tracks recorded on the disc when pressed repeatedly.</p> <p>DVD Selects the language.</p> <p>-RWVR Selects the main or secondary audio program (SAP).</p> <p>CD VCD DATA CD Selects stereo or monaural audio tracks.</p>	<p>-RWVR DVD VCD</p> <p>CD DATA CD</p>
SUBTITLE	Selects a subtitle language when pressed repeatedly.	DVD
ANGLE	<p>Selects an angle when pressed repeatedly.</p> <p>If various angles (multi-angles) for a scene are recorded on the disc, “ ” appears in the front panel display.</p>	DVD

Buttons	Operations	Discs								
SUR (surround)	<p>Selects one of the TVS effects when pressed repeatedly.</p> <p>TVS* (TV Virtual Surround) lets you enjoy virtual surround sound effects created from the front left and right speakers. The selected setting is displayed in the front panel display for a few seconds.</p> <p>“TVS OFF”: No surround effect</p> <p>“TVS DYNAMIC”: Creates one set of virtual rear speakers.</p> <p>“TVS WIDE”: Creates five sets of virtual rear speakers.</p> <p>“TVS NIGHT”: Creates five sets of virtual rear speakers. Effective at low volume.</p> <p>“TVS STANDARD”: Creates three sets of virtual rear speakers. Effective when you use two separate front speakers.</p>	<p>DVD</p> <p>* TVS was developed by Sony to produce home surround sound with just a stereo TV. This only works with multichannel Dolby Digital soundtracks.</p>								
PROGRESSIVE	<p>Switches the type of video output signal to interlace or progressive format (page 17).</p>	<p>+RW -RWVR -RWVideo</p> <p>+R -R DVD</p> <p>VCD</p>								
◀• INSTANT REPLAY/•▶▶ INSTANT ADVANCE	<p>Replays the scene/briefly fast forwards the scene.</p>	<p>+RW -RWVR -RWVideo</p> <p>+R -R DVD</p>								
◀◀ PREV/ ▶▶ NEXT	<p>Goes to the beginning of the previous/next title/ chapter/scene/track.</p>	All discs								
◀◀◀/▶▶▶ (fast reverse/fast forward)	<p>Fast reverses/fast forwards the disc when pressed during playback.</p> <p>Search speed changes as follows:</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td>fast reverse</td> <td>fast forward</td> </tr> <tr> <td>FR1 ←</td> <td>→ FF1</td> </tr> <tr> <td>FR2 ← ←</td> <td>→ → FF2</td> </tr> <tr> <td>FR3* ← ← ←</td> <td>→ → → FF3*</td> </tr> </table> <p>When you press and hold the button, fast forward/fast reverse continues at the selected speed until you release the button.</p>	fast reverse	fast forward	FR1 ←	→ FF1	FR2 ← ←	→ → FF2	FR3* ← ← ←	→ → → FF3*	<p>All discs</p> <p>* FR3 and FF3 are only available for DVDs.</p>
fast reverse	fast forward									
FR1 ←	→ FF1									
FR2 ← ←	→ → FF2									
FR3* ← ← ←	→ → → FF3*									
◀◀◀/▶▶▶ (slow, freeze frame)	<p>Plays in slow motion when pressed for more than one second in pause mode.</p> <p>Plays one frame at a time when pressed briefly in pause mode.</p>	<p>+RW -RWVR -RWVideo</p> <p>+R -R DVD</p> <p>VCD *</p> <p>* Playback direction only</p>								
PAUSE	<p>Pauses playback.</p>	All discs								

To resume normal playback, press ▷ PLAY.

Notes

- To enjoy the TVS function, set “Digital Output” to “On” and “Dolby Digital” to “D-PCM” in Audio Setup.
- When the playback signal does not contain a signal for the rear speakers, the surround effects will be difficult to hear.
- When you select one of the surround modes, turn off the surround settings of the connected TV or amplifier (receiver).
- Make sure that your listening position is between and at an equal distance from your speakers, and that the speakers are located in similar surroundings.
- The TVS function cannot be used with discs recorded on this recorder. Angles and subtitles also cannot be changed.

Notes on playing DTS sound tracks on a CD

- When playing DTS-encoded CDs, excessive noise will be heard from the analog stereo jacks. To avoid possible damage to the audio system, the consumer should take proper precautions when the analog stereo jacks of the recorder are connected to an amplification system. To enjoy DTS Digital Surround™ playback, an external 5.1-channel decoder system must be connected to the digital jack of the recorder.
- Set the sound to “Stereo” using the AUDIO button when you play DTS sound tracks on a CD (page 53).

Notes on playing DVDs with a DTS sound track

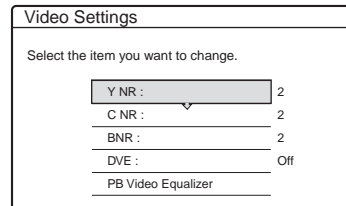
DTS audio signals are output only through the DIGITAL OUT (COAXIAL or OPTICAL) jack.

When you play a DVD with DTS sound tracks, set “DTS” to “On” in Audio Setup (page 77).

Adjusting the picture quality

+RW -RWVR -RWvideo +R -R DVD
VCD

- 1 Press **TOOLS** during playback.
The **TOOLS** menu appears.
- 2 Select “Video Settings,” and press **ENTER**.



- 3 Select an item, and press **ENTER**.

The adjustment display appears.

“Y NR” (luminance noise reduction):

Reduces noise contained in the luminance element of the video signal.

“C NR” (chroma noise reduction): Reduces noise contained in the color element of the video signal.

“BNR” (block noise reduction): Reduces “block noise” or mosaic like patterns in the picture.

“DVE” (digital video enhancer): Sharpens the outlines of the images.

“PB Video Equalizer” (Playback video equalizer): Adjusts the picture in greater detail.

Select an item and press **ENTER**.

- Contrast: changes the contrast.
- Brightness: changes the overall brightness.
- Color: makes the colors deeper or lighter.
- Hue: changes the color balance.

4 Press \leftarrow/\rightarrow to adjust the setting, and press ENTER.

The default settings are underlined.

“Y NR”: (weak) Off 1 2 3 (strong)

“C NR”: (weak) Off 1 2 3 (strong)

“BNR”: (weak) Off 1 2 3 (strong)

“DVE”*: (weak) Off 1 2 3 (strong)

“PB Video Equalizer”:

- Contrast: (weak) $-3 \sim \underline{0} \sim 3$ (strong)
- Brightness: (dark) $-3 \sim \underline{0} \sim 3$ (bright)
- Color: (light) $-3 \sim \underline{0} \sim \underline{3}$ (deep)
- Hue: (red) $-3 \sim \underline{0} \sim 3$ (green)

Repeat steps 3 and 4 to adjust any other items.

* “1” softens the outlines of the images. “2”

enhances the outlines and “3” enhances them more than “2.”

Notes

- If the outlines of the images on your screen become blurred, set “BNR” to “Off.”
- Depending on the disc or the scene being played, the above BNR, Y NR, or C NR effects may be hard to discern. And, these functions may not work with some screen sizes.
- When playing a disc recorded in SLP recording mode, the BNR setting may have little effect.
- When using the DVE function, noise found in the disc may become more apparent. In this case, it is recommended that you use the BNR function with the DVE function. If the condition still does not improve, set the DVE level to “1” or “Off.”

Adjusting the sound quality



- 1 Press TOOLS during playback.
The TOOLS menu appears.
- 2 Select “Audio Settings,” and press ENTER.
- 3 Select an item, and press ENTER.

“Surround (TVS)” (DVD VIDEO only):

Selects one of the surround modes. For more information, see “Playback options” (page 53).

“Audio Filter” (all discs): Selects the digital filter to reduce noise above 22.05 kHz (Fs* is 44.1 kHz), 24 kHz (Fs is 48 kHz), or 48 kHz (Fs is above 96 kHz).

- Sharp (default): Provides a wide frequency range and spatial feeling.
- Slow: Provides smooth and warm sound.
* Sampling frequency of audio source

This function only adjusts the output signals from the LINE OUT (AUDIO L/R) 1/2 jacks.

- 4 Press $\leftarrow/\uparrow/\downarrow/\rightarrow$ to select the option, and press ENTER.

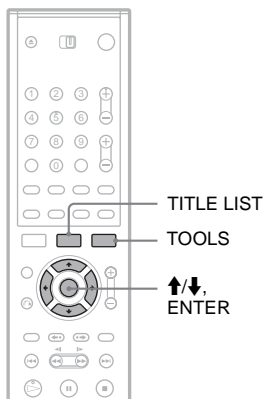
Note

There may be little effect by changing the Audio Filter depending on the disc or playback environment.

Chasing Playback/ Simultaneous Rec and Play

-RWVR

“Chasing Playback” allows you to view the beginning of a program while it is being recorded. “Simultaneous Rec and Play” allows you to view a previously recorded program while recording another on the same disc.



Playing from the beginning of the program you are recording

You can view the recorded part of a program while the recording is being made. You do not need to wait until the recording finishes.

- 1 Press **TOOLS** while recording.
The **TOOLS** menu appears.
- 2 Select “Chasing Playback,” and press **ENTER**.

Playback starts from the beginning of the program you are recording.

When you fast forward to the point that you are recording, Chasing Playback returns to normal playback.

Notes

- This function does not work when recording:
 - on a 1x-speed DVD-RW.
 - in the HQ or HSP recording mode.
- The picture on your TV screen freezes for a few seconds when you fast-forward/fast-reverse or Instant Replay/Advance the recording.

Playing a previous recording while making another

You can play a previously recorded program while recording another on the same disc. Playback continues even if the recording is a timer recording.

- 1 While recording, press **TITLE LIST**.
The Title List menu appears.
- 2 Select the title you want to play, and press **ENTER**.
The sub-menu appears.
- 3 Select “Play”, and press **ENTER**.
Playback starts from the selected title.

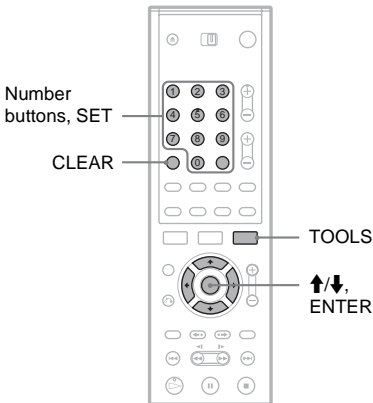
Notes

- This function does not work when recording:
 - on a 1x-speed DVD-RW.
 - in the HQ or HSP recording mode.
- The picture on your TV screen freezes for a few seconds when you fast-forward/fast-reverse or instant replay/instant advance the recording.
- When playing a title recorded in the HQ or HSP recording mode, picture noise may appear depending upon the condition of the recording.

Searching for a Title/ Chapter/Track, etc.

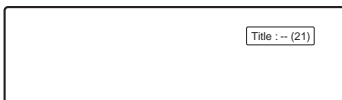


You can search a DVD by title or chapter, and VIDEO CD/CD/DATA-CD by track or scene. As titles and tracks are assigned individual numbers on the disc, select the title or track by entering its number. You can also search for a scene using the time code.



- 1 Press TOOLS during playback.**
The TOOLS menu appears.
- 2 Select a search method, and press ENTER.**
 - “Title Search” (for DVDs)
 - “Chapter Search” (for DVDs)
 - “Track Search” (for CDs/DATA CDs)
 - “Search” (for VIDEO CDs)
 - “Album Search” (for DATA CDs)
 - “Time Search” (for DVDs): Searches for a starting point by entering the time code.

The display for entering the number appears.
Example: Title Search



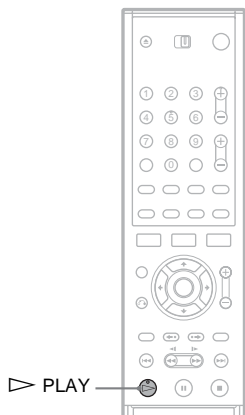
The number in parentheses indicates the total number of titles, tracks, etc.

- 3 Press the number buttons to select the number of the title, chapter, track, time code, etc., you want.**
For example: Time Search
To find a scene at 2 hours, 10 minutes, and 20 seconds, enter “21020.”
If you make a mistake, press CLEAR to cancel the number, then select another number.
- 4 Press SET.**
The recorder starts playback from the selected number.

Playing MP3 Audio Tracks

DATA CD

You can play MP3 audio tracks on DATA CDs (CD-ROMs/CD-Rs/CD-RWs).



1 Insert a DATA CD on the disc tray.

2 Press **▷ PLAY**.

Playback starts from the first MP3 audio track on the disc. Note that the playback order may be different from the edited order. See “Playback order of MP3 audio tracks.”

About MP3 audio tracks

MP3 is audio compression technology that satisfies certain ISO/MPEG regulations. You can play back DATA CDs (CD-ROMs/CD-Rs/CD-RWs) recorded in MP3 (MPEG1 Audio Layer 3) format. However, the discs must be recorded according to ISO9660 Level 1, Level 2 or Joliet format for the recorder to recognize the tracks. You can also play discs recorded in Multi Session.

See the instructions supplied with the CD-R/CD-RW drives and the recording software (not supplied) for details on the recording format.

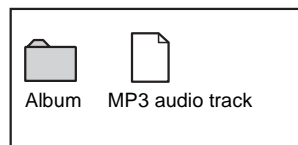
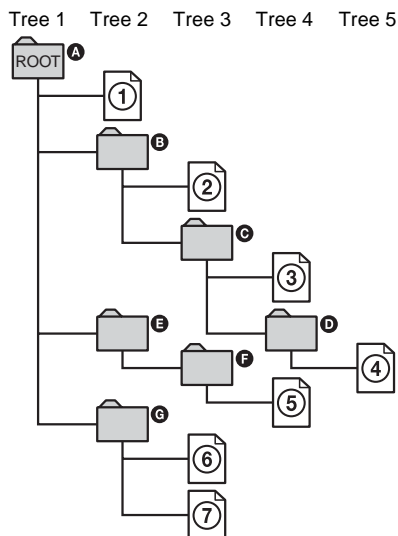
Note on Multi Session discs

If MP3 audio tracks are recorded in the first session, the recorder will also play MP3 audio tracks in other sessions. If audio tracks in Music CD format are recorded in the first session, only the first session will be played back.

Playback order of MP3 audio tracks

Albums containing MP3 audio tracks play in the following order.

A → **B** → **C** → **D** → **F** → **G**. Albums that do not contain tracks (such as album **E**) are skipped.



When you insert a DATA CD and press **▷ PLAY**, the numbered tracks are played sequentially, from **①** through **⑦**. Any sub-albums/tracks contained within a currently selected album take priority over the next album in the same tree. (Example: **C** contains **D** so **④** is played before **⑤**.)

🔧 Hints

- You can view the disc information while playing MP3 audio tracks (page 38).
- If you add numbers (01, 02, 03, etc.) to the front of the track names when you store the tracks in a disc, the tracks will be played in that order.
- Since a disc with many trees takes longer to start playback, it is recommended that you create albums with no more than two trees.

Notes

- Depending on the software you use to create the DATA CD, the playback order may differ from the above illustration.
- Proceeding to the next or another album may take some time.
- The recorder may not be able to play some DATA CDs created in the Packet Write format.
- The recorder will play any data with the extension “.MP3,” even if they are not in MP3 format. Playing this data may generate a loud noise which could damage your speaker system.
- The recorder does not conform to audio tracks in MP3PRO format.
- The playback order above may not be applicable if there are more than a total of 999 albums and tracks in the DATA CD.
- The recorder can recognize up to 499 albums (the recorder will count just albums, including albums that do not contain MP3 audio tracks). The recorder will not play any albums beyond the first 499 albums. Of the first 499 albums, the recorder will play no more than a combined total of 999 albums and tracks.
- The recorder can play MP3 audio tracks recorded in the following sampling frequencies: 32 kHz, 44.1 kHz, 48 kHz.
- ID3 tags cannot be displayed.
- Only alphabet and numbers can be used for album or track names. Anything else is displayed as an asterisk.

Editing

Before Editing

This recorder offers various edit options for various disc types. Before you edit, check the disc type in the front panel display, and select the option available for your disc (page 8).

Note

You may lose the edited contents if you remove the disc or a timer recording starts while editing.

Edit options for DVD+RWs/DVD-RWs (Video mode)/DVD+Rs/DVD-Rs

+RW -RW_{Video} +R -R

You can perform simple edits. Since Video mode titles are actual recordings on the disc, you cannot undo any edits you make. The edit functions available for Video mode titles are:

- Setting protection against erasure (page 62).
- Labeling a title (page 62).
- Erasing a title (page 62).
- Erasing multiple titles (page 63).
- Erasing a section of a title (A-B Erase) (DVD+RWs only) (page 63).
- Erasing titles to open up disc space (Disc Map) (DVD-RWs in Video mode and DVD+RWs only) (page 64).

Notes

- Once the disc is finalized, you cannot edit or record on the disc (except for DVD-RWs (VR mode) and DVD+RWs).
- You cannot create a Playlist (see below).
- If a message appears and indicates that the disc's control information is full, erase unnecessary titles.

Edit options for DVD-RWs (VR mode)

-RWVR

You can enjoy advanced edit functions. First you have two options for a DVD-RW (VR mode): editing either the original recording (called the "original"), or the playback information created from the original (called a "Playlist"). Since each is different in nature and offers different merits, read the following and select the one that better suits your needs.

To edit original titles

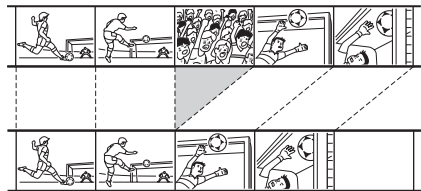
Edits made to the original titles are final. If you plan to retain an unaltered original recording, create and edit a Playlist (see below). The edit functions available for original titles are:

- Labeling a title (page 62).
- Setting protection against erasure (page 62).
- Erasing a title (page 62).
- Erasing multiple titles (page 63).
- Erasing a section of a title (A-B Erase) (page 63).

To create and edit Playlist titles

A Playlist is a group of Playlist titles created from the original title for editing purposes. When you create a Playlist, only the control information necessary for playback, such as the playback order, is stored on the disc. Since the original titles are left unaltered, Playlist titles can be re-edited.

Example: You have recorded the final few matches of a soccer tournament on a DVD-RW (VR mode). You want to create a digest with the goal scenes and other highlights, but you also want to keep the original recording.



In this case, you can compile highlight scenes as a Playlist title. You can even rearrange the scene order within the Playlist title ("Creating and Editing a Playlist" on page 65).

The advanced edit functions available for Playlist titles are:

- Labeling a title (page 62).
- Erasing a title (page 62).
- Erasing multiple titles (page 63).
- Erasing a section of a title (A-B Erase) (page 63).
- Rearranging the title order (page 67).
- Dividing a title into multiple titles (page 67).
- Combining multiple titles into one title (page 68).

Hint

You can display the disc's Playlist titles in the Title List (Playlist), or the original titles in the Title List (Original). To switch the two Title Lists, press TOOLS while a Title List is displayed, and select "Original" or "Playlist."

Notes

- The Playlist title calls up data from the original titles for playback. When an original title is used for a Playlist title, the original title cannot be erased.
- You cannot protect Playlist titles.
- If a message appears and indicates that the disc's control information is full, erase unnecessary titles.

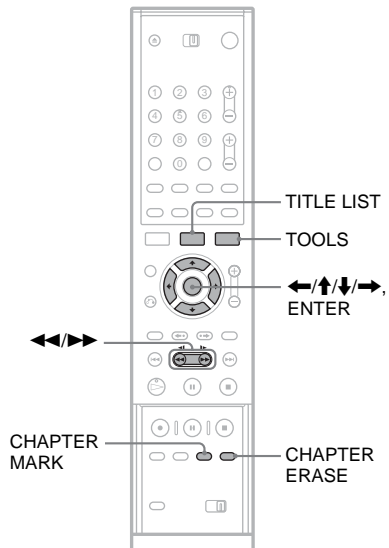
Editing a Title

+RW **-RW/VR** **-RW_{Video}** **+R** **-R**


This section explains the basic edit functions. Note that editing is irreversible. To edit a DVD-RW (VR mode) without changing the original recordings, create a Playlist title (page 84).

Note

When editing a DVD+R, DVD-R, or DVD-RW (Video mode), finish all editing before finalizing the disc. You cannot edit a finalized disc.



- 1 Press TITLE LIST.**
When editing a DVD-RW in VR mode, press TOOLS and select "Original" or "Playlist" from the TOOLS menu to switch the Title Lists, if necessary.
- 2 Select a title, and press ENTER.**
The sub-menu appears.
- 3 Select an option, and press ENTER.**
You can make the following edits to the title.
"Erase": Erases the selected title. Select "OK" when asked for confirmation. When the title is protected, the display asks for confirmation. To erase, select "Change," and when the Protection display appears, select "Off."

“Protect Title”: Protects the title. Select “On” when the Protection display appears. “” appears next to the protected title. To cancel the protection, select “Off.”

“Title Name”: Allows you to enter or re-enter a title name (page 39).

“Set Thumbnail”: Changes the title’s thumbnail picture that appears in the Title List (page 32).

“A-B Erase”: Erases a section of the title (see below).

Hints

- You can erase multiple titles at one time (page 63), or erase all of the titles on the disc at once (page 35).
- You can label or re-label DVDs (page 35).

Note

You cannot protect Playlist titles.

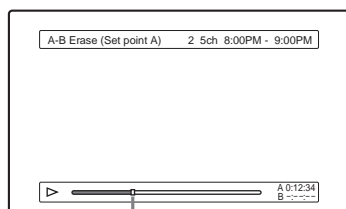
Erasing a section of a title (A-B Erase)

+RW **-RWvR**

You can select a section (scene) in a title and erase it. Note that erasing scenes in a title cannot be undone.

1 After step 2 of “Editing a Title,” select “A-B Erase” and press ENTER.

The display for setting point A appears.

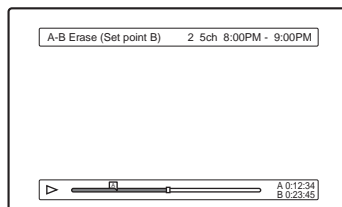


Playback point

When the title is protected, the display asks for confirmation. To continue, select “Change,” and when the protection display appears, select “Off.”

2 Select point A by pressing , and press ENTER.

The display for setting point B appears.



3 Select point B by pressing , and press ENTER.

The display asks for confirmation. To reset either point A or B, select “Change A” or “Change B,” and go to step 2 or 3.

4 Select “OK,” and press ENTER.

The scene is erased, and the display asks whether to erase another scene. To continue, select “Yes,” and repeat from step 2. To finish, select “No.”

Hint

A chapter mark is inserted after the scene was erased. The chapter mark divides the title into separate chapters on either side of the mark.

Notes

- Images or sound may be momentarily interrupted at the point where you erase a section of a title.
- Sections shorter than five seconds may not be erased.
- For DVD+RWs, the erased section may be slightly different from the points you selected.

Erasing multiple titles (Erase Titles)

+RW **-RWvR** **-RWVideo** **+R** **-R**

You can select and erase two or more titles at one time using the TOOLS menu.

1 Press TITLE LIST to turn on the Title List menu, and press TOOLS.

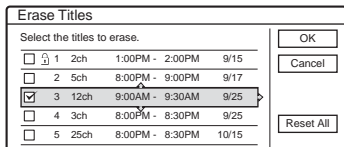
The TOOLS menu appears.

2 Select “Erase Titles,” and press ENTER.

The display for selecting titles to be erased appears.

3 Select a title, and press ENTER.

A check mark appears in the check box next to the selected title. To clear the check mark, press ENTER again. To clear all of check marks, select "Reset All."



- When the title is protected, the display asks for confirmation. To continue, select "Change," and when the protection display appears, select "Off." To cancel, select "Close."

4 Repeat step 3 to select all of the titles you want to erase.

5 When you finish selecting titles, select "OK," and press ENTER.

The list of the titles to be erased appears for confirmation. To change the selection, select "Change," and repeat from step 3.

6 Select "OK," and press ENTER.

The titles are erased.

Erasing titles to open up disc space (Disc Map)

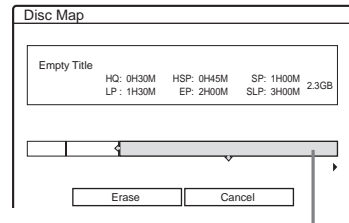
+RW -RW_{video}

When recording on a DVD+RW or DVD-RW (Video mode), the recorder searches for the largest open space and records there. Before you start, check the disc status by using Disc Map, and erase titles to create a space large enough for the recording.

1 Insert a disc and press TITLE LIST.

2 Press TOOLS and select "Disc Map," and press ENTER.

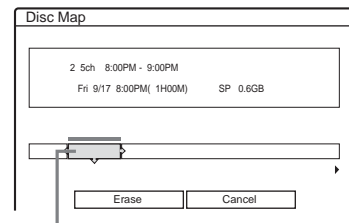
The Disc Map appears. To check the open space, select the space by pressing ◀/▶.



- When ◀ or ▶ appears on either side of the screen, you can scroll sideways by pressing ◀/▶.

3 Select a title by pressing ◀/▶, and press ENTER.

The display for selecting titles to be erased appears. To cancel the selection, press ENTER again.



- When the title is protected, the display asks for confirmation. To continue, select "Change," and when the protection display appears, select "Off." To cancel, select "Close."

4 Repeat step 3 when erasing more titles.

5 Select "Erase," and press ENTER.

The display asks for confirmation. To change the selection, select "Change."

6 Select "OK," and press ENTER.

The selected titles are erased, freeing up disc space.

Creating chapters manually

-RWVR

You can manually insert a chapter mark at any point you like during playback or recording.

- 1 Press **CHAPTER MARK** at the point where you want to divide the title into chapters. Each time you press the button, “Marking...” appears on the screen and the scenes to the left and right of the mark become separate chapters.



To erase chapter marks

You can combine two chapters by erasing the chapter mark during playback.

Press **◀◀/▶▶** to search for a chapter number, and while displaying the chapter containing the chapter mark you want to erase, press **CHAPTER ERASE**.

The current chapter combines with the previous chapter.

Note

If a message appears and indicates that no more chapter marks can be added, you may not be able to record or edit.

Creating and Editing a Playlist

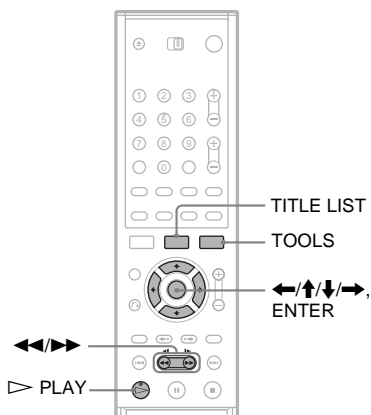
-RWVR

Playlist edit allows you to edit or re-edit without changing the actual recordings. A Playlist title can contain up to 50 scenes.

For details, see “Edit options for DVD-RWs (VR mode)” (page 61).

Note

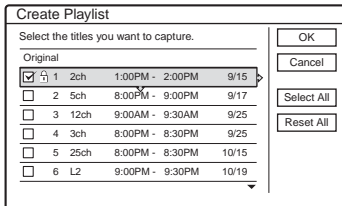
Once you create a Playlist title from original titles, you will be unable to erase or edit the original titles.



- 1 Press **TITLE LIST** to turn on the Title List menu, and press **TOOLS**. The **TOOLS** menu appears.
- 2 Select “Create Playlist,” and press **ENTER**. The display for selecting titles appears.

3 Select the title you want to include in the Playlist title, and press ENTER.

A check mark appears in the check box next to the selected title. To clear the check mark, press ENTER again. To select all of the titles, select "Select All."

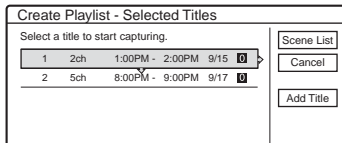


4 Repeat step 3 to add more titles.

To go to the next page of titles, press ↓. To clear all of the check marks, select "Reset All."

5 Select "OK," and press ENTER.

The list of selected titles appears. To add another title, select "Add Title."



6 Select one of the titles, and press ENTER.

The sub-menu appears.

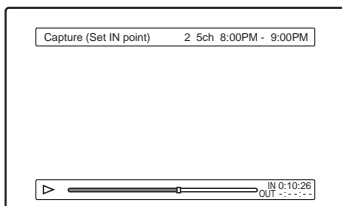
"Capture": Adds a section of the title to the Playlist title as one scene.

"Capture All": Adds the entire title to the Playlist title as one scene. After capturing the title, select "Scene List" and go to step 12.

"Check Scenes": Allows you to check the captured scene.

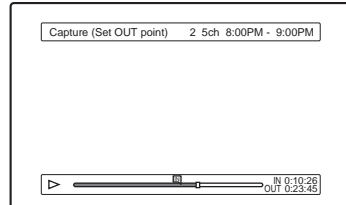
7 Select "Capture," and press ENTER.

The display for setting the start point (IN) appears. The title starts to play in the background.



8 Select the IN point by pressing ◀/▶, and press ENTER.

The display for setting the end point (OUT) appears, and the title continues to play in the background.



9 Select the OUT point by pressing ◀/▶, and press ENTER.

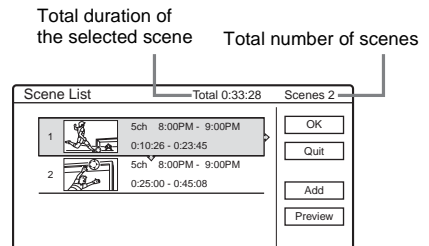
The display asks for confirmation. To reset the IN or OUT point, select "Change IN" or "Change OUT" and repeat step 8 or 9. To view the selected scene, select "Preview."

10 Select "OK," and ENTER.

The selected section is captured as a scene, and the display asks whether you want to continue. To continue, select "More," and repeat the steps above. To capture a scene from another title, select "New Title."

11 When you finish capturing scenes, select "No More" and press ENTER.

The Scene List menu appears with all of the selected scenes.



12 Select the scene you want to edit, and press ENTER.

The sub-menu appears.

"Move": Changes the scene order.

"Erase": Erases the scene. The selection is canceled.

"Preview": Displays thumbnail pictures of the scenes.

"Change IN": Allows you to change the IN point, and repeat from step 8.

“Change OUT”: Allows you to change the OUT point, and repeat from step 9.

To add more scenes, select “Add” and go to step 6. To preview all of the captured scenes in the listed order, select “Preview.”

13 When you finish editing the Scene List, select “OK,” and press ENTER.

The display for entering the title name appears. To enter a new name, select “Enter” (see page 39).

14 Select “OK” to use the default name, and press ENTER.

To play the Playlist title

Press TOOLS while the Title List menu is turned on. Then, select “Playlist” and press ENTER. When the Title List (Playlist) menu appears, select a title and press \triangleright PLAY.

Hint

When a Playlist title is created, the IN and OUT points will become chapter marks, and each scene will become a chapter.

Note

The picture may pause when the edited scene is played.

Moving a Playlist title (Move Title)

-RWvR

You can change the Playlist title order within the Title List (Playlist).

1 Press TITLE LIST to turn on the Title List (Playlist) menu.

If the Title List (Original) menu appears, press TOOLS and select “Playlist.”

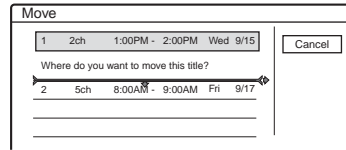
2 Select “Number” in the “Sort” column, and press ENTER.

The titles are sorted in order of title number.

3 Select a title, and press ENTER.

The sub-menu appears.

4 Select “Move Title,” and press ENTER.



5 Select a new location for the title by pressing \uparrow/\downarrow and press ENTER.

The title moves to the new location.

Dividing a Playlist title (Divide Title)

-RWvR

1 Press TITLE LIST to turn on the Title List (Playlist) menu.

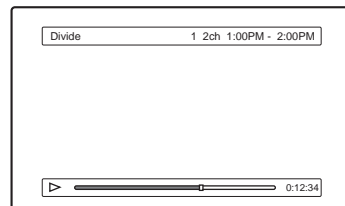
If the Title List (Original) menu appears, press TOOLS and select “Playlist.”

2 Select a title, and press ENTER.

The sub-menu appears.

3 Select “Divide Title,” and press ENTER.

The display for setting the dividing point appears. The title starts to play in the background.



4 Select the dividing point by pressing \lll/\ggg , and press ENTER.

The display asks for confirmation. To change the dividing point, select “Change.”

5 Select “OK,” and press ENTER.

The display for entering the title name appears. To use the same title name as before, select “No.”

6 Select “Yes,” and press ENTER to enter a new name.

Follow the explanations on page 39. After you enter a new name, the title is divided in two.

Combining multiple Playlist titles (Combine Titles)

-RWVR

- 1 Press TITLE LIST to turn on the Title List (Playlist) menu.**
If the Title List (Original) menu appears, press TOOLS and select "Playlist."
- 2 Press TOOLS to select "Combine Titles," and press ENTER.**
The display for selecting titles appears.
- 3 Select a title, and press ENTER.**
A number indicating the order in which you selected the title appears. To cancel the selection, press ENTER again.

Combine

Select the titles to combine.

1	2ch	1:00PM - 2:00PM	9/15
2	5ch	8:00PM - 9:00PM	9/17
3	2ch	1:00PM - 2:00PM	9/28
4	2ch	1:00PM - 2:00PM	10/5

Buttons: OK, Cancel, Reset All

- 4 Repeat step 3 to select all of the titles you want to combine.**
To cancel all of the selections, select "Reset All."
- 5 Select "OK," and press ENTER.**
The list of titles to be combined appears. To change the selection, select "Change" and go to step 3.

Combine

Combine the titles in the following order.

1	2ch	1:00PM - 2:00PM	9/15
2	2ch	1:00PM - 2:00PM	9/28
3	2ch	1:00PM - 2:00PM	10/5

Buttons: OK, Change, Cancel

- 6 Select "OK," and press ENTER.**
The display for selecting a title name from among the selected titles appears. To enter a new name, select "Enter Text," and follow the explanations on page 39.
- 7 Select a name, and press ENTER.**
The titles are combined.

Settings and Adjustments

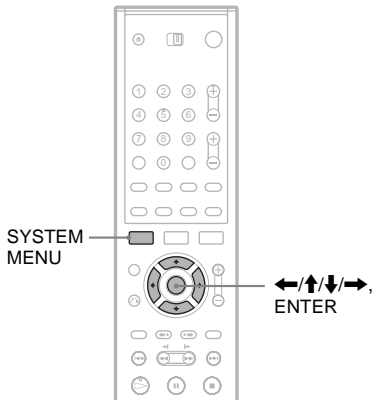
Using the Setup Displays

By using the Setup Displays, you can make various adjustments to items such as picture and sound, as well as select a language for the subtitles.

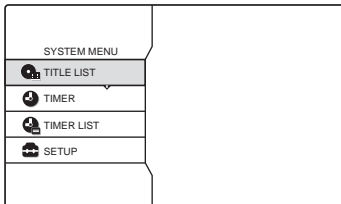
The Setup Displays are used in the following way.

Note

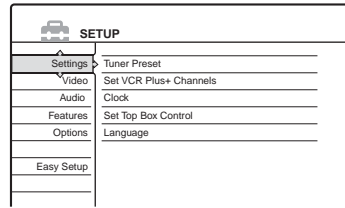
Playback settings stored in the disc take priority over the Setup Display settings, and not all of the functions described may work.



- 1 Press **SYSTEM MENU** while the recorder is in stop mode.
The System Menu appears.

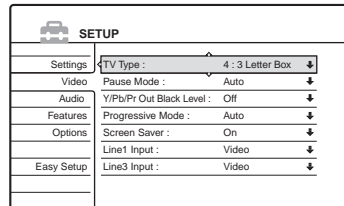


- 2 Select **"SETUP,"** and press **ENTER**.
The Setup Display appears.



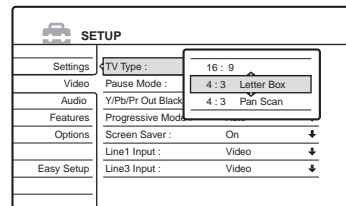
- 3 Select **"Settings," "Video," "Audio," "Features," "Options,"** or **"Easy Setup,"** and press **ENTER**.

The selected Setup Display appears.
Example: "Video" setup



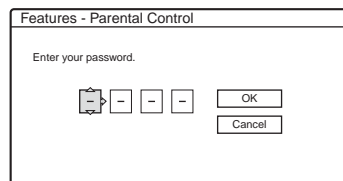
- 4 Select the item you want to set up, and press **ENTER**.

Available options for the item appear.
Example: "TV Type"



Some items display a dialog box that provides further detailed settings.

Example: The following dialog box appears when "Parental Control" in Features Setup is selected.

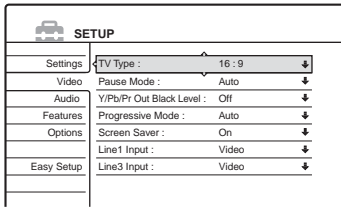


In this case, see "Parental Control" in "Recording and Parental Control Settings (Features)" (page 78).

5 Select an option, and press ENTER.

The currently selected option is displayed next to the setup item.

Example: when "16:9" is set.



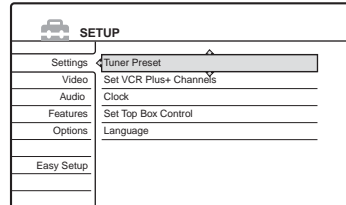
To turn off the display

Press SYSTEM MENU repeatedly.

Antenna Reception and Language Settings (Settings)

The Settings Setup helps you to make tuner, clock, and language settings for the recorder.

Select "Settings" in the Setup Display. To use the display, see "Using the Setup Displays" (page 69).



Tuner Preset

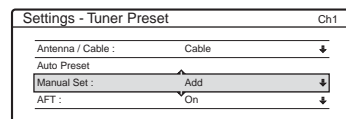
Notes

- You cannot preset channels for the connected cable box or satellite receiver.
- You cannot select "Tuner Preset" when you set "Set Top Box Control" to "On."

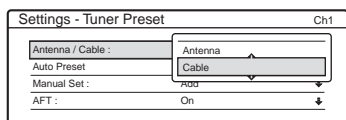
Auto Preset

Automatically presets the receivable channels. The recorder can receive VHF channels 2 to 13, UHF channels 14 to 69, and unscrambled CATV channels 1 to 125. First, we recommend that you preset the receivable channels in your area using automatic presetting methods.

- 1 Follow steps 1 to 3 of "Using the Setup Displays" (page 69) to select "Settings" in the Setup Display.
- 2 Select "Tuner Preset," and press ENTER.

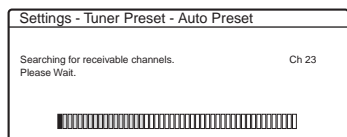


- 3 Select “Antenna/Cable,” and press ENTER.



“Cable”: Presets cable TV channels.
 “Antenna”: Presets VHF and UHF channels.

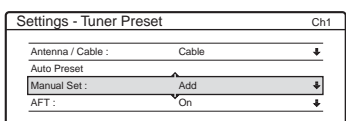
- 4 Select an option, and press ENTER.
 5 Select “Auto Preset,” and press ENTER.
 All receivable channels are preset in numerical sequence.



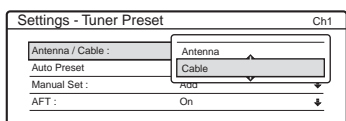
Manual Set

Presets or disables channels manually.
 If some channels could not be set using the Auto Preset or Easy Setup function, you can set them manually.

- 1 Follow steps 1 to 3 of “Using the Setup Displays” (page 69) to select “Settings” in the Setup Display.
 2 Select “Tuner Preset,” and press ENTER.



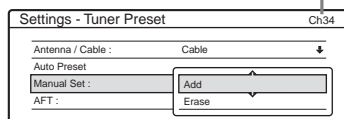
- 3 Select “Antenna/Cable,” and press ENTER.



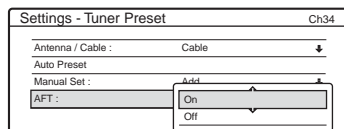
“Cable”: Presets cable TV channels.
 “Antenna”: Presets VHF and UHF channels.

- 4 Select the channel you want to preset using the number buttons and the SET button.
 To disable a channel, select the channel using CH +/-.

Channel to be preset/disabled



- 5 Select “Manual Set,” and press ENTER.
 “Add”: Presets the channel.
 “Erase”: Disables the channel.
 6 Select “Add” to preset the channel, and press ENTER.
 7 Select “AFT” and press ENTER.



“On”: Turns on the Auto Fine Tuning function. Normally, select this.
 “Off”: Allows you to adjust the picture manually.

- 8 Select “On” to turn on AFT, and press ENTER.
 To preset or disable another channel, repeat from step 3.
 • If the Auto Fine Tuning function does not work effectively, select “Off” in step 7 and press ENTER. When the fine tuning bar appears, press ◀/▶ to obtain a clearer picture, and press ENTER.



- 9 To preset or disable another channel, repeat steps 4 to 8.

Set VCR Plus+ Channels

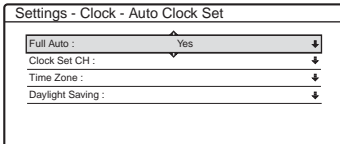
Sets up the guide channel number assigned to each channel.
 You need to set this correctly to make timer recordings with the VCR Plus+ function. For details, see page 27.

Clock

Auto (Auto Clock Set)

Turns on the Auto Clock Set function when a channel in your local area broadcasts a time signal.

- 1 Follow steps 1 to 3 of "Using the Setup Displays" (page 69) to select "Settings" in the Setup Display.
- 2 Select "Clock," and press ENTER.
- 3 Select "Auto," and press ENTER.

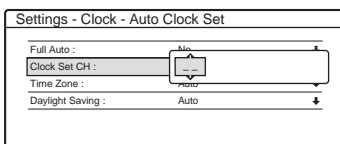


- 4 Select "Full Auto," and press ENTER. "Yes": Automatically sets your time zone and Daylight Saving Time (if applicable). "No": Allows you to adjust your time zone and Daylight Saving Time manually, without turning off the Auto Clock Set function.
- 5 Select "Yes," and press ENTER. The recorder automatically sets the clock by searching for a channel that carries a time signal and sets your time zone and Daylight Saving Time (if applicable).
 - If the clock does not activate, your clock setting is incorrect. After repeating steps 1 to 4 above, select "No" in step 5 and press ENTER. Then select "Clock Set CH," "Time Zone," or "Daylight Saving" and press ENTER. Adjust these settings by pressing \uparrow/\downarrow and ENTER.

◆ Clock Set CH

Select a channel that carries a time signal using the number buttons.

Use this option if you know of a channel that carries a time signal. Most PBS member stations broadcast a time signal. For the fastest response select your local PBS station. Leave the setting at "--" to have the recorder automatically search for a channel that carries a time signal. To return to "--," enter "0."



◆ Time Zone

Select the time zone for your area, or select "Auto" to have the recorder automatically set your time zone.

The options are:

Auto \leftrightarrow Atlantic \leftrightarrow Eastern \leftrightarrow Central
 \leftrightarrow Mountain \leftrightarrow Pacific \leftrightarrow Alaska \leftrightarrow
Hawaii \leftrightarrow Auto

◆ Daylight Saving

Select "On" or "Off" (standard time), or select "Auto" to have the recorder automatically set the daylight saving time.

💡 Hint

If you set "Full Auto" to "Yes," the Auto Clock Set function is activated whenever the recorder is turned off.

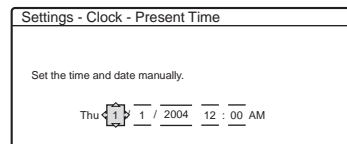
Note

If "Set Top Box Control" is set to "On," the channel on the cable box or satellite receiver changes when the recorder searches for a channel that carries a time signal and sets your time zone.

Manual (Manual Clock Set)

If the Auto Clock Set function did not set the clock correctly for your local area, set the clock manually.

- 1 Follow steps 1 to 3 of "Using the Setup Displays" (page 69) to select "Settings" in the Setup Display.
- 2 Select "Clock," and press ENTER.
- 3 Select "Manual," and press ENTER.



- 4 Press \uparrow/\downarrow to set the month, and press \rightarrow . Set the day, year, hour, and minutes in sequence. Press \leftarrow/\rightarrow to select the item to be set, then press \uparrow/\downarrow to set the numbers. The day of the week is set automatically.
- 5 Press ENTER to start the clock.

💡 Hint

To change the numbers in step 4, press \leftarrow to return to the item to be changed, and select the numbers by pressing \uparrow/\downarrow .

Set Top Box Control

You can control your cable box/satellite receiver using the supplied set top box controller. See “Step 7: Easy Setup” for details.

Set Top Box Control

<u>On</u>	Turns on the cable box/satellite receiver control function. See “Using the cable box/satellite receiver control function” (page 12).
<u>Off</u>	Turns off the cable box/satellite receiver control function. Select this if you do not want to use the supplied set top box controller.

When “Set Top Box Control” is set to “On,” you can make the following settings. Note that when you change “Set Top Box Control” to “On” or “Off,” all of the timer recording settings will be canceled.

◆Brand Code

See “Cable Box/Satellite Receiver Brand Code” (page 96) for the brand code for your cable box or satellite receiver, and enter the code using the number buttons and ENTER.

◆Connection

Selects the connection you used for your cable box or satellite receiver. When the cable box or satellite receiver is connected to the recorder’s LINE IN jacks, select the connection from “Line1,” “Line2,” or “Line3.” When the cable box or satellite receiver is connected to the recorder’s VHF/UHF IN jack, select the output channel, “Ch2,” “Ch3,” or “Ch4.”

◆Ch. digit lock

Allows you to select whether to fix the digits for your cable box or satellite receiver.

<u>Off</u>	Select this when your cable box or satellite receiver only accepts a three or more digit channel number. Normally select this.
Lock to two digits	Select this only when your cable box or satellite receiver only accepts a two digit channel number.

◆Mode for SET button

Select “Mode 1” or “Mode 2” if your cable box or satellite receiver requires pressing an ENTER button or a SET button etc., after entering the channel number. If “Mode 1” does not work, try “Mode 2.” If your cable box or satellite receiver does not respond to either setting, contact the manufacturer of the cable box or satellite receiver.

<u>Off</u>	No code is sent when SET is pressed. Normally select this.
Mode 1	Sends the channel number you entered.
Mode 2	Sends the channel number you entered.

Language

OSD (On-Screen Display)

Switches the display language on the screen.

DVD Menu (DVD VIDEO only)

Switches the language for the DVD menu.

Audio (DVD VIDEO only)

Switches the language of the sound track.

When you select “Original,” the language given priority in the disc is selected.

Subtitle (DVD VIDEO only)

Switches the language of the subtitles recorded on the disc.

When you select “Audio Follow,” the subtitle language changes according to the language you selected for the sound track.

Hint

If you select “Others” in “DVD Menu,” “Subtitle,” or “Audio,” select and enter a language code from “Language Code List” (page 95) using the number buttons.

Note

If you select a language in “DVD Menu,” “Subtitle,” or “Audio” that is not recorded on the DVD VIDEO, one of the recorded languages will be automatically selected.

Video Settings (Video)

Video settings will adjust items related to the image, such as size and color.

Choose the settings according to the type of TV, tuner, or decoder connected to the DVD recorder.

1 Press **SYSTEM MENU** while the recorder is in stop mode.

2 Select **"SETUP,"** and press **ENTER**.

3 Select **"Video,"** and press **ENTER**.

The Video Setup appears with the following options. The default settings are underlined.

SETUP	
Settings	TV Type : <u>4 : 3 Letter Box</u>
Video	Pause Mode : Auto
Audio	Y/Pb/Pr Out Black Level : Off
Features	Progressive Mode : Auto
Options	Screen Saver : On
	Line1 Input : Video
Easy Setup	Line3 Input : Video

TV Type

Selects the aspect ratio of the connected TV (4:3 standard or wide).

16:9	Select this when connecting to a wide-screen TV or TV with a wide mode function.
<u>4:3 Letter Box</u>	Select this when connecting to a 4:3 screen TV. Displays a wide picture with bands on the upper and lower portions of the screen.
4:3 Pan Scan	Select this when connecting to a 4:3 screen TV. Automatically displays a wide picture on the entire screen and cuts off the portions that do not fit.

16:9



4:3 Letter Box



4:3 Pan Scan



Note

Depending on the disc, "4:3 Letter Box" may be selected automatically instead of "4:3 Pan Scan" or vice versa.

Pause Mode (DVDs only)

Selects the picture quality in pause mode.

<u>Auto</u>	The picture, including subjects that move dynamically, is output with no jitter. Normally select this position.
Frame	The picture, including subjects that do not move dynamically, is output in high resolution.

Y/Pb/Pr Out Black Level

Selects the black level (setup level) for the video signals output from the COMPONENT VIDEO OUT jacks (page 17).

This setting is not effective when the PROGRESSIVE indicator lights up on the front panel and the recorder outputs progressive signals.

On	Raises the standard black level. Select this when the picture appears too dark.
<u>Off</u>	Sets the black level of the output signal to the standard level. Normally, select this.

Progressive Mode

DVD software can be divided into two types: film based software and video based software. Video based software is derived from TV, such as dramas and sit-coms, and displays images at 30 frames/60 fields per second. Film based software is derived from film and displays images at 24 frames per second. Some DVD software contains both Video and Film.

In order for these images to appear natural on your screen when output in PROGRESSIVE mode, the progressive video signal needs to be converted to match the type of DVD software that you are watching.

You can fine-tune the progressive 480p video signals that are output when you press PROGRESSIVE (“PROGRESSIVE” lights up). Note that you must connect to a progressive format TV using the COMPONENT VIDEO OUT jacks (page 17).

<u>Auto</u>	Automatically detects the software type (Film-based or Video-based) and selects the appropriate conversion mode. Normally select this position.
Video	Fixes the conversion mode to the mode for Video-based software.

Screen Saver

The screen saver image appears when you do not use the recorder for more than 10 minutes while the power is turned on. The screen saver image helps prevent your display device from becoming damaged (ghosting).

<u>On</u>	Turns on the screen saver function.
Off	Turns off the function.

Line1 Input

Selects a method of inputting video signals for the LINE IN 1 jack on the rear panel of the recorder.

<u>Video</u>	Inputs video signals.
S Video	Inputs S video signals.

Line3 Input

Selects the method of inputting video signals for the LINE IN 3 jack on the rear panel of the recorder. The pictures will not be clear if this setting does not match the type of video input signal.

<u>Video</u>	Inputs video signals.
S Video	Inputs S-video signals.

Audio Settings (Audio)

The Audio Setup allows you to adjust the sound according to the playback and connection conditions.

- 1 Press **SYSTEM MENU** while the recorder is in stop mode.
- 2 Select **"SETUP,"** and press **ENTER**.
- 3 Select **"Audio,"** and press **ENTER**.
The Audio Setup appears with the following options. The default settings are underlined.

SETUP	
Settings	<u>Auto Stereo</u> : On ↓
Video	Tuner Audio : Main ↓
Audio	Audio ATT : Off ↓
Features	Audio DRC : Standard ↓
Options	Downmix : Dolby Surround ↓
	Digital Out : On ↓
Easy Setup	Dolby Digital : D-PCM ↓
	DTS : Off ↓

Auto Stereo

This function is effective only when "Tuner Audio" is set to "Main."

<u>On</u>	Receives stereo programs. Normally select this.
Off	Select this to reduce noise. The sound changes to monaural.

Tuner Audio

Selects the sound to be recorded.

<u>Main</u>	Records only the main sound.
SAP	Records only the SAP (Second Audio Program) sound.

Note

If no SAP sound is received, the main sound is recorded regardless of the setting.

Audio ATT (attenuation)

If the playback sound is distorted, set this item to "On." The recorder reduces the audio output level. This function affects the output of the following jacks:

- LINE OUT (AUDIO L/R) 1/2 jacks

On	Select this when the playback sound from the speakers is distorted.
<u>Off</u>	Normally select this position.

Audio DRC (Dynamic Range Control) (DVDs only)

Makes the sound clear when the volume is turned down when playing a DVD that conforms to "Audio DRC." This affects the output from the following jacks:

- LINE OUT (AUDIO L/R) 1/2 jacks
- DIGITAL OUT (OPTICAL or COAXIAL) jack only when "Dolby Digital" is set to "D-PCM" (page 77).

<u>Standard</u>	Normally select this position.
TV Mode	Makes low sounds clear even if you turn the volume down.
Wide Range	Gives you the feeling of being at a live performance.

Downmix (DVDs only)

Switches the method for mixing down to two channels when you play a DVD which has rear sound elements (channels) or is recorded in Dolby Digital format. For details on the rear signal components, see "Checking the Play Information and Playing Time" (page 37). This function affects the output of the following jacks:

- LINE OUT (AUDIO L/R) 1/2 jacks
- DIGITAL OUT (OPTICAL or COAXIAL) jack when "Dolby Digital" is set to "D-PCM" (page 77).

<u>Dolby Surround</u>	Normally select this position. Multi-channel audio signals are output to two channels for enjoying surround sounds.
Normal	Multi-channel audio signals are downmixed to two channels for use with your stereo.

Digital Out

Selects if audio signals are output via the DIGITAL OUT (OPTICAL or COAXIAL) jacks.

<u>On</u>	Normally select this position. When you select “On,” see “To set the digital output signal” for further settings.
Off	The influence of the digital circuit upon the analog circuit is minimal.

◆To set the digital output signal

The following setup items switch the method of outputting audio signals when you connect a component such as an amplifier (receiver) with a digital input jack.

For connection details, see “Connecting the Audio Cords” (page 18).

Select “Dolby Digital” and “DTS” after setting “Digital Out” to “On.”

SETUP	
Settings	Auto Stereo : On ↓
Video	Tuner Audio : Main ↓
Audio	Audio ATT : Off ↓
Features	Audio DRC : Standard ↓
Options	Downmix : Dolby Surround ↓
	<u>Digital Out</u> : On ↓
Easy Setup	Dolby Digital : D-PCM ↓
	DTS : Off ↓

If you connect a component that does not accept the selected audio signal, a loud noise (or no sound) will come out from the speakers, and may affect your ears or cause speaker damage.

- **Dolby Digital (DVDs only)**
Selects the type of Dolby Digital signal.

<u>D-PCM</u>	Select this when the recorder is connected to an audio component lacking a built-in Dolby Digital decoder. You can select whether the signals conform to Dolby Surround (Pro Logic) or not by making adjustments to the “Downmix” item in Audio Setup (page 76).
Dolby Digital	Select this when the recorder is connected to an audio component with a built-in Dolby Digital decoder.

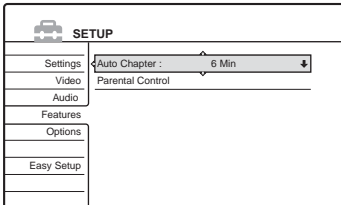
- **DTS (DVD VIDEO only)**
Selects whether or not to output DTS signals.

On	Select this when the recorder is connected to an audio component with a built-in DTS decoder.
<u>Off</u>	Select this when the recorder is connected to an audio component without a built-in DTS decoder.

Recording and Parental Control Settings (Features)

The Features Setup allows you to adjust recording and parental control settings.

- 1 Press **SYSTEM MENU** while the recorder is in stop mode.
- 2 Select **"SETUP,"** and press **ENTER**.
- 3 Select **"Features,"** and press **ENTER**.
The Features Setup appears with the following options. The default settings are underlined.



Auto Chapter

Automatically divides a recording (a title) into chapters by inserting chapter markings at a specified interval. The markings are inserted while the recording is being made.

Off	No chapter mark is inserted.
<u>6Min</u>	Inserts chapter marks at approximately 6 minute intervals.
15Min	Inserts chapter marks at approximately 15 minute intervals.

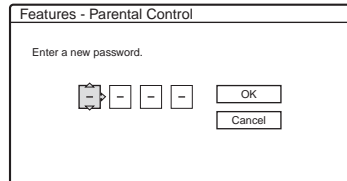
Note

Depending upon the size of the recording being made, the actual interval may vary from the interval selected in "Auto Chapter." The selected interval should only be used as an approximation to create chapters.

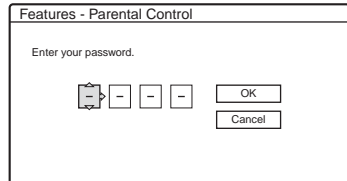
Parental Control (DVD VIDEO only)

Playback of some DVD VIDEOS can be limited according to a predetermined level, such as the age of the users. Scenes may be blocked or replaced with different scenes.

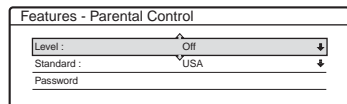
- 1 After step 3 above, select **"Parental Control,"** and press **ENTER**.
 - If you have not entered a password, the display for registering a new password appears.



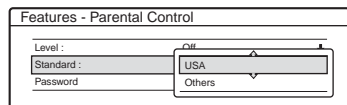
- When you have already registered a password, the display for entering the password appears.



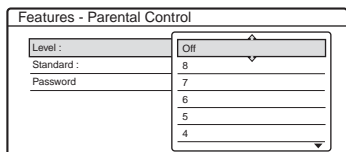
- 2 Enter your four-digit password using the number buttons, then select **"OK"** and press **ENTER**.



- 3 Select **"Standard,"** and press **➡** or **ENTER**. The selection items for "Standard" are displayed.



- 4 Select a geographic area as the playback limitation level, and press ENTER.
The area is selected.
When you select “Others,” press the number buttons to select and enter an area code in the table (see below). Then select “OK” and press ENTER.
- 5 Select “Level,” and press ENTER.
The selection items for “Level” are displayed.



The lower the value, the stricter the limitation.

- 6 Select the level, and press ENTER.
The Parental Control setting is complete.
- To cancel the Parental Control setting for the disc, set “Level” to “Off” in step 6.
 - To change the password, select “Password” in step 3, and press ENTER. When the display for registering a password appears, enter a new four-digit password using the number buttons, then select “OK” and press ENTER.

Notes

- If you forget your password, you will have to reset it by selecting “Parental Control” under “Factory Setup” in Options Setup (page 80).
- When you play discs which do not have the Parental Control function, playback cannot be limited on this recorder.
- Depending on the disc, you may be asked to change the Parental Control level while playing the disc. In this case, enter your password, then change the level.

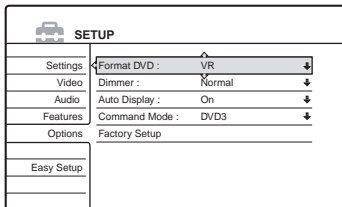
◆Area code

Standard	Code number
Argentina	2044
Australia	2047
Austria	2046
Belgium	2057
Brazil	2070
Canada	2079
Chile	2090
China	2092
Denmark	2115
Finland	2165
France	2174
Germany	2109
India	2248
Indonesia	2238
Italy	2254
Japan	2276
Korea	2304
Malaysia	2363
Mexico	2362
Netherlands	2376
New Zealand	2390
Norway	2379
Pakistan	2427
Philippines	2424
Portugal	2436
Russia	2489
Singapore	2501
Spain	2149
Sweden	2499
Switzerland	2086
Thailand	2528
United Kingdom	2184

Disc and Remote Control Settings/Factory Settings (Options)

The Options Setup allows you to set up other operational settings.

- 1** Press **SYSTEM MENU** while the recorder is in stop mode.
- 2** Select **"SETUP,"** and press **ENTER**.
- 3** Select **"Options,"** and press **ENTER**.
The Options Setup appears with the following options. The default settings are underlined.



Format DVD (DVD-RW only)

The recorder automatically starts formatting in VR mode or Video mode, whichever is selected below, when a new, unformatted DVD-RW is inserted.

<u>VR</u>	Automatically formats the disc in VR mode.
Video	Automatically formats the disc in Video mode.

Dimmer

Adjusts the lighting of the front panel display.

<u>Normal</u>	Bright lighting.
Power Save	Low lighting. Turns off the lighting when the power is off.

Auto Display

<u>On</u>	Automatically displays information on the screen when the recorder is turned on, etc.
Off	Displays information only when DISPLAY is pressed.

Command Mode

Changes the Command Mode of the recorder if other DVD equipment is assigned the same Command Mode. Be sure to match the Command Mode switch on the remote to the setting made here. For details, see "If you have a Sony DVD player or more than one Sony DVD recorder" on page 22.

DVD1	Select this if the default Command Mode conflicts with other DVD equipment.
DVD2	Select this if the default Command Mode conflicts with other DVD equipment.
<u>DVD3</u>	The default Command Mode of the recorder.

Factory Setup

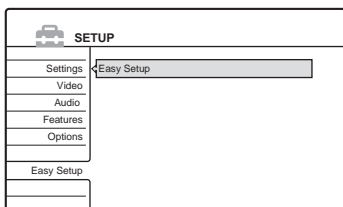
Allows you to select the setup settings by group, and return them to their default settings. Note that all of your previous settings will be lost.

- 1** After step 3 above, select **"Factory Setup,"** and press **➡** or **ENTER**.
The display for selecting a group of settings appears.
- 2** Select the group of settings you want to return to default from **"Settings,"** **"Video,"** **"Audio,"** **"Features,"** **"Options,"** **"Parental Control,"** and **"All,"** and press **➡** or **ENTER**.
- 3** Select **"Start,"** and press **ENTER**.
The selected settings return to their default settings.
- 4** Press **ENTER** when **"Finish"** appears.

Easy Setup (Resetting the Recorder)

Select this to run the Easy Setup program.

- 1 Press SYSTEM MENU while the recorder is in stop mode.
- 2 Select "SETUP," and press ENTER.
- 3 Select "Easy Setup," and press ENTER.



- 4 Press ENTER.
- 5 Select "Start," and press ENTER.
- 6 Follow the instructions for Easy Setup (page 23) from step 5.

Troubleshooting

If you experience any of the following difficulties while using the recorder, use this troubleshooting guide to help remedy the problem before requesting repairs. Should any problem persist, consult your nearest Sony dealer.

Power

The power does not turn on.

- ➔ Check that the AC power cord is connected securely.

Picture

There is no picture.

- ➔ Re-connect all connecting cords securely.
- ➔ The connecting cords are damaged.
- ➔ Check the connection to your TV (page 12).
- ➔ Switch the input selector on your TV (such as to "VCR") so that the signal from the recorder appears on the TV screen.

Picture noise appears.

- ➔ If the picture output signal from your recorder passes through your VCR to get to your TV, or if you are connected to a combination TV/VIDEO player, the copy-protection signal applied to some DVD programs could affect picture quality. If you still experience this problem even when you connect your recorder directly to your TV, try connecting your recorder to your TV's S VIDEO input.
- ➔ You have set the recorder to progressive format (the PROGRESSIVE indicator lights up) even though your TV cannot accept the progressive signal. In this case, press PROGRESSIVE until the progressive indicator turns off.
- ➔ Even if your TV is compatible with progressive format (480p) signals, the image may be affected when you set the recorder to progressive format. In this case, press PROGRESSIVE so that the PROGRESSIVE indicator turns off and the recorder is set to normal (interlace) format.

TV program reception does not fill the screen.

- ➔ Set the channel manually in "Tuner Preset" in Settings Setup (page 70).
- ➔ Select the correct source using the INPUT SELECT button, or select a channel of any TV program using the CH +/- buttons.

TV program pictures are distorted.

- ➔ Reorient the TV antenna.
- ➔ Adjust the picture (see the TV's instruction manual).
- ➔ Place the recorder and TV farther apart.
- ➔ Place the TV and any bunched antenna cables farther apart.
- ➔ The RF cable is connected to the VHF/UHF OUT jack on the recorder. Connect the cable to the VHF/UHF IN jack.

The channel on the cable box/satellite receiver has been changed.

- ➔ The set top box controller is connected and "Set Top Box Control" is set to "On." Check the "Set Top Box Control" settings in Settings Setup (page 73).

TV channels cannot be changed.

- ➔ The channel is disabled (page 71).
- ➔ A timer recording started, which changed the channels.

The picture from equipment connected to the recorder's input jack does not appear on the screen.

- ➔ If the equipment is connected to the LINE IN 1 jack, select "L1" in the front panel display by pressing CH +/- or INPUT SELECT.
If the equipment is connected to the LINE IN 2 jacks, select "L2" in the front panel display by pressing CH +/- or INPUT SELECT.
If the equipment is connected to the LINE IN 3 jack, select "L3" in the front panel display by pressing CH +/- or INPUT SELECT.
- ➔ When an S video cable is connected to the recorder's LINE IN 1 or LINE IN 3 jack, set "Line1 Input" or "Line3 Input" in Video Setup to "S Video" (page 75).

The playback picture or TV program from the equipment connected through the recorder is distorted.

- ➔ If the playback picture output from a DVD player, VCR, or tuner goes through your recorder before reaching your TV, the copy-protection signal applied to some programs could affect picture quality. Disconnect the playback equipment in question and connect it directly to your TV.

The picture does not fill the screen.

- ➔ Set “TV Type” in Video Setup in accordance with the aspect ratio of your TV (page 74).

The picture does not fill the screen, even though the aspect ratio is set in “TV Type” in Video Setup.

- ➔ The aspect ratio of the disc is fixed on your DVD.

Sound

There is no sound.

- ➔ Re-connect all connections securely.
- ➔ The connecting cord is damaged.
- ➔ The input source setting on the amplifier or the connection to the amplifier is incorrect.
- ➔ The recorder is in reverse play, fast-forward, slow motion, or pause mode.
- ➔ If the audio signal does not come through the DIGITAL OUT (OPTICAL or COAXIAL) jacks, check the Audio Setup settings (page 76).

Sound distortion occurs.

- ➔ Set “Audio ATT” in Audio Setup to “On” (page 76).

Sound is noisy.

- ➔ When playing a CD with DTS sound tracks, noise will come from the LINE OUT (AUDIO L/R) 1/2 jacks (page 55).

The sound volume is low

- ➔ The sound volume is low on some DVDs. The sound volume may improve if you set “Audio DRC” in Audio Setup to “TV Mode” (page 76).
- ➔ Set “Audio ATT” in Audio Setup to “Off” (page 76).

An alternate audio track cannot be recorded or played.

- ➔ Second Audio Program (SAP) is not available for all programs. The program you are recording does not have a second audio program.
- ➔ You have set “Tuner Audio” in Audio Settings to “Main” (page 76). Select “SAP” to record alternate audio programs.
- ➔ When recording from connected equipment, set “Line Audio Input” in TOOLS menu to “Main/Sub” (page 49).
- ➔ If you have connected an AV amplifier to the DIGITAL OUT (OPTICAL or COAXIAL) jack and want to change the audio track for a DVD-RW (VR mode) during playback, set “Dolby Digital” in Audio Setup to “D-PCM” (page 77).

Playback

The disc does not play.

- ➔ The disc is upside down. Insert the disc with the labeled side facing up.
- ➔ The disc is not correctly inserted.
- ➔ Moisture has condensed inside the recorder. Remove the disc and leave the recorder turned on for about half an hour until the moisture evaporates.
- ➔ If the disc was recorded on another recorder, the recorder cannot play the disc if it was not finalized (page 36).

The disc does not start playback from the beginning.

- ➔ Resume play was activated (page 51).
- ➔ You have inserted a disc whose Title menu or DVD menu automatically appears on the TV screen when it is first inserted. Use the menu to start playback.

The recorder starts playing the disc automatically.

- ➔ The DVD VIDEO features an auto playback function.

Playback stops automatically.

- ➔ If the disc has an auto pause signal, the recorder stops playback at the auto pause signal.

Some functions such as Stop, Search, or Slow-motion Play cannot be performed.

- ➔ Depending on the disc, you may not be able to do some of the operations above. See the instruction manual supplied with the disc.

The language for the sound track cannot be changed.

- ➔ Multilingual tracks are not recorded on the disc being played.
- ➔ The DVD VIDEO prohibits the changing of the language for the sound track.
- ➔ Try changing the language using the DVD VIDEO's menu.

The subtitle language cannot be changed or turned off.

- ➔ Multilingual subtitles are not recorded on the DVD VIDEO.
- ➔ The DVD VIDEO prohibits changing of the subtitles.
- ➔ Try changing the subtitle using the DVD VIDEO's menu.
- ➔ The subtitles cannot be changed for the titles recorded on this recorder.

The angles cannot be changed.

- ➔ Multi-angles are not recorded on the DVD VIDEO being played.
- ➔ You are trying to change the angles when the "⏏" does not appear on the TV screen (page 53).
- ➔ The DVD VIDEO prohibits changing angles.
- ➔ Try changing the angle using the DVD VIDEO's menu.
- ➔ The angles cannot be changed for the titles recorded on this recorder.

The MP3 audio track does not play.

- ➔ The MP3 audio track is not recorded in a format that the recorder can play (page 59).

Recording/Timer recording/Editing

The channel cannot be changed from the channel you are recording.

- ➔ Set the TV's input source to "TV."

Recording does not start immediately after you press ● REC.

- ➔ Operate the recorder only after "LOAD", "FORMAT," or "INFOWRITE" disappears from the front panel display.

Nothing was recorded even though you set the timer setting correctly.

- ➔ There was a power failure during recording.
- ➔ The recorder's internal clock stopped due to a power failure that lasted for more than 1 hour. Reset the clock (page 72).
- ➔ The channel was disabled after the timer recording was set. (See "Manual Set" on page 71.)
- ➔ Disconnect the AC power cord from the AC outlet, and connect it again.
- ➔ The program contains copy protection signals that restrict copying.
- ➔ The timer setting overlapped another setting that was set later or has priority (page 46).
- ➔ There is no DVD inside the recorder.
- ➔ There is not enough disc space for the recording.
- ➔ The set top box was turned off.
- ➔ The set top box controller was incorrectly connected (page 13).
- ➔ The settings in "Set Top Box Control" in Settings Setup have been changed (page 73).

Recording does not stop immediately after you press ■ REC STOP.

- ➔ It will take a few seconds for the recorder to input disc data before recording can stop.

Recording does not stop after you press ■ STOP.

- ➔ Open the remote's cover and press ■ REC STOP.

Timer recording is not complete or did not start from the beginning.

- ➔ There was a power failure during recording. If the power recovers when there is a timer recording, the recorder resumes recording. Should the power failure continue for more than 1 hour, reset the clock (page 72).
- ➔ The timer setting overlapped another setting that was set later or has priority (page 46).
- ➔ Disc space was not enough.

Contents previously recorded were erased.

- ➔ Data that has been recorded on a DVD with a PC will be erased from the disc when the disc is inserted.

Display

The clock has stopped.

- ➔ Set the clock again (page 72).
- ➔ The clock stopped due to a power failure that lasted for more than 1 hour. Reset the clock (page 72).

The TIMER REC indicator is flashing.

- ➔ The disc does not have enough space.
- ➔ Insert a recordable disc inside the recorder.

The recording mode indication is incorrect.

- ➔ When the recording or dubbing is less than three minutes, the recording mode indication may be displayed incorrectly. The actual recording itself is correctly made in the selected recording mode.

The clock does not appear in the front panel display.

- ➔ “Dimmer” in Options Setup is set to “Power Save” (page 80).

Remote control

The remote does not function.

- ➔ Batteries are weak.
- ➔ The remote is too far from the recorder.
- ➔ The remote’s manufacturer code returned to the default setting when you replaced the batteries. Reset the code (page 20).
- ➔ Turn on the recorder.
- ➔ The remote is not pointed at the remote sensor on the recorder.
- ➔ Different command modes are set for the recorder and remote. Set the same command mode (page 22).
- ➔ Set the TV/DVD switch to DVD (page 21).

Other Sony equipment responds to the remote.

- ➔ The same command mode is set for both the equipment and recorder. Set a different command mode for the recorder (page 22).

Others

The recorder does not operate properly.

- ➔ Restart the recorder. Press down **I/⏻** on the recorder for more than ten seconds until “WELCOME” appears in the front panel display.
- ➔ When static electricity, etc., causes the recorder to operate abnormally, turn off the recorder and wait until the clock appears in the front panel display. Then, unplug the recorder and after leaving it off for a while, plug it in again.

Five numbers or letters are displayed on the front panel display.

- ➔ The self-diagnosis function was activated (see the table on page 86).

The disc tray does not open after you press **△** OPEN/CLOSE.

- ➔ It may take a few seconds for the disc tray to open after you have recorded or edited a disc. This is because the recorder is adding disc data to the disc.

The disc tray does not open and “TRAY LOCKED” appears on the front panel display.

- ➔ Contact your Sony dealer or local authorized Sony service facility.

“RECOVERY” appears in the front panel display.

- ➔ The recorder’s recovery function was activated when the recorder was turned on because the power was turned off or failed during recording. Leave the recorder on until “RECOVERY” disappears from the front panel display.

“FAN ERROR” appears in the front panel display.

- ➔ Check that the vent on the rear of the recorder is not blocked. Then, turn off the recorder, wait until the clock appears in the front panel display, and disconnect the AC power cord. Leave the recorder off for a while, then re-connect the power cord, and press **I/⏻** on the recorder.

The disc tray does not open and you cannot remove the disc after you press **△ OPEN/CLOSE.**

- ➔ Turn off the recorder, Once the clock appears in the front panel display, disconnect the AC power cord. Connect it again while pressing down **△** on the recorder, and release the button when the disc tray opens. Then, keep **I/⏻** on the recorder pressed for about ten seconds until “WELCOME” appears in the front panel display.

“LOCKED” appears in the front panel display.

- ➔ The disc tray is locked. Cancel the Child Lock (page 52).

Self-diagnosis Function (When letters/numbers appear in the display)

When the self-diagnosis function is activated to prevent the recorder from malfunctioning, a five-character service number (e.g., C 13 50) with a combination of a letter and four numbers appears on the front panel display. In this case, check the following table.

First three characters of the service number	Cause and/or corrective action
C 13	The disc is dirty. ➔ Clean the disc with a soft cloth.
C 31	The disc is not inserted correctly. ➔ Re-insert the disc correctly.
E XX (xx is a number)	To prevent a malfunction, the recorder has performed the self-diagnosis function. ➔ Contact your nearest Sony dealer or local authorized Sony service facility and give the five-character service number. Example: E 61 10

Notes About This Recorder

On operation

- If the recorder is brought directly from a cold to a warm location, or is placed in a very damp room, moisture may condense on the lenses inside the recorder. Should this occur, the recorder may not operate properly. In this case, remove the disc and leave the recorder turned on for about half an hour until the moisture evaporates.
- When you move the recorder, take out any discs. If you don't, the disc may be damaged.

On adjusting volume

- Do not turn up the volume while listening to a section with very low level inputs or no audio signals. If you do, the speakers may be damaged when a peak level section is played.

On cleaning

Clean the cabinet, panel, and controls with a soft cloth slightly moistened with a mild detergent solution. Do not use any type of abrasive pad, scouring powder or solvent such as alcohol or benzine.

On cleaning discs

Do not use a commercially available cleaning disc. It may cause a malfunction.

Notes about the discs

- To keep the disc clean, handle the disc by its edge. Do not touch the surface. Dust, fingerprints, or scratches on the disc may cause it to malfunction.



- Do not expose the disc to direct sunlight or heat sources such as hot air ducts, or leave it in a car parked in direct sunlight as the temperature may rise considerably inside the car.

- After playing, store the disc in its case.
- Clean the disc with a cleaning cloth. Wipe the disc from the center out.



- Do not use solvents such as benzine, thinner, commercially available cleaners, or anti-static spray intended for vinyl LPs.
- Do not use the following discs.
 - A disc that has a non-standard shape (e.g., card, heart).
 - A disc with a label or sticker on it.
 - A disc that has cellophane tape or sticker adhesive on it.

Specifications

System

Laser: Semiconductor laser

Channel coverage:

NTSC

VHF: 2 to 13/UHF: 14 to 69/CATV: A-8 to A-1, A to W, W+1 to W+84

Video reception: Frequency synthesizer system

Audio reception: Split carrier system

Antenna: 75-ohm antenna terminal for VHF/UHF

Timer: Clock: Quartz locked/Timer indication: 12-hour cycle (digital)/Power back-up duration: 1 hour

Video recording format: MPEG Video

Audio recording format/applicable bit rate:
Dolby Digital/2 ch, 256 kbps

When you play PCM sound tracks with a 96 kHz sampling frequency, the output signals from the DIGITAL OUT (OPTICAL or COAXIAL) jack are converted to 48 kHz sampling frequency.

Inputs

(Jack name): Jack type/input level/input impedance)

LINE IN 1/2/3

(AUDIO): Phono jack/2 Vrms/more than 22 kilohms

(VIDEO): Phono jack/1.0 Vp-p

(S VIDEO): 4-pin mini DIN/Y:1.0 Vp-p, C: 0.286 Vp-p

Outputs

(Jack name): Jack type/output level/output impedance)

LINE OUT 1/2

(AUDIO): Phono jack/2 Vrms/10 kilohms

(VIDEO): Phono jack/1.0 Vp-p

(S VIDEO): 4-pin mini DIN/Y:1.0 Vp-p, C: 0.286 Vp-p

DIGITAL OUT (OPTICAL):

Optical output jack/-18 dBm (wave length: 660 nm)

DIGITAL OUT (COAXIAL):

Phono jack/0.5 Vp-p/75 ohms

COMPONENT VIDEO OUT (Y, P_B, P_R):

Phono jack/Y: 1.0 Vp-p/P_B, P_R:
interlace*=0.648 Vp-p, progressive or
interlace**=0.7 Vp-p

* "Y/Pb/Pr Out Black Level" is "On"

** "Y/Pb/Pr Out Black Level" is "Off"

SET TOP BOX CONTROL:

Mini jack

General

Power requirements: 120 V AC, 60 Hz

Power consumption: 37 W

Dimensions (approx.): 430 × 85 × 345 mm
(17 × 3³/8 × 13⁵/8 in.) (width/height/depth)
incl. projecting parts

Mass (approx.): 4.8 kg (10.58 lb)

Operating temperature: 5 °C to 35 °C
(41 °F to 95 °F)

Operating humidity: 25 % to 80 %

Supplied accessories:

Audio/video cord (1)

Power cord (1)

Antenna cable (1)

Set top box controller (1)

Remote commander (remote) (1)

Size AA(R6) batteries (2)

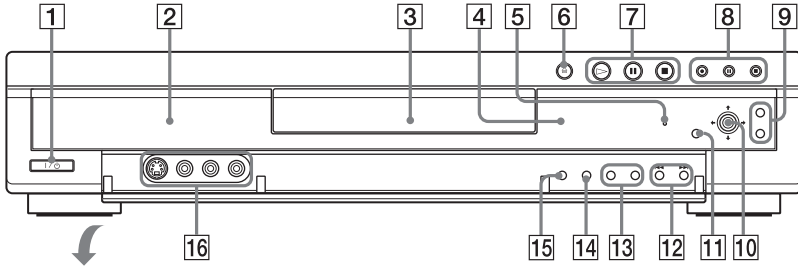
Specifications and design are subject to change without notice.

Guide to Parts and Controls

For more information, see the pages in parentheses.

Front panel

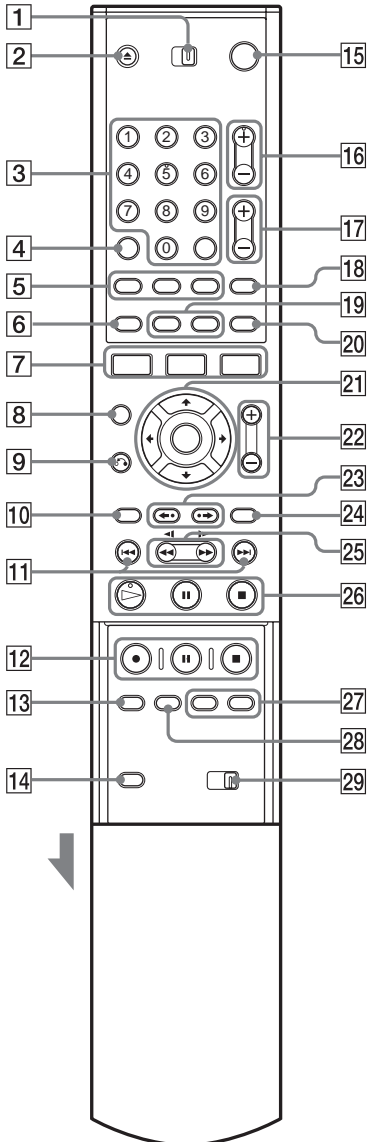
Buttons on the recorder have the same function as the buttons on the remote if they have the same or similar names.



- 1** (on/standby) button (23)
- 2** Front panel display (38, 92)
- 3** Disc tray (41)
- 4** (remote sensor) (20)
- 5** TIMER REC indicator (41)
- 6** (open/close) button (41)
- 7** (play) button (51)
 - ||** (pause) button (51)
 - (stop) button (51)
- 8** REC button (47)
 - ||** REC PAUSE button (47)
 - REC STOP button (47)
- 9** SYSTEM MENU button (31)
TOOLS button (32)
- 10** /ENTER button (31)
- 11** RETURN button (32)
- 12** (previous/next) buttons (53)
- 13** CHANNEL +/- buttons (47)
- 14** INPUT SELECT button (49)
- 15** REC MODE button (40)
- 16** LINE 2 IN (S VIDEO/VIDEO/AUDIO L/R) jacks (30)

Remote

Buttons on the remote have the same function as the buttons on the recorder if they have the same or similar names. Buttons with an orange dot next to them can be used with your TV when the TV/DVD switch is set to TV.



- 1 TV/DVD switch (21)
- 2 ▲ OPEN/CLOSE button (41)
- 3 Number buttons (21, 43)*
SET button (21, 43)
The number 5 button has a tactile dot.
- 4 CLEAR button (43)
- 5 AUDIO button (53)*
SUBTITLE button (53)
ANGLE button (53)
- 6 [TIMER] button (41, 43)
- 7 SYSTEM MENU button (31)
TITLE LIST button (32, 51, 62)
TOOLS button (32)
- 8 CURSOR MODE button (32)
- 9 ↶ RETURN button (32)
- 10 TOP MENU button (51)
- 11 ◀◀ PREV (previous)/▶▶ NEXT buttons (53)
- 12 ● REC button (47)
▢ REC PAUSE button (47)
■ REC STOP button (47)
- 13 REC MODE button (40)
- 14 PROGRESSIVE button (17)
- 15 ⏻/⏻ (on/standby) button (23)
- 16 CH (channel) +/- buttons (21)
The + button has a tactile dot.
- 17 VOL (volume) +/- buttons (21)
- 18 TV/VIDEO button (21)
- 19 DISPLAY button (37, 49)
TIME/TEXT button (38)
- 20 SUR (surround) button (53)
- 21 ◀/↑/↓/▶/ENTER button (31)
- 22 ZOOM +/- buttons (32)
- 23 ◀• INSTANT REPLAY/•▶ INSTANT ADVANCE buttons (53)
- 24 MENU button (51)
- 25 ◀◀◀◀/◀◀/▶▶/▶▶▶▶ (search) buttons (53)

26 ▷ PLAY button* (51)

The button has a tactile dot.

▬ PAUSE button (51)

■ STOP button (51)

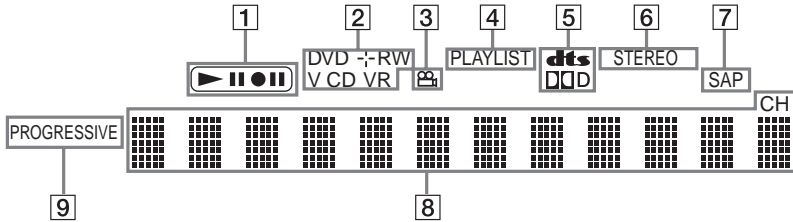
27 CHAPTER MARK/ERASE buttons (65)

28 INPUT SELECT button (49)

29 COMMAND MODE switch (DVD 1,2,3)
(22)

* Use the tactile dot as a reference when operating the recorder.

Front panel display

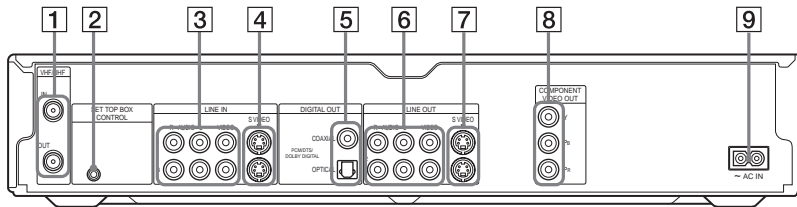


- | | |
|---|---|
| <p>1 Playing/recording status</p> <p>2 Disc type*/recording format</p> <p>3 (angle) indicator (53)</p> <p>4 PLAYLIST indicator (32)</p> <p>5 Audio signal indicators (37)</p> <p>6 STEREO indicator (40)</p> | <p>7 SAP (Second Audio Program) indicator (40)</p> <p>8 Displays the following (38):</p> <ul style="list-style-type: none"> • Playing time/remaining time • Current title/chapter/track/index number • Recording time/recording mode • Clock • Channel <p>* Displays DATA CDs as “CD.”</p> <p>9 PROGRESSIVE indicator</p> |
|---|---|

Hint

You can turn off the front panel display when the recorder is turned off by setting “Dimmer” to “Power Save” in Options Setup (page 80).

Rear panel



- | | |
|--|--|
| <p>1 VHF/UHF IN/OUT jacks (12)</p> <p>2 SET TOP BOX CONTROL jack (13, 14)</p> <p>3 LINE IN (AUDIO L/R/VIDEO) 1/3 jacks (29)</p> <p>4 LINE IN (S VIDEO) 1/3 jacks (29)</p> <p>5 DIGITAL OUT (COAXIAL/OPTICAL) jacks (19)</p> | <p>6 LINE OUT (AUDIO L/R/VIDEO) 1/2 jacks (16, 18, 19)</p> <p>7 LINE OUT (S VIDEO) 1/2 jacks (17)</p> <p>8 COMPONENT VIDEO OUT (Y, PB, PR) jacks (17)</p> <p>9 AC IN terminal (20)</p> |
|--|--|

Glossary

Chapter (page 58)

Sections of a picture or a music feature that are smaller than titles. A title is composed of several chapters. Depending on the disc, no chapters may be recorded.

Copy protection signals (page 40)

Copy restriction set by copyright owners, etc. These signals are included in some software or TV programs and restrict recording on this recorder.

Dolby Digital (page 77)

Digital audio compression technology developed by Dolby Laboratories. This technology conforms to multi-channel surround sound. The rear channel is stereo and there is a discrete subwoofer channel in this format. Dolby Digital provides the same discrete channels of high quality digital audio found in "Dolby Digital" theater surround sound systems. Good channel separation is realized because all of the channel data is recorded discretely, and little deterioration occurs because all channel data processing is digital.

DTS (page 77)

Digital audio compression technology by Digital Theater Systems, Inc. This technology conforms to multi-channel surround sound. The rear channel is stereo and there is a discrete subwoofer channel in this format. DTS provides the same discrete channels of high quality digital audio. Good channel separation is realized because all of the channel data is recorded discretely, and little deterioration occurs because all channel data processing is digital.

DVD+RW (page 8)

A DVD+RW (read "plus RW") is a recordable and rewritable disc. DVD+RWs use a recording format that is comparable to the DVD VIDEO format.

DVD-RW (page 8)

A DVD-RW is a recordable and rewritable disc that is the same size as a DVD VIDEO. The DVD-RW has two different modes: VR mode and Video mode. DVDs created in Video mode have the same format as a DVD VIDEO, while discs created in VR (Video Recording) mode allow the contents to be programmed or edited.

DVD+R (page 8)

A DVD+R (read "plus R") is a recordable disc that is the same size as a DVD VIDEO. Contents can be recorded only once to a DVD+R, and will have the same format as a DVD VIDEO.

DVD-R (page 8)

A DVD-R is a recordable disc that is the same size as a DVD VIDEO. Contents can be recorded only once to a DVD-R, and will have the same format as a DVD VIDEO.

DVD VIDEO (page 8)

A disc that contains up to eight hours of moving pictures on a disc the same diameter as a CD. The data capacity of a single-layer and single-sided DVD is 4.7 GB (Giga Byte), which is 7 times that of a CD. The data capacity of a double-layer and single-sided DVD is 8.5 GB, a single-layer and double-sided DVD is 9.4 GB, and double-layer and double-sided DVD is 17 GB. The picture data uses the MPEG 2 format, which is a worldwide standard of digital compression technology. The picture data is compressed to about 1/40 (average) of its original size. The DVD also uses a variable rate coding technology that changes the data to be allocated according to the status of the picture. Audio information is recorded in a multi-channel format, such as Dolby Digital, allowing you to enjoy a more real audio presence. Furthermore, various advanced functions such as the multi-angle, multilingual, and Parental Control functions are provided on the DVD.

Interlace format (page 17)

Interlace format shows every other line of an image as a single “field” and is the standard method for displaying images on television. The even number field shows the even numbered lines of an image, and the odd numbered field shows the odd numbered lines of an image.

Original (page 61)

Titles actually recorded on a DVD-RW (VR mode). Erasing original titles frees up disc space.

Playlist (page 61)

Playback information created from the actual recordings on a DVD-RW (VR mode). A Playlist leaves the original titles as they are, and contains only the information needed to control playback. A Playlist title takes up very little disc space.

Progressive format (page 17)

Compared to the Interlace format that alternately shows every other line of an image (field) to create one frame, the Progressive format shows the entire image at once as a single frame. This means that while the Interlace format can show 30 frames/60 fields in one second, the Progressive format can show 60 frames in one second. The overall picture quality increases and still images, text, and horizontal lines appear sharper.

Title (page 58)

The longest section of a picture or music feature on a DVD, movie, etc., in video software, or the entire album in audio software.

Track (page 58)

Sections of a music feature on a CD (the length of a song).

Language Code List

For details, see page 73.

The language spellings conform to the ISO 639: 1988 (E/F) standard.

Code Language	Code Language	Code Language	Code Language
1027 Afar	1183 Irish	1347 Maori	1507 Samoan
1028 Abkhazian	1186 Scots Gaelic	1349 Macedonian	1508 Shona
1032 Afrikaans	1194 Galician	1350 Malayalam	1509 Somali
1039 Amharic	1196 Guarani	1352 Mongolian	1511 Albanian
1044 Arabic	1203 Gujarati	1353 Moldavian	1512 Serbian
1045 Assamese	1209 Hausa	1356 Marathi	1513 Siswati
1051 Aymara	1217 Hindi	1357 Malay	1514 Sesotho
1052 Azerbaijani	1226 Croatian	1358 Maltese	1515 Sundanese
1053 Bashkir	1229 Hungarian	1363 Burmese	1516 Swedish
1057 Byelorussian	1233 Armenian	1365 Nauru	1517 Swahili
1059 Bulgarian	1235 Interlingua	1369 Nepali	1521 Tamil
1060 Bihari	1239 Interlingue	1376 Dutch	1525 Telugu
1061 Bislama	1245 Inupiak	1379 Norwegian	1527 Tajik
1066 Bengali;	1248 Indonesian	1393 Occitan	1528 Thai
Bangla	1253 Icelandic	1403 (Afan)Oromo	1529 Tigrinya
1067 Tibetan	1254 Italian	1408 Oriya	1531 Turkmen
1070 Breton	1257 Hebrew	1417 Punjabi	1532 Tagalog
1079 Catalan	1261 Japanese	1428 Polish	1534 Setswana
1093 Corsican	1269 Yiddish	1435 Pashto;	1535 Tonga
1097 Czech	1283 Javanese	Pushto	1538 Turkish
1103 Welsh	1287 Georgian	1436 Portuguese	1539 Tsonga
1105 Danish	1297 Kazakh	1463 Quechua	1540 Tatar
1109 German	1298 Greenlandic	1481 Rhaeto-	1543 Twi
1130 Bhutani	1299 Cambodian	Romance	1557 Ukrainian
1142 Greek	1300 Kannada	1482 Kirundi	1564 Urdu
1144 English	1301 Korean	1483 Romanian	1572 Uzbek
1145 Esperanto	1305 Kashmiri	1489 Russian	1581 Vietnamese
1149 Spanish	1307 Kurdish	1491 Kinyarwanda	1587 Volapük
1150 Estonian	1311 Kirghiz	1495 Sanskrit	1613 Wolof
1151 Basque	1313 Latin	1498 Sindhi	1632 Xhosa
1157 Persian	1326 Lingala	1501 Sangho	1665 Yoruba
1165 Finnish	1327 Laothian	1502 Serbo-	1684 Chinese
1166 Fiji	1332 Lithuanian	Croatian	1697 Zulu
1171 Faroese	1334 Latvian;	1503 Singhalese	
1174 French	Lettish	1505 Slovak	
1181 Frisian	1345 Malagasy	1506 Slovenian	1703 Not specified

Cable Box/Satellite Receiver Brand Code

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

Cable box brand	Code number
3M	0033
ABC	0003, 0011, 0017, 0008, 0014, 0001, 0013, 0206, 0047, 0237, 0033
Accuphase	0003, 0013, 0047, 0001, 0011, 0017, 0014, 0206
Acorn	1102, 0237
Action	0237
Active	0237, 1102
Aim	0015
Allegro	0315, 0153
Amark	0008, 0277, 0144, 0056
American	0060
Americast	0899
Antronix	0207, 0022
Anvision	0211, 0111
Apache	0770
Arbatron	0014, 0011, 0003, 0476
Archer	0153, 0022, 0207, 0039, 0797, 0237, 0260
ASE	1080
Auna	1269
BBT	0267
BCC	0276
Belcor	0056, 0022
Bell & Howell	0014
Bell Atlantic	0641
Bell South	0899
Bestlink	0303
Betavue	0022
British Telecom	0003
BVS	0641

Cable box brand	Code number
Cable Healthcare	0769, 0058
Cable Star	0056
Cabletenna	0022, 0039
Cableview	0022
Century	0153, 0618, 0008, 0315
Citation	0017
Citizen	0153, 0315, 0078, 0242
Clearmaster	0883
ClearMax	0883, 1247
Colour Voice	0031, 0025
Comband	0233, 0232
Comtec	0274
Comtronics	0060, 0040
Comtronics Eagle	0040, 0060
Contec	0019
Coolmax	0883
Curtis Mathes	0015, 0242
Dae Ryung Eagle	0008
Daeryung	0008, 0877, 0477, 0277, 1877
Diamond	0035
Digeo	1476
Digi	0637
Director	0476
Dumont	0637
Eagle Comtronics	0060, 0028
Eastern	0002, 0274, 0418
Electricord	0078
Emerson	0797, 0303, 0015, 0014
Everquest	0040, 0015
Focus	0400
Fosgate	0276
Funai	0248, 0019
FutureVision	0649
Garrard	0153
Gateway	0764
GC Electronics	0207, 0056, 0330, 0016, 0040, 0077, 0030

Cable box brand	Code number
GE	0232, 0233, 0144, 0021
Gemini	0015, 0070, 0057, 0242, 0014, 0797, 0013, 0400
General Instrument	0476, 0011, 0014, 0098, 0810, 0024, 0003, 0015, 0276
GHZ	0078
Gibraltar	0003
Global	1327
GMI	0069, 0057, 0015, 0797
GoldStar	0144, 0040
Goodmind	0770, 0797
Gradiente	1136
Hamlin	0020, 0009, 0034, 0259, 0015, 0273, 0206
Healthway Interactive	0058, 1020, 1015, 0769
Hitachi	0011, 0154, 0009, 0008, 0003, 0033, 0014, 0255
Houston Tracker	0011
Hwalin	0303
IBM	0670
IIEC	1018
Interbuy	0274
Jasco	0315, 0153, 0015
Jebsee	0014, 0400
Jerrold	0003, 0014, 0276, 0011, 0012, 0020, 0024, 0015, 0047, 0098, 0476, 0031, 0029, 0111, 0032, 0054, 0810, 0028
Kuang Yu	0024
Leon	0069, 0015
LG	0040, 0144
Linsay	0440
Macom	0033
Maestro	0812
Magnavox	0797, 0027, 0032, 0334, 0069
Millennium	0618, 0153
Memorex	0000
Mitsubishi	0003

Cable box brand	Code number
Motorola	0476, 0276, 1476, 0810, 1376, 1254, 0400, 1106
Movie Time	0156, 0078, 0063, 0203
MS	0069, 0015, 1018, 0303
MultiVision	0012
Myrio	1117
NET	0274
Next Level	0764, 1316, 1315, 1314
Nexus	0770
Northcoast	0671, 0314
Nova Vision	0277, 0008
Novabeam	0277
Novaplex	0618, 0277, 0017, 0008
NSC	0156, 0070, 0203, 0063, 0400, 0012, 0618, 0022, 0637, 0010, 0044
Oak	0019, 0303, 0248, 0017
Omega	0015
Omniview	0371
Optimus	0021
Pace	0237
Pacific Bell	0843
Panasonic	0107, 0021, 0144, 0008, 0124, 0307, 0000, 0040
Panther	0637
Paragon	0000, 0525, 0008
Penney	0637, 0000
Philips	0025, 0031, 0290, 0027, 0030, 0153, 0060, 0242, 0028, 0334, 0211, 0029, 0259, 0307, 0652, 0013, 0069, 0649, 0255, 0305, 0032, 0111, 0317
Pioneer	0144, 0023, 0533, 1877, 0877, 0260
Popular Mechanics	0400
Prelude	0770
Prism	0012, 0013, 0059
Protelcon	0786
Pulsar	0000, 0040
Quasar	0000

Cable box brand	Code number
Quest	0144, 0020
R Line	0040
RadioShack	0883, 0015, 0315, 0303, 0797
Rampage	0255
Ranger	1247
RCA	0021, 0060, 0797, 0047, 1256, 0843
Realistic	0207, 0153
Recoton	0153, 0400
Regal	0259, 0020, 0273, 0279, 0276
Regency	0002, 0020, 0682
Rembrandt	0070, 0153, 0040, 0022, 0011
RK	0304, 0479
Runco	0000
Samsung	0040, 0144, 0023, 0003, 0070, 0000
Sasktel	1737
Scientific Atlanta	0008, 0277, 0017, 0006, 0237, 0025, 0477, 0207, 0877, 0003, 0012, 0000, 0021, 1877
Seam	0510
Sears	0510
Sejin	1265
Sigma	0019
Signal	0040, 0015, 0011, 0035
Signature	0011
SkyCable	0112
Skygiant	1091
SL Marx	0040
Sony	1006, 1506, 1606
Spectradyne	0769, 0058
Spectravision	0058
Sprucer	0021, 0307, 0010, 0144
Standard Components	0203, 0096, 0155
Starcom	0003, 0015, 0047, 0014, 0098, 0305

Cable box brand	Code number
Stargate	0015, 0040, 0770, 0865, 0797, 0305, 0014
Starquest	0015
StarSight	0542, 0422
Stealth	0274
Stellar One	0807
Storm	1018, 0637
Suena Madritel	1230
Supercable	0276
Supermax	0883
Sylvania	0001
Tandy	0258
Tatung	0097
Teac	1018
Technics	0029
Teknika	0146
Teleavia	0040
TeleCaption	0221
Television	0063, 0040
Texscan	0001, 0096, 0010
TFC	0310
Thomson	1256
Timeless	0418, 0274, 0040
Tocom	0012, 0013, 0029, 0019, 0059, 0017
Torx	0003
Toshiba	0000
Trans PX	0303, 0276, 0153, 0315
Trinity	1248
Tristar	0883
TS	0255, 0024, 1018, 0003, 0303
Tusa	0015
TV COMM	0035, 0019
TV Guide	1476
TV86	0063, 0040
Uniden	0022
Unika	0207, 0153, 0022

Cable box brand	Code number
United Cable	0003, 0014, 0011, 0276
Universal	0191, 0078, 0207, 0056, 0022, 0039, 0153, 0077, 0322, 0315
US Electronics	0276, 0008, 0003, 0017
V2	0883
Videoway	0250, 0000
VideoWorks	0124
Vidtech	0244
Viewmaster	0883, 0770
Viewstar	0258, 0289, 0060, 0063, 0211, 0027, 0111, 0030, 0121
Vision	0883
Visionetics	1264
Vortex View	0883
WaveMaster	0565
Wiso	0078
Zenith	0000, 0525, 0054, 0017, 0039, 0153, 0060, 0315, 0191, 0899
Zentek	0400

Satellite receiver brand	Code number
AlphaStar	0772
Atlantic Telephone	1333
Bell ExpressVu	0775
Century	0856
Chaparral	0216
Crossdigital	1109
DirecTV	0749, 0566, 0392, 1749, 0099, 1109, 1076, 1442, 1856, 0247, 1142, 1639, 0724, 0639, 0819
Dish Network System	0775, 1005, 1170
Dishpro	0775, 1005
Echostar	0775, 1170, 1005
Expressvu	0775
Galaxis	0863
GE	0566
General Instrument	0361, 0869, 0627
GOI	0775
Gradiente	0856
Hitachi	0819, 0749
Houston Tracker	0775
HTS	0775
Hughes Network Systems	0749, 1749, 1442, 1142
Humax	1176, 1359, 1048, 0863, 0283
Innova	0099
Jerrold	0361, 0036, 0627
JVC	0775, 1170
Magnavox	0722, 0724
McIntosh	0869
Memorex	0724
Mitsubishi	0749
Motorola	0869
NEC	1270
Netsat	0099
Next Level	0869
Optimus	0724
Panasonic	0247, 0701

Satellite receiver brand	Code number
Paysat	0724
Philips	1076, 0099, 1142, 0724, 0722, 0749, 1442, 1749, 0856, 0775
Primestar	0361, 0627, 0869
Proscan	0392, 0566
QNS	1367
RadioShack	0869
RCA	0566, 0392, 0143, 0855
Samsung	1109, 1276
Sky	0856, 0099, 1856
Sony	0639, 1639
Star Choice	0869
Star Trak	0869, 0772
Thomson	0566, 0392
Tivo	1142, 1442
Toshiba	0790, 0749, 1749, 1285
UEC	1333, 1358
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