



DVD Recorder

RDR-GX7

Operating Instructions



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-GX7

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 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 recording

- Contents of the recording cannot be compensated if the recording or playback is not made due to a malfunction of the recorder, disc, etc.
- Make trial recordings before taking the actual recording.

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.

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.

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 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.

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 resistors, 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.

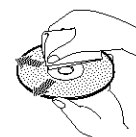
- 12 Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
- 13 Unplug this apparatus during lightning storms or when unused for long periods of time.
- 14 Refer all servicing to qualified service personal. Servicing is required when the apparatus has been damaged in any way, such a 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.

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.

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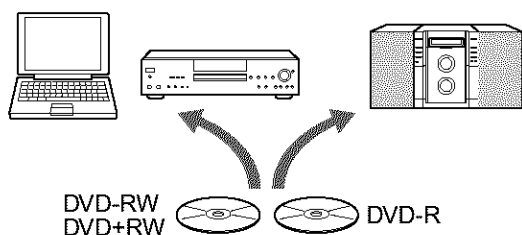
Features

This recorder can play DVDs or CDs, record on DVD-Rs, DVD-RWs or DVD+RWs, and by using a variety of editing functions, you can enjoy editing recorded programs and other images.

Recording

Dual RW compatible (page 35)

The recorder is compatible with rewritable disc types, DVD-RW and DVD+RW, and the write-once type, DVD-R. These available disc types accommodate a wide range of uses, such as recording programs and creating personal video libraries. These discs can be played back on a wide variety of other DVD equipment.



Various recording/timer recording functions (page 35)

In addition to the usual recording functions, such as Timer Recording and VCR Plus+, Synchro Rec allows synchronized recording with a set top box or similar device.

Automatic searching for recording space (page 37)

The recorder automatically searches for available blank space on the disc after you press the Rec button. No searching is required on your part – a feature possible only with a DVD recorder.

Adjustments for both recording and playback picture (page 46, 60)

The recorder allows you to adjust the picture quality of input sources, such as a VCR, which can then be recorded on a DVD. For instance, if you want to create an archive of your VHS tapes, you can adjust the recording picture quality to compensate for the quality of the tapes. Various picture quality adjustments are also available for DVD-Video software playback.

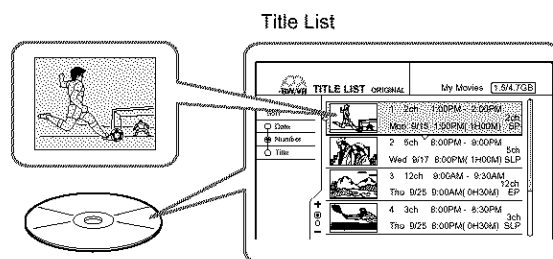
Playback

Easy playback with the Title List menu (page 53)

The recorder will display all of the titles you recorded on a disc in a list display, called the "Title List." By selecting a title from the Title List menu, you can easily start playing or editing the disc. Moreover, you can have the recorder show the title's contents using thumbnail images.

The recorder also automatically takes program label information from the XDS (Extended Data Service)* and displays it as the title name.

* not available in some areas



TV Virtual Surround Settings, "TVS" (page 58)

Using only your TV's stereo speakers, the recorder is capable of reproducing dynamic surround sound from DVD-Video software's multi-channel audio signals. There are four surround modes to choose from.

Editing a disc

Playlist edit (DVD-RW in VR mode only) (page 67)

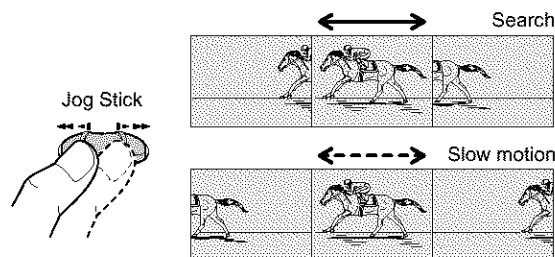
You can edit not only the recorded original title, but also perform advanced edit functions by creating a Playlist on the same disc. Since a Playlist does not require much disc space, you can create numerous Playlist titles. A Playlist edit can be redone as many times as you like, as the original title remains unchanged.

Chapter Marking function (page 67)

On DVD-RWs in VR mode, you can manually insert chapter marks to divide a title into chapters which will enable you to quickly find specific scenes for playback or editing. For other disc types and recording formats, the recorder automatically creates chapter marks at specified intervals while recording.

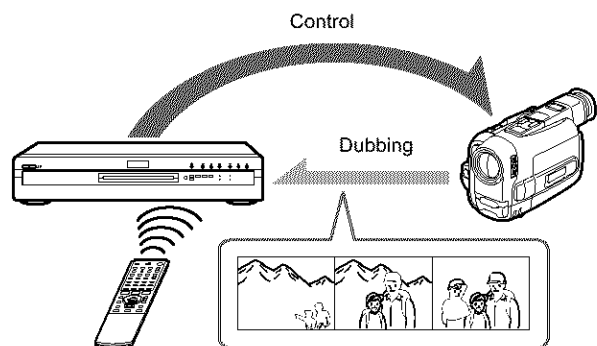
Quick Search function (page 52)

The remote has a Jog Stick for the recorder's main operations. You can search forward or backwards, or play at various speeds by using just your thumb. The feature helps you find scenes easily, which is especially useful for both playback and editing.



DV Edit

Only one i.LINK cable is required to transfer contents from a digital video camera to the DVD recorder. Since the recorder controls the digital video camera, dubbing and editing are easy to perform.



One Touch Dubbing function (page 78)

One press on the ONE TOUCH DUB button is enough to complete the procedure. The recorder controls the digital video camera from start to finish — from playing the DV/Digital8 format tape to stop and rewind. The entire tape contents are dubbed to a DVD in the process.

Program Edit (page 79)

This function allows you to select scenes on a DV/Digital8 format tape and save them on recordable DVDs, including non-rewritable DVD-Rs. The recorder controls the digital video camera to record the contents of a DV/Digital8 format tape to the disc as programmed. The recorder will remember which scenes you selected and saves this information as a program. You can call up a program at any time and make additional copies of the program to DVDs.

Advanced Program Edit (page 81)

This function takes advantage of a DVD's random access capabilities to enable fast and flexible editing. The recorder copies the entire contents of a DV/Digital8 format tape to a DVD-RW in VR mode, whereupon the contents are automatically divided into chapters. The chapters are displayed as scenes in a scene list where you can instantly delete or rearrange the scenes at will. The recorder remembers which scenes you selected, and saves this information as a program. You can call up a program at any time and make additional copies of the program to a DVD.

Auto Scene Chaptering (DVD-RW in VR mode only) (page 78, 79, 81)

While copying a DV/Digital8 format tape to a DVD-RW, the recorder automatically inserts chapter marks at each point where you started recording on your digital video camera. This enables you to quickly find the scenes you want during playback and editing.

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 meanings of the icons used in this manual are described below:

Icon	Meaning
DVD	Functions available for DVD VIDEOS or DVD+Rs
-RW VR	Functions available for DVD-RWs formatted in VR mode on this recorder
-RW VIDEO	Functions available for DVD-RWs formatted in Video mode on this recorder
+RW	Functions available for DVD+RWs
-R	Functions available for DVD-Rs
CD	Functions available for music CDs or CD-Rs/CD-RWs in music CD format

Notes

- 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.

DVD Recorder Basics

“What can I expect from DVD recording?” is a natural question for anyone new to the experience. This section explains the basic steps involved with DVD recording.

Step 1: Select the disc type

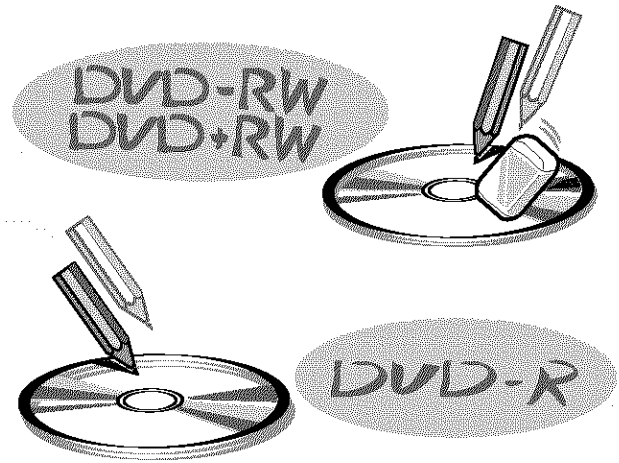
Unlike a video tape which is sold by length, such as 60 min. or 120 min., recordable DVDs are sold by type. Select the disc type by following the chart on the back cover, as each type has different features.

This recorder can record on the following type of discs.



When you want to record repeatedly on the same disc, or when you want to edit the disc after recording, select either the rewritable DVD-RW or DVD+RW type disc.

When you want to save recordings without any alteration, a non-rewritable DVD-R can be your choice.



Note

There are other differences besides just being rewritable/non-rewritable.

See “Quick Guide to DVD Disc Types” on the back cover to select a disc most suitable for your needs.

Step 2: Format the disc to start recording

Insert the disc in the recorder. Unlike a VCR, the recorder automatically starts formatting when an unused disc is inserted. This is necessary to prepare the disc for recording.

When using a DVD-RW

This type of disc can be formatted in either DVD Video format (Video mode) or DVD Video Recording format (VR mode). Video mode discs can be played back on a variety of other DVD equipment. VR mode discs allow for more varied editing.

When using a DVD+RW

These discs will be formatted in DVD+RW Video format. This type of disc can be played back on a variety of other DVD equipment.

When using a DVD-R

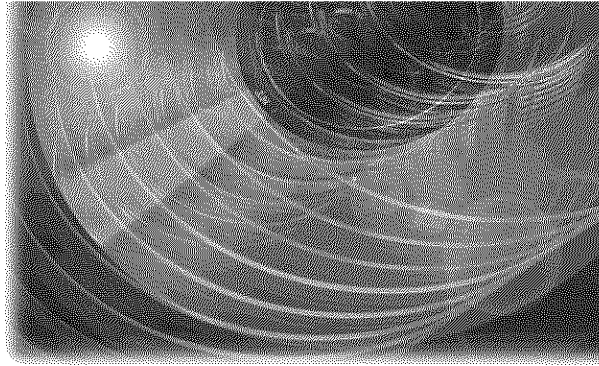
These discs will be formatted in DVD-Video format. This type of disc can be played back on a variety of other DVD equipment.

Notes

- You cannot mix two formats in one DVD-RW.
- You can change a DVD-RW’s format to the other format. However, the disc’s contents will be lost when reformatting.
- Not all discs can be played on other DVD equipment.

When formatting is complete, you are ready to record on the disc.





Step 3: Digital Recording

Record a program. When using the timer, you'll find familiar, convenient features as found on conventional VCRs, such as VCR Plus+. You can also dub and edit the contents of connected video equipment such as a digital video camera.



i.LINK (DV)

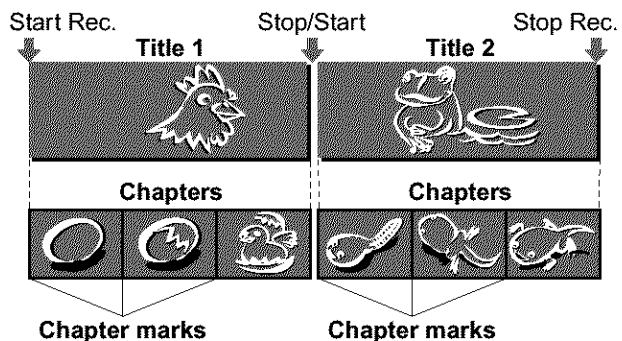
Step 4: Playing the recorded contents

You can select the title you want to play from a displayed menu, and immediately start playback. Recorded contents are more accessible on a disc than on a tape, the procedure is simple, and unlike conventional VCRs, no rewinding is necessary!

What are titles and chapters?

DVD contents consist of sections, called titles, and smaller sub-sections called chapters. On this recorder, a title is created between the points where you start and stop a recording. Chapters are created automatically at specified intervals, or can be created manually (DVD-RWs in VR mode only).

A recorded disc contains title(s), and each title contains chapter(s)



Go to the next page.

→continued

Step 5: Editing the recorded disc

You will find editing discs a lot easier than a conventional tape, and the recorder offers numerous edit functions, possible only with DVDs.

Quick and easy edits on the displayed menu

Editing is performed by simply selecting titles and scenes from the displayed menus.

Protection of individual titles

With conventional VCRs, you had to protect an entire tape to save the recordings from erasure or alteration. This recorder allows you to individually protect recorded titles (except for Playlist titles).

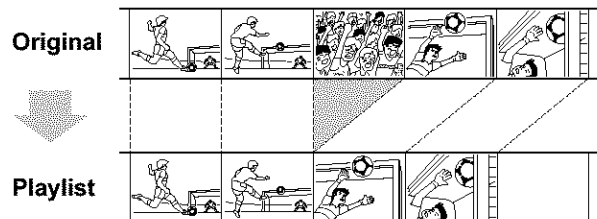
Edit and save on a single disc

– Playlist edit (DVD-RWs in VR mode only)

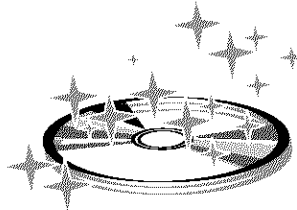
To edit a conventional tape without affecting the original recording, you had to connect another VCR, copy the master tape using the two VCRs and one more tape, and start editing the copied tape.

With this recorder, you can create a Playlist (playback information) on the same disc, and edit the Playlist without changing the original recording(s). A Playlist does not take up much disc space, and all you need is one recorder and one disc.

Example: You have recorded a few football games on a DVD-RW in VR mode. You want to save the original recording, but you also want to create a digest by putting the goal scenes together. In this case, you can create a Playlist by selecting just the goal scenes, leaving the original recording as it is.



You've got your own DVD!



Playing on other DVD equipment

For your DVD to play on other equipment, finalizing may be necessary in some cases. If so, finish up all your editing and recording first, and then finalize the disc.

When using a DVD-RW in VR mode

Although finalizing is generally unnecessary when playing the disc on VR mode compatible equipment, playback on some equipment requires a finalized disc. You can still edit and record on the disc even after finalizing.

When using a DVD+RW

The recorder automatically finalizes a disc before ejecting it. Finalizing in this case still allows you to further edit or record on the disc.

When using a DVD-RW in Video mode

The disc needs to be finalized first to enable playback on anything other than this recorder. No more editing or recording can be made on the disc once it has been finalized. To enable recording on the disc again, you will need to format it again. (Reformatting will erase all previous contents.)

When using a DVD-R

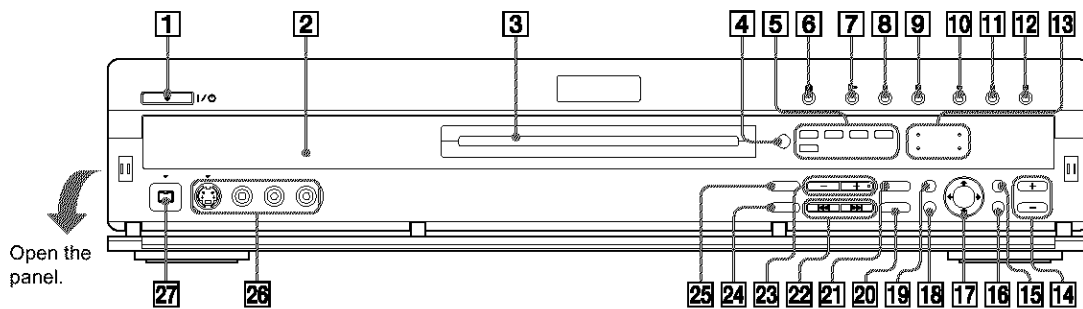
You will need to finalize the disc to play it on equipment other than this recorder. You cannot edit or record on the disc once it has been finalized.

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.

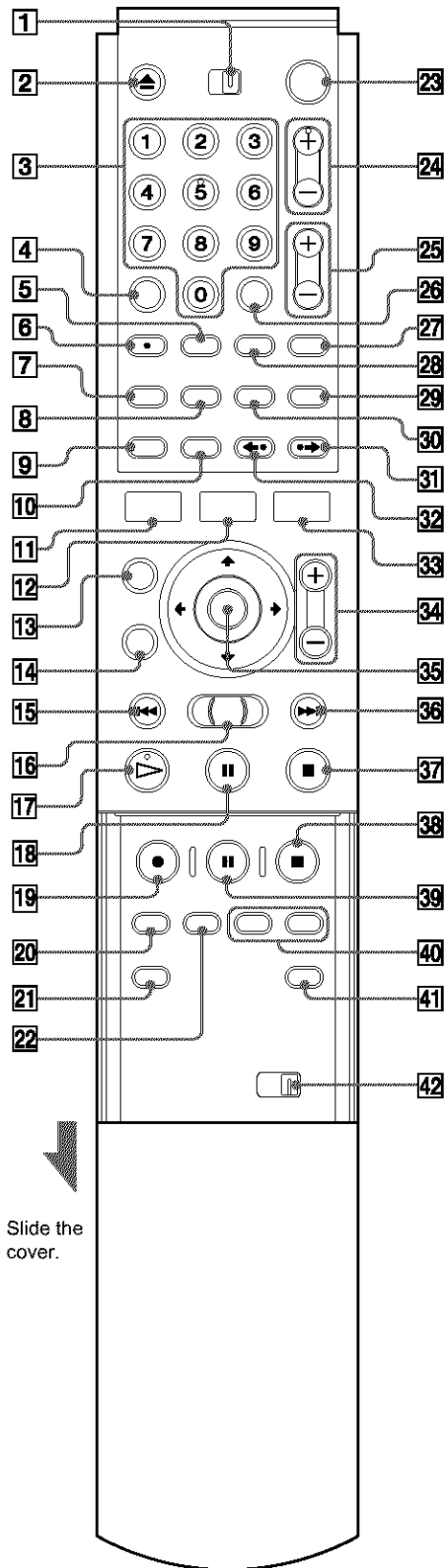


- | | | |
|---|--|---|
| <p>1 I/⏻ (on/standby) button/indicator (22, 38)
Turns the recorder on and off. Lights up in green when the power is on.</p> <p>2 Front panel display (14, 57)
Displays the playing status, title/chapter/time, etc.</p> <p>3 Disc tray (38)
Opens to accept a disc.</p> <p>4 ■ (remote sensor) (22)
Accepts the remote control signal.</p> <p>5 Disc type indicators
Lights up to indicate the disc/format type of the current disc.</p> <p>6 ⏻ (open/close) button (38)
Opens or closes the disc tray.</p> <p>7 ▶ (play) button/indicator (50)
Plays a disc.</p> <p>8 ⏸ (pause) button/indicator (52)
Pauses playing a disc.</p> <p>9 ■ (stop) button (51)
Stops playing a disc.</p> <p>10 ● REC button/indicator (38)
Starts recording.</p> <p>11 ⏸ REC PAUSE button/indicator (39)
Pauses recording.</p> | <p>12 ■ REC STOP button (39)
Stops recording.</p> <p>13 SYNCHRO REC indicator (47)
Lights up when the Synchro Rec function is set to on.</p> <p>TIMER REC indicator (40)
Lights up when a timer recording is set.</p> <p>FINALIZED indicator (73)
Lights up if an inserted disc has been finalized.</p> <p>PROGRESSIVE indicator (51)
Lights up when outputting progressive signals.</p> <p>14 ZOOM +/- buttons (32)
Switches the information displayed in the Title List menu.</p> <p>15 CURSOR MODE button (32)
Switches the cursor/page mode in the Title List, etc.</p> <p>16 TOOLS button (32)
Displays the TOOLS menu.</p> <p>17 ←/↑/↓/→/ENTER button (33)
Selects items or settings.</p> <p>18 RETURN button (33)
Returns to the previously selected display, etc.</p> | <p>19 SYSTEM MENU button (31)
Displays the System Menu on the TV screen.</p> <p>20 ONE TOUCH DUB button (78)
Records the contents of a DV/Digital8 format tape with a single touch of the button.</p> <p>21 REC MODE button (38)
Selects the recording mode.</p> <p>22 ⏮/⏭ (previous/next) buttons (52)
Goes to the next title/chapter/track, or goes back to the previous title/chapter/track.</p> <p>23 CHANNEL +/- buttons (38)
Selects the channel or input line.</p> <p>24 PROGRESSIVE button (51)
Switches the output signal, progressive or interlace.</p> <p>25 INPUT SELECT button (38, 75, 88)
Selects equipment connected to the line inputs.</p> <p>26 LINE 2 IN (S VIDEO/VIDEO/AUDIO L/R) jacks (88)
Connects external equipment.</p> <p>27 ⏻ DV IN jack (76)
Connects digital equipment with a DV jack.</p> |
|---|--|---|

→ continued

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 (26)**
Switches the remote control to TV or DVD.
- 2 **▲ OPEN/CLOSE button (38)**
Opens or closes the disc tray. Note that it may take a few seconds for the disc tray to open after you have recorded or edited a disc.
- 3 **Number buttons (38, 44)**
Select a number such as a channel or a title number. The number 5 button has a tactile dot.*
- 4 **CLEAR button (44)**
Cancels an entered number when used with this recorder.
- 5 **SUBTITLE button (60)**
Changes the subtitles while playing a disc.
- 6 **AUDIO button (57)**
Changes the sound while playing a disc. The button has a tactile dot.*
- 7 **TIMER button (40, 44)**
Displays the Timer programming menu on the TV screen.
- 8 **TOP MENU button (51)**
Displays the disc's menu on the TV screen.
- 9 **DISPLAY button (40, 56)**
Displays disc information or playing/recording status on the TV screen.
- 10 **TIME/TEXT button (56)**
Displays the time information of the disc.
- 11 **SYSTEM MENU button (31)**
Displays the System Menu on the TV screen.
- 12 **TITLE LIST button (32, 53, 64)**
Displays the Title List menu on the TV screen.
- 13 **CURSOR MODE button (32)**
Switches the cursor/page mode in the Title List, etc.
- 14 **RETURN button (33)**
Returns to the previously selected display, etc.
- 15 **◀◀ PREV (previous) button (52)**
Goes back to the previous title/chapter/track.
- 16 **◀◀◀/▶▶▶ (search) Jog Stick (52)**
Searches fast-forward or reverses a scene (while playing a disc), or plays a disc in slow motion or frame by frame (in the pause mode).
- 17 **▶▶ PLAY button (50)**
Plays a disc. The button has a tactile dot.*
- 18 **⏸ PAUSE button (52)**
Pauses playing a disc.

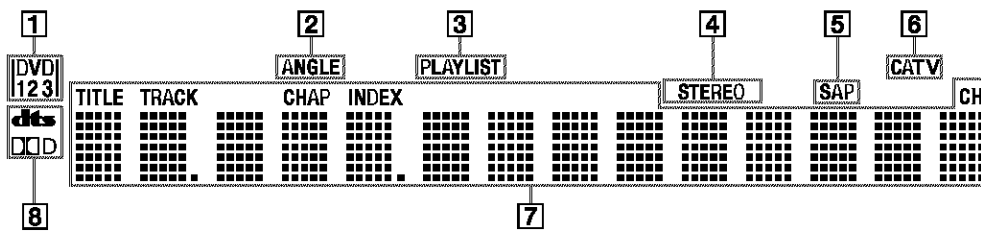
- 19 ● REC button (38)**
Starts recording.
- 20 REC MODE button (38)**
Selects the recording mode.
- 21 INPUT SELECT button (38, 75, 88)**
Selects equipment connected to the line inputs.
- 22 SYNCHRO REC button (47)**
Synchronizes the recorder and the timer recording set on the connected external equipment.
- 23 I/⏻ (on/standby) button (38)**
Turns the recorder on and off.
- 24 CH (channel) +/- buttons (38)**
Selects the channel or input line.
- 25 VOL (volume) +/- buttons (26)**
Adjusts the volume of your TV or AV amplifier (receiver).
- 26 SET button (34)**
Use to enter the number selected with the number buttons **3**.
- 27 TV/VIDEO button (26)**
Switches your TV's input source.
- 28 ANGLE button (59)**
Changes the angles when playing a DVD VIDEO.
- 29 WIDE MODE button (26)**
Changes the wide mode settings of your TV.
- 30 MENU button (51)**
Displays the disc's menu on the TV screen.
- 31 ●→ INSTANT SEARCH button (52)**
Briefly fast forwards the current scene.
- 32 ←● INSTANT REPLAY button (52)**
Replays the current scene.
- 33 TOOLS button (32)**
Displays the TOOLS menu.
- 34 ZOOM +/- buttons (32)**
Switches the information displayed in the Title List menu.
- 35 ←/↑/↓/→/(ENTER) button (33)**
Selects items or settings.
- 36 ►► NEXT button (52)**
Goes to the next title/chapter/track.
- 37 ■ STOP button (51)**
Stops playing a disc.
- 38 ■ REC STOP button (39)**
Stops recording.
- 39 ■■ REC PAUSE button (39)**
Pauses recording.

- 40 CHAPTER MARK/ERASE buttons (67)**
Inserts/erases a chapter mark in the recorded title.
- 41 SUR (surround) button (58)**
Selects the surround mode.
- 42 COMMAND MODE switch (DVD 1,2,3) (28)**
Switches the command mode for this recorder.
Match the switch to the same command mode set in the Options Setup (page 99).

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

→continued

Front panel display

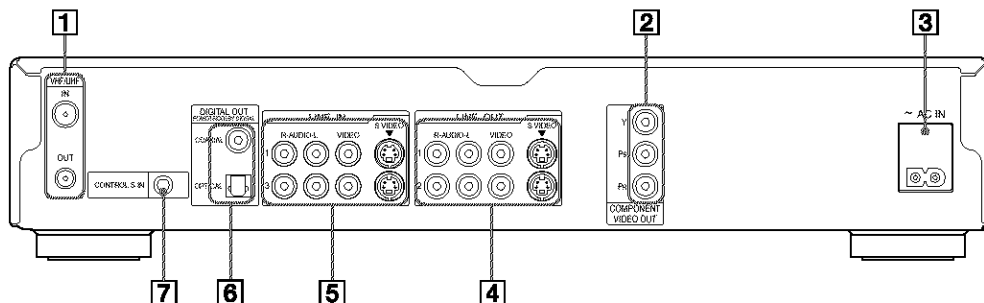


- | | | |
|--|---|---|
| <p>1 Command mode indicator (28, 99)
Indicates the selected remote command mode.</p> <p>2 ANGLE indicator (59)
Lights up when you can change the angle.</p> <p>3 PLAYLIST indicator (32)
Lights up when the Playlist is selected.</p> <p>4 STEREO indicators (39)
Lights up when receiving a stereo program.</p> | <p>5 SAP (Second Audio Program) indicator (39)
Lights up when receiving a SAP signal.</p> <p>6 CATV indicator
Lights up when receiving a Cable TV programs.</p> | <p>7 Displays the following (57):</p> <ul style="list-style-type: none"> • Playing time/remaining time • Current title/chapter/track/index number • Recording time • Clock • Channel <p>8 Audio signal indicators (58)
Lights up when playing Dolby Digital or DTS sound tracks.</p> |
|--|---|---|

Hint

You can turn off the front panel display by setting "Dimmer" to "Display Off" in Options Setup (page 99).

Rear panel



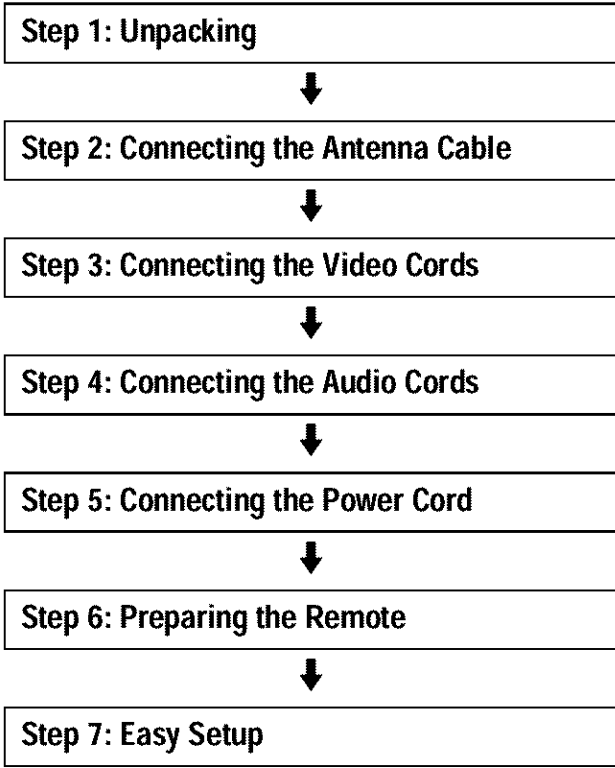
- | | |
|--|--|
| <p>1 VHF/UHF IN/OUT jacks (16)
Connects antenna cables.</p> <p>2 COMPONENT VIDEO OUT (Y, Pb, Pr) jacks (18)
Connects equipment having component video input jacks.</p> <p>3 AC IN terminal (22)
Connects the power cord.</p> <p>4 LINE OUT (S VIDEO/VIDEO/AUDIO L/R) 1/2 jacks (18, 20)
Connects the input of external equipment using an audio/video or S VIDEO cord.</p> | <p>5 LINE IN (S VIDEO/VIDEO/AUDIO L/R) 1/3 jacks (29)
Connects the output of external equipment using an audio/video or S VIDEO cord.</p> <p>6 DIGITAL OUT (COAXIAL/OPTICAL) jacks (20)
Connects an amplifier (receiver) having a digital input jack.</p> <p>7 CONTROL S IN jack (18)
Connects equipment having a CONTROL S jack.</p> |
|--|--|

Basic Hookups and Settings

- *Quick Overview*page 15
- *Step 1: Unpacking*page 16
- *Step 2: Connecting the Antenna Cable*page 16
- *Step 3: Connecting the Video Cords* . . .page 18
- *Step 4: Connecting the Audio Cords*page 19
- *Step 5: Connecting the Power Cord* . . .page 22
- *Step 6: Preparing the Remote*page 22
- *Step 7: Easy Setup*.....page 22
- *Setting up the VCR Plus[®] System* . . .page 25
- *Setting Up the Remote*.....page 26
- *Connecting a VCR or Similar Recording Device to the LINE Jacks*.....page 29
- *Connecting to a Satellite Receiver or a Cable Box*page 30

Quick Overview

A quick overview presented in this guide will give you enough information to start using the recorder.



Notes

- 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)
- Size AA (R6) batteries (2)

Step 2: Connecting the Antenna Cable

Select one of the following antenna hookups that best suits you below. Do not connect the power cord until you reach “*Step 5: Connecting the Power Cord*” (page 22).

If you have	Use
Antenna only (no cable TV), or cable without cable box	Hookup 1 (page 16)
Cable box with many scrambled channels	Hookup 2 (page 17)
Cable box with a few scrambled channels	Hookup 3 (page 17)

Note to CATV system installer (in USA)

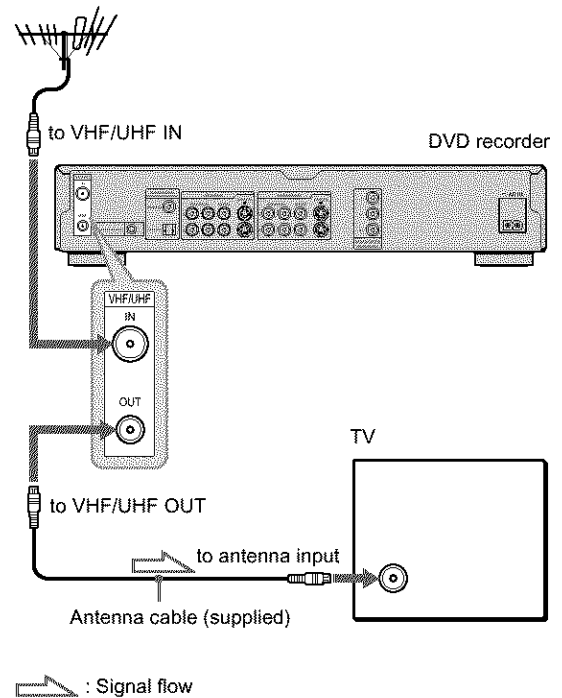
This reminder is provided to call the CATV system installer’s attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

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.

Hookup 1: Antenna only (no cable TV), or cable without cable box

Use this hookup if you are using a VHF/UHF antenna or separate VHF and UHF antennas. Also use this hookup if you watch cable channels without cable box. With this hookup, you can record any non-scrambled channel by selecting the channel on the recorder.

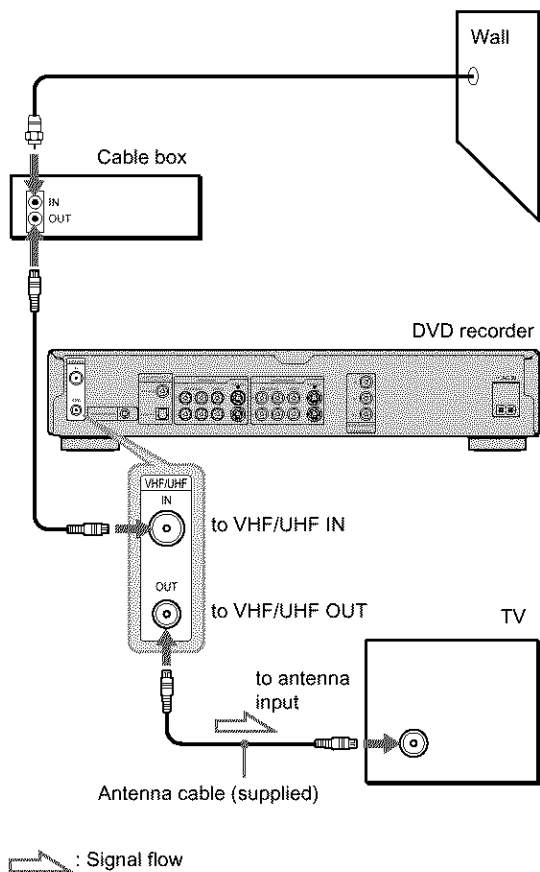


Hookup 2: Connecting a cable box with many scrambled channels

Use this hookup if your cable system scrambles all or most channels.

With this hookup:

- You can record any unscrambled channel by selecting the channel on the cable box. Be sure that the cable box is turned on.
- You cannot record one channel while watching another channel.



Hint

If the cable box has the audio/video output jacks, connect them to the LINE IN 1 or 3 jacks of this recorder. You can record unscrambled channels by setting the recorder's input to "L1" or "L3."

Note

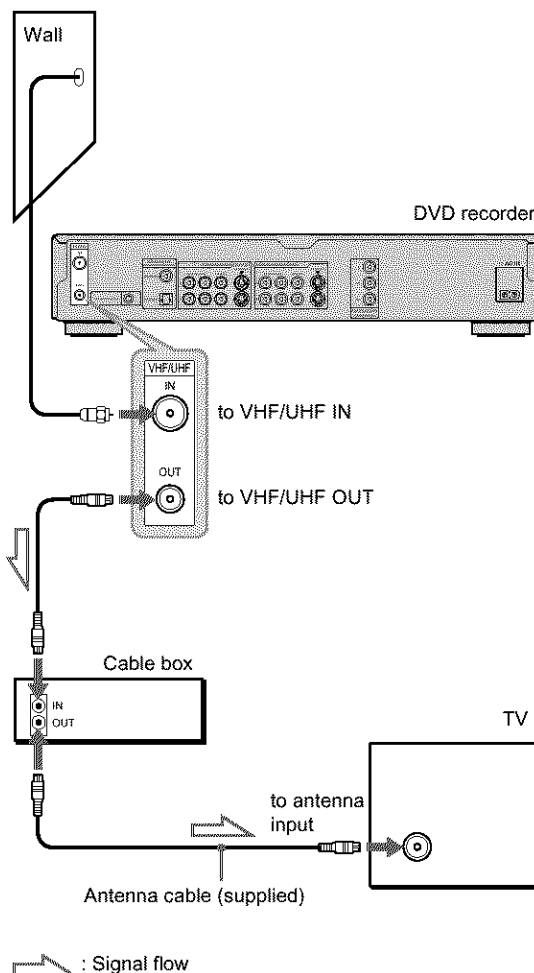
When connecting the cable box with the antenna hookup only, set the recorder to the channel where the signal from the cable box appears on the TV screen.

Hookup 3: Connecting a cable box with only a few scrambled channels

Use this hookup if your cable system scrambles only a few channels.

With this hookup:

- You can record any non-scrambled channel by selecting the channel on the recorder.
- You cannot record scrambled channels that require a cable box.



Step 3: Connecting the Video Cords

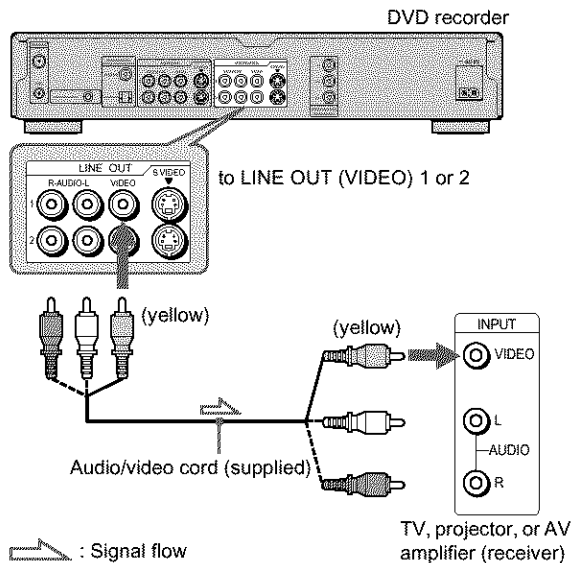
Connect this recorder to your TV monitor, projector, or AV amplifier (receiver) using a video cord. Select one of the following patterns **A** through **C**, according to the input jack on your TV monitor, projector, or AV amplifier (receiver). This will enable you to view pictures. Audio connections are explained in "Step 4: Connecting the Audio Cords" (page 19).

If you are connecting to a VCR

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

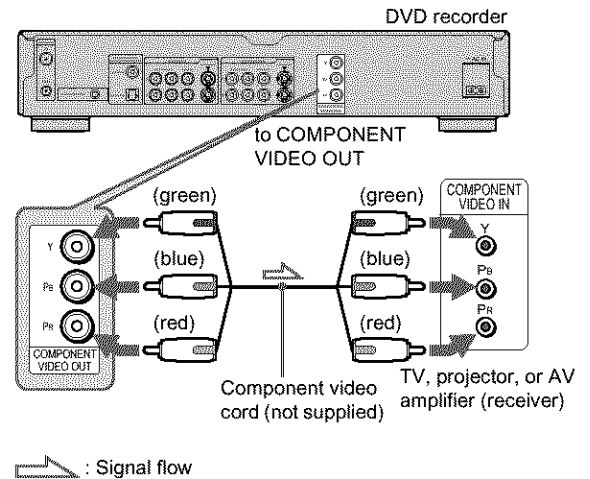
A Connecting to a video input jack

Connect the yellow plug of the audio/video cord (supplied) to the yellow (video) jacks. You will enjoy standard quality images. Use the red and white plugs to connect to the audio input jacks (page 20).



C Connecting to component video input jacks (Y, Pb, Pr)

Connect the component via 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 front panel to accept progressive video signals. See "Using the PROGRESSIVE button" (page 51) for more information.



When connecting to a standard 4:3 screen TV

Depending on the disc, the image may not fit your TV screen. To change the aspect ration, see page 94.

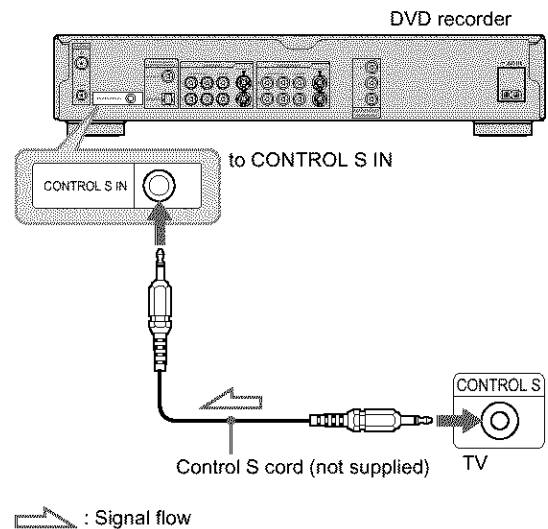
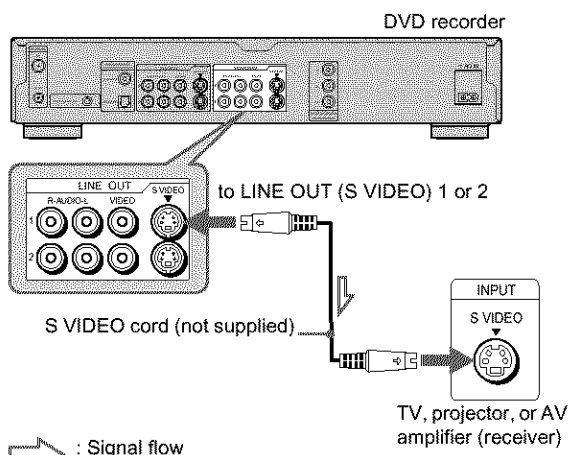
If your TV has a CONTROL S jack

You can control the recorder by operating the remote toward the TV. This feature is convenient when you placed the recorder and the TV away from each other.

After connecting the recorder to other equipment in pattern **A**, **B**, or **C** above, connect the CONTROL S IN jack to your TV's CONTROL S (OUT) jack using a control S cord (not supplied). Refer to the instructions supplied with the TV to be connected.

B Connecting to an S VIDEO input jack

Connect using an S VIDEO cord (not supplied). You will enjoy high quality images.

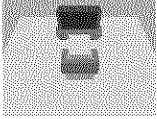
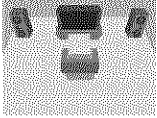
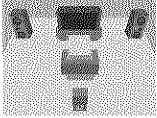
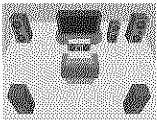


Note

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 the connection that best suits your system. Be sure to read the instructions for the components you wish to connect.

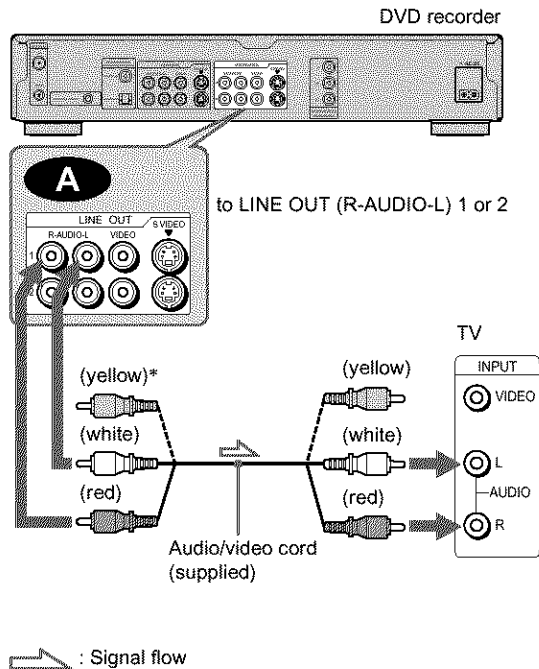
Connection	Your setup
<p>A</p> <p>TV</p> <ul style="list-style-type: none"> • Surround effects: Dynamic, Wide 	
<p>B</p> <p>Stereo amplifier (receiver) and two speakers</p> <ul style="list-style-type: none"> • Surround effects: Standard <p>MD deck/DAT deck</p> <ul style="list-style-type: none"> • Surround effects: None 	
<p>C</p> <p>AV amplifier (receiver) having a Dolby Surround (Pro Logic) decoder^{*1} and 3 to 6 speakers</p> <ul style="list-style-type: none"> • Surround effects: Dolby Surround (Pro Logic) 	
<p>D</p> <p>AV amplifier (receiver) with a digital input jack having a Dolby Digital or DTS^{*2} decoder and 6 speakers</p> <ul style="list-style-type: none"> • Surround effects: 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.

A Connecting to your TV

This connection will use your TV's speakers for sound.



* The yellow plug is used for video signals (page 18).

Hint

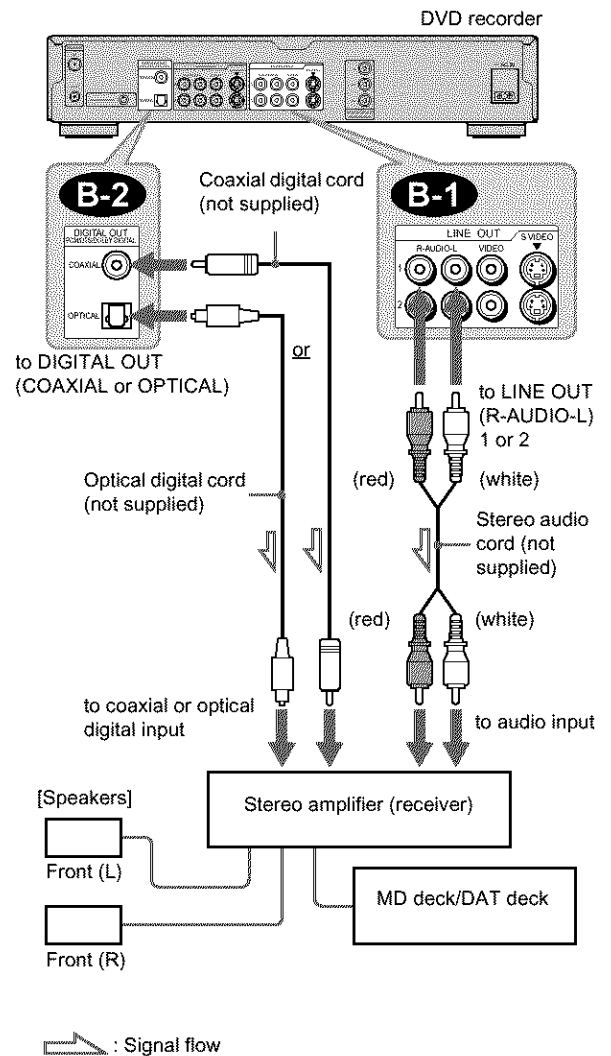
When connecting to a monaural TV, use a stereo-mono conversion cord (not supplied). Connect the LINE OUT (R-AUDIO-L) 1/2 jacks to the TV's audio input jack.

Note

Do not connect the LINE IN (AUDIO L/R) jacks to your TV's audio output jacks at the same time.

B Connecting to a stereo amplifier (receiver) and 2 speakers/Connecting to an MD deck or DAT deck

If your stereo amplifier (receiver) only has audio input jacks L and R, use **B-1**. If your amplifier (receiver) has a digital input jack, or when connecting to an MD deck or DAT deck, use **B-2**. In this case, you can also connect the recorder directly to the MD deck or DAT deck without using your stereo amplifier (receiver).



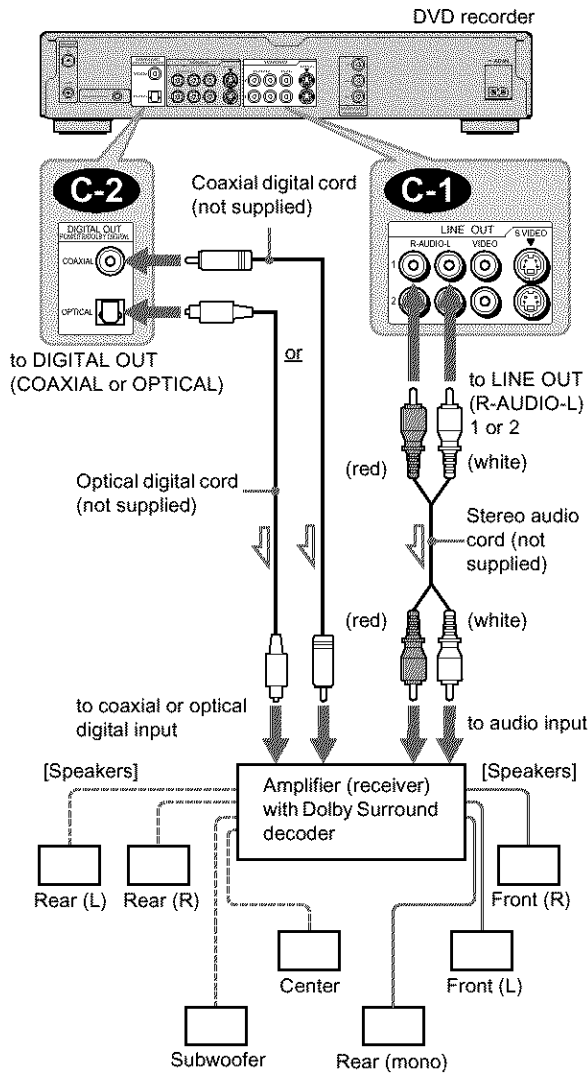
Hint

For connection **B-1**, you can use the supplied audio/video cord instead of using a separate stereo audio cord.

C Connecting to an AV amplifier (receiver) having a Dolby Surround (Pro Logic) decoder and 3 to 6 speakers

If your AV amplifier (receiver) only has L and R audio input jacks, use **C-1**. If your amplifier (receiver) has a digital input jack, use **C-2**.

You can enjoy Dolby Surround effects only when playing Dolby Surround audio or multi-channel audio (Dolby Digital) discs.



: Signal flow

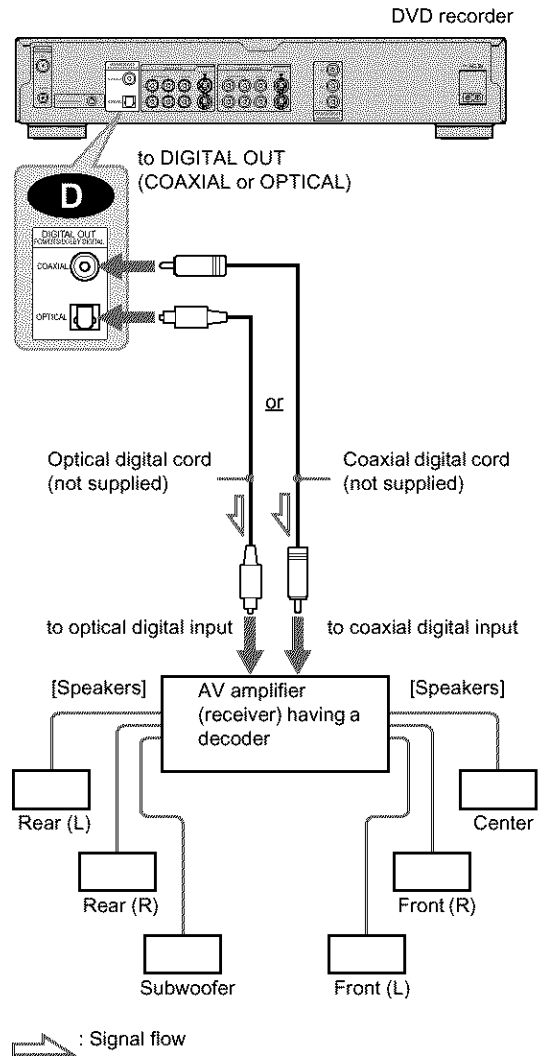
Hint
For correct speaker location, see the operating instructions of the connected components.

Note

When connecting 6 speakers, replace the monaural rear speaker with a center speaker, 2 rear speakers, and a subwoofer.

D Connecting to an AV amplifier (receiver) with a digital input jack and 6 speakers

If your AV amplifier (receiver) has a Dolby Digital or DTS decoder and a digital input jack, use this connection. Note that the surround sound effects of this recorder cannot be used with this connection.



: Signal flow

Hint
For correct speaker location, see the operating instructions of the connected components.

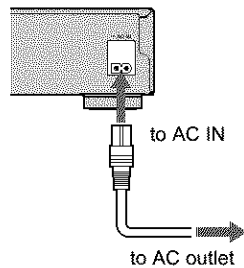
Note

After you have completed the connection, be sure to set "Dolby Digital" to "Dolby Digital" and "DTS" to "On" under "Audio" in Easy Setup (page 24). Otherwise, no sound or a loud noise will come from your speakers.

Step 5: Connecting the Power Cord

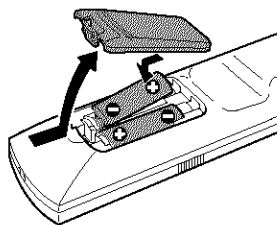
Connect the supplied power cord to the AC IN terminal of the recorder. Then plug the recorder and TV power cords into an AC outlet. After you connect the power cord, **you must wait for a short while before operating the recorder.** You can operate the recorder once the front panel display lights up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

If you connect additional equipment to this recorder (*pages 29 to 30*), be sure to connect the power cord 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. For details, *see page 28*.
- Do not leave the remote in an extremely hot or humid place.
- Do not drop any foreign object into the remote casing, particularly when replacing the batteries.
- Do not expose the remote sensor to direct sunlight or a lighting apparatus. Doing so may cause a malfunction.
- If you do not use the remote for an extended period of time, remove the batteries to avoid possible damage from battery leakage and corrosion.

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. Make the settings below in the following order.

OSD Language Setup



Clock Setup



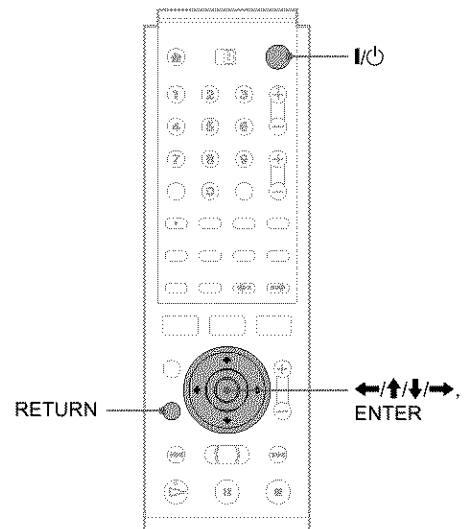
Tuner and Channel Setup



TV Type Setup



Audio Connection Setup



1 Turn on the TV.

2 Press I/O.

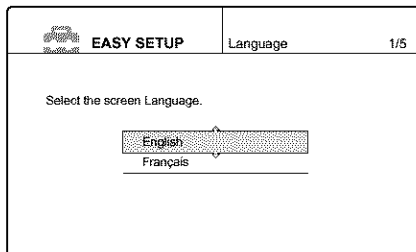
The recorder turns on and the power indicator on the front panel lights up in green.

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.” 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 90*.

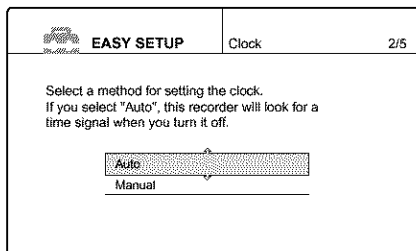
4 Press ENTER.

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



5 Press ↑/↓ to select a language, then press ENTER.

The Setup Display for clock setting appears.



6 Press ↑/↓ to select the item that matches the antenna connection you selected on page 16 (Hookup 1, 2, or 3).

◆ **Hookup 1 and 3**

Select “Auto,” then 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).

To activate the Auto Clock function, turn off the recorder after finishing Easy Setup.

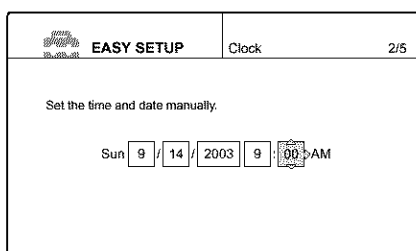
If your clock is set to the wrong time zone or Daylight Saving Time, you can adjust these settings (page 93).

If your clock cannot be set automatically, set the clock manually (page 93).

◆ **Hookup 2**

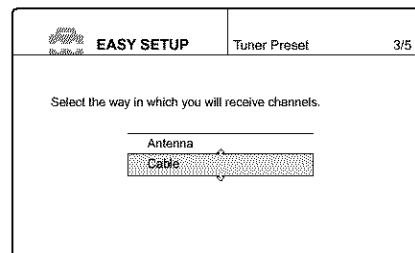
Select “Manual,” then press ENTER.

Set the clock manually using ←/↑/↓/→, and press ENTER.



Once the clock is set, the Tuner Preset display appears.

7 Press ↑/↓ to select the item that matches the antenna connection you selected on page 16 (Hookup 1, 2, or 3).



◆ **Hookup 1 and 2**

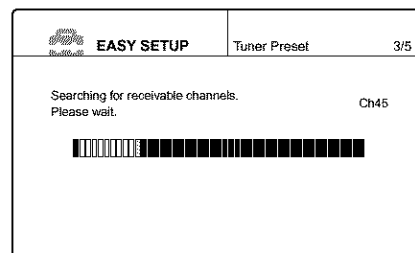
- Antenna

◆ **Hookup 3**

- Cable

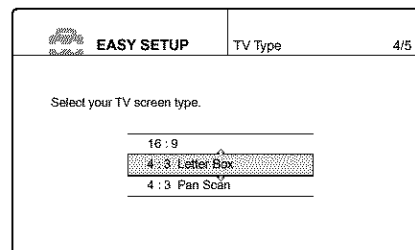
8 Press ENTER.

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



To set the channels manually, see page 92.

After the Tuner Preset is finished, the Setup Display for selecting the aspect ratio of the connected TV appears.



9 Press ↑/↓ to select the setting that matches your TV type.

◆ **If you have a 4:3 standard TV**

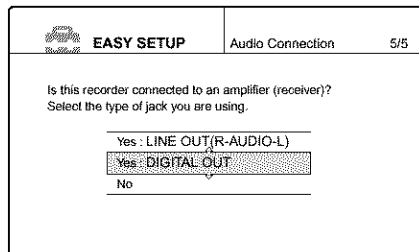
- 4:3 Letter Box
Displays a wide picture with bands on the upper and lower sections of the screen.
- 4:3 Pan Scan
Automatically displays a wide picture on the entire screen and cuts off the sections that do not fit.

◆ **If you have a wide-screen TV or a 4:3 standard TV with a wide-screen mode**

- 16:9

For details, see “TV type” on page 94.

- 10 Press ENTER.**
The Setup Display for selecting the type of jack used to connect to your amplifier (receiver) appears.



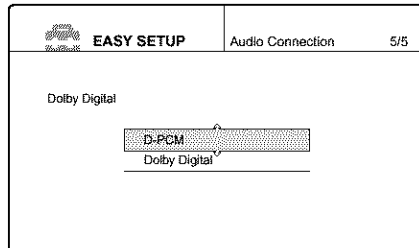
- 11 Press ↑/↓ to select the type of jack (if any) you are using to connect to an amplifier (receiver), then press ENTER.**

Choose the item that matches the audio connection you selected on *pages 20 to 21* (A through D).

- A**
 - If you connect just a TV and nothing else, select “No,” then go to step 15.
- B-1 C-1**
 - Select “Yes: LINE OUT (R-AUDIO-L),” then go to step 15.
- B-2 C-2 D**
 - Select “Yes: DIGITAL OUT.” The Setup Display for “Dolby Digital” appears.

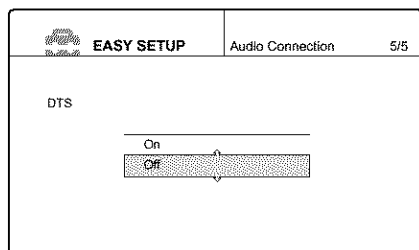
- 12 Press ↑/↓ to select the type of Dolby Digital signal you wish to send to your amplifier (receiver).**

Choose the signal that matches the audio connection you selected on *pages 20 to 21* (B through D).



- B-2 C-2**
 - D-PCM
- D**
 - Dolby Digital (only if the amplifier (receiver) has a Dolby Digital decoder)

- 13 Press ENTER.**
The Setup Display for selecting the type of DTS signal appears.

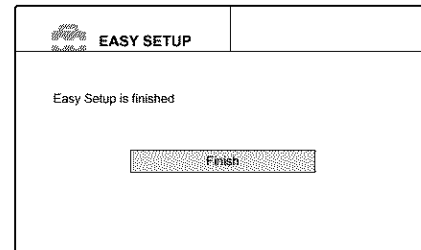


- 14 Press ↑/↓ to select whether or not you wish to send a DTS signal to your amplifier (receiver) and press ENTER.**

Choose the item that matches the audio connection you selected on *pages 20 to 21* (B through D).

- B-2 C-2**
 - Off
- D**
 - On (only if the amplifier (receiver) has a DTS decoder)

- 15 Press ENTER when “Finish” appears.**
Easy Setup is finished. All connections and setup operations are complete.



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 100*).

Notes

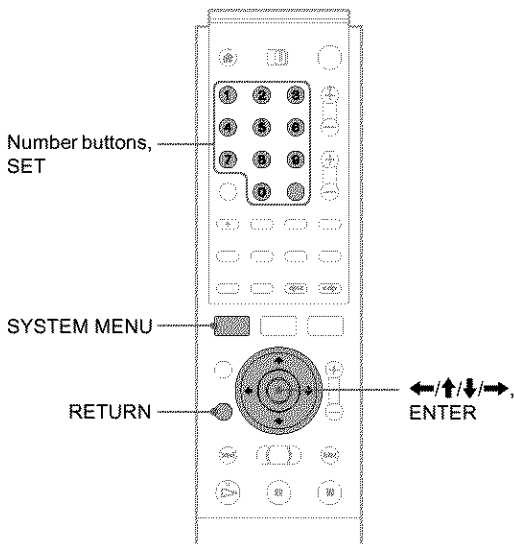
- If there are only a few channels in your area that carry time signals, setting the clock automatically may take up to about 20 minutes after the recorder turns off. If nothing happens even after you wait about 20 minutes, set the clock manually in “Clock” of “Settings” (*page 93*).
- If you use the antenna connection Hookup 2 (*page 17*), make sure you leave the cable box on.
- To record TV programs using the timer, you must set the clock accurately.

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).

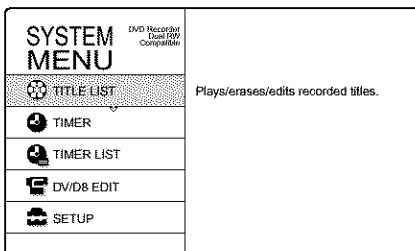
To find the guide channel numbers, look at the "Channel Line-up Chart" in the program guide for your area that features VCR PlusCode numbers.

Use the Channel Line-up Chart to check that the guide channel numbers match the TV channel your recorder receives. If not, you need to coordinate these numbers using the following procedure. If the guide and TV channel numbers are the same, you can skip this procedure.



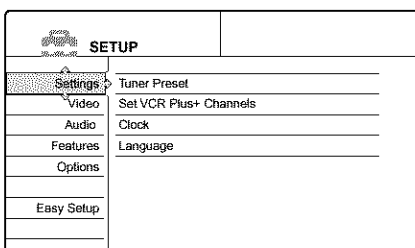
1 Press **SYSTEM MENU** while the recorder is stopped.

The System Menu appears.



2 Press **↑/↓** to select "SETUP," then press **ENTER**.

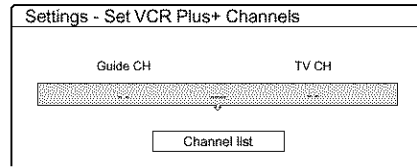
The Setup Display appears.



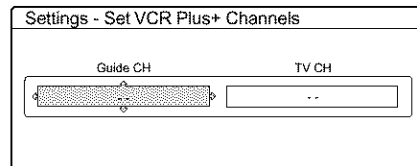
3 Press **↑/↓** to select "Settings," then press **ENTER**.

4 Press **↑/↓** to select "Set VCR Plus+ Channels," then press **ENTER**.

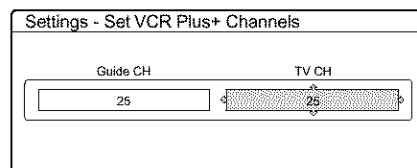
The display for setting VCR Plus+ channels appears.



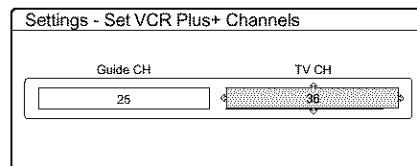
5 Press **↑/↓** to select "Guide CH – TV CH," then press **ENTER**.



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



7 Enter the TV channel number.



◆ For Hookup 1 or 3 (page 16)

Enter the actual number on your TV (and recorder) using the number buttons, then press **SET**.

◆ For Hookup 2 (page 17)

Enter the cable box output channel (usually 2, 3, or 4) using the number buttons, then press **SET**.

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

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, press

↑/↓ to select “Channel List,” then press ENTER.

The display lists the channels whose guide channel number is not as same as the TV channel number.

Settings - VCR Plus+ Channel List				Page2	
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 ↑.

Setting Up the Remote

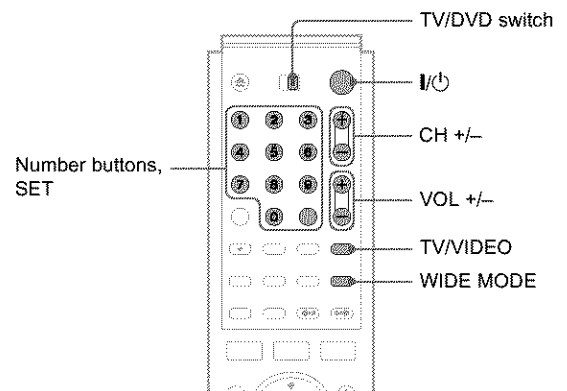
You can control your TV with the supplied remote by adjusting the remote control’s signal.

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

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.

Controlling TVs with the remote



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

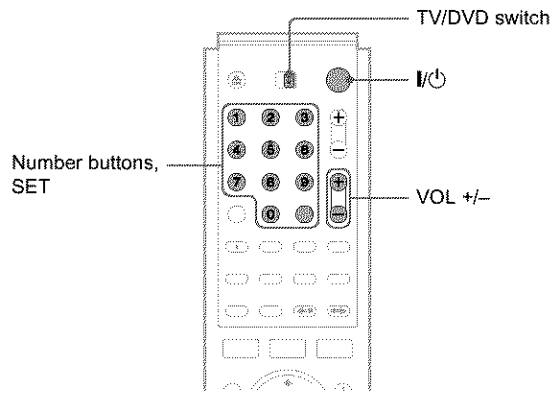
I/O	Turns your TV on or off
VOL +/-	Adjusts the volume of your TV
CH +/-	Selects the channel on your TV
WIDE MODE	Switches to or from the wide mode of a Sony wide-screen TV
TV/VIDEO	Switches your TV’s input source
Number buttons and SET	Selects the channel on your TV

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
Daytron	12
Emerson	03, 04, 14
Fisher	11
General Electric	06, 10
Gold Star	03, 04, 17
Hitachi	02, 03
J.C.Penney	04, 12
JVC	09
KMC	03
Magnavox	03, 08, 12
Marantz	04, 13
MGA/Mitsubishi	04, 12, 13, 17
NEC	04, 12
Panasonic	06, 19
Philco	03, 04
Philips	08, 21
Pioneer	16
Portland	03
Proscan	10
Quasar	06, 18
Radio Shack	05, 14
RCA	04, 10
Sampo	12
Samsung	03, 12, 20
Sanyo	11, 14
Scott	12
Sears	07, 10, 11
Sharp	03, 05, 18
Sylvania	08, 12
Teknika	03, 08, 14
Toshiba	07
Wards	03, 04, 12
Yorx	12
Zenith	15

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



- 1** Slide the TV/DVD switch to DVD.
- 2** Hold down I/⏻, and enter the manufacturer code (see the table below) for your AV amplifier (receiver) using the number buttons.
- 3** 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)

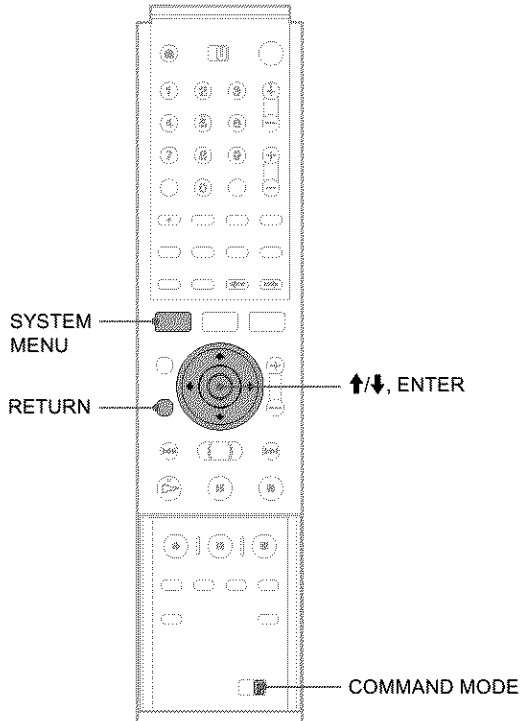
If more than one code number is listed, try entering them one at a time until you find the one that works with your AV amplifier (receiver).

Manufacturer	Code number
Sony	80, 88, 89, 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

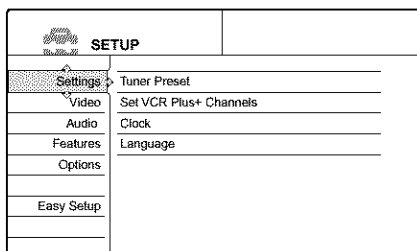
If the supplied remote interferes with your other Sony DVD recorder or player, set the command mode number for this recorder and the supplied remote to one that differs from the other Sony DVD recorder or player.

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

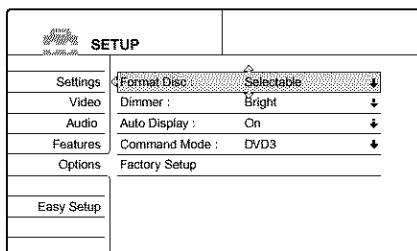


- 1 Press SYSTEM MENU.**
The System Menu appears.

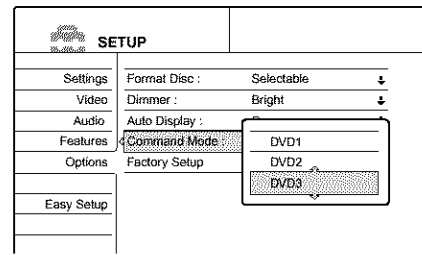
- 2 Press ↑/↓ to select “SETUP,” then press ENTER.**



- 3 Press ↑/↓ to select “Options,” then press ENTER.**



- 4 Press ↑/↓ to select “Command Mode,” then press ENTER.**



- 5 Press ↑/↓ to select the Command mode (DVD1, DVD2, or DVD3), then 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.

Connecting a VCR or Similar Recording Device to the LINE Jacks

You can use this recorder as the source player or as the recording deck.

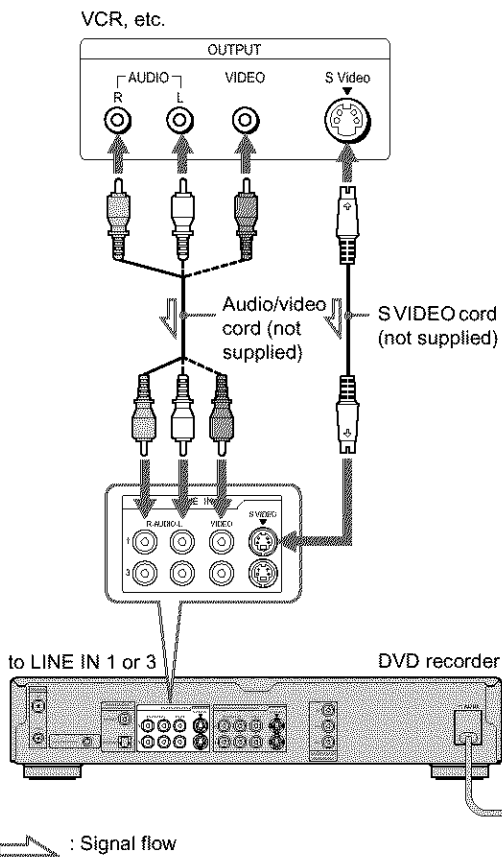
After disconnecting the recorder's power cord from an AC outlet, connect a VCR or similar recording device to the LINE IN jacks of this recorder.

Use the DV IN jack on the front panel if the equipment has a DV output jack (i.LINK jack) (page 75).

See also the instruction manual supplied with the connected equipment.

How to connect to record on this recorder

Connect a VCR or similar recording device to the LINE IN jacks of this recorder. See "Recording from connected equipment" on page 88.



Hint

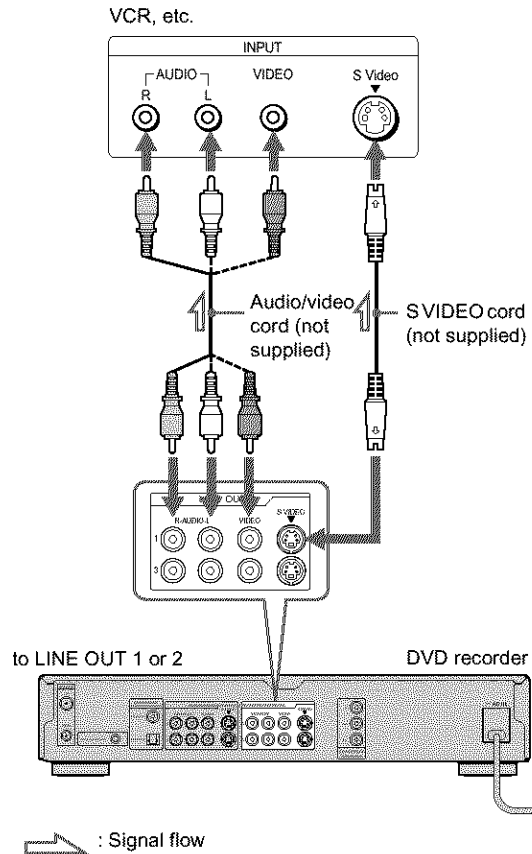
You can also use the LINE 2 IN jacks on the front panel of the recorder (page 88).

Notes

- Do not connect the yellow LINE IN (VIDEO) jack when using an S VIDEO cord (not supplied).
- Pictures containing copy protection signals that prohibit any copying cannot be recorded.

How to connect to record on other equipment

Connect a VCR or similar recording device to the LINE OUT jacks of this recorder.



Notes

- If you pass the recorder signals via the VCR, you may not receive a clear image on the TV screen.

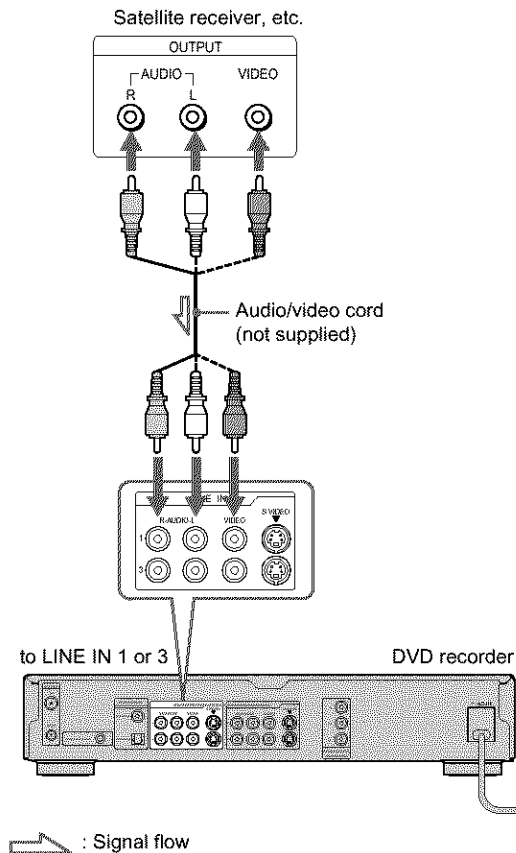


- Do not connect the yellow LINE IN (VIDEO) jack when using an S VIDEO cord (not supplied).

Connecting to a Satellite Receiver or a Cable Box

Connect a satellite receiver, digital cable box, or a cable box to this recorder using the LINE IN 1/3 jacks. Disconnect the recorder's AC power cord from an AC outlet when connecting the box.

To record on this recorder, *see page 88*. To use the Synchro Rec function, *see below*.



If you want to use the Synchro Rec function

Connect a satellite receiver to LINE IN 1 jacks of this recorder. *See "Recording from External Equipment with a Timer (Synchro Rec)" on page 47.*

Refer to your satellite receiver's instructions for more information.

Notes

- Synchro-Recording does not work with some boxes. For details, refer to the box's operating instructions.
- When connecting the LINE IN jacks to the cable box, be sure to also connect the recorder's antenna to the cable box.

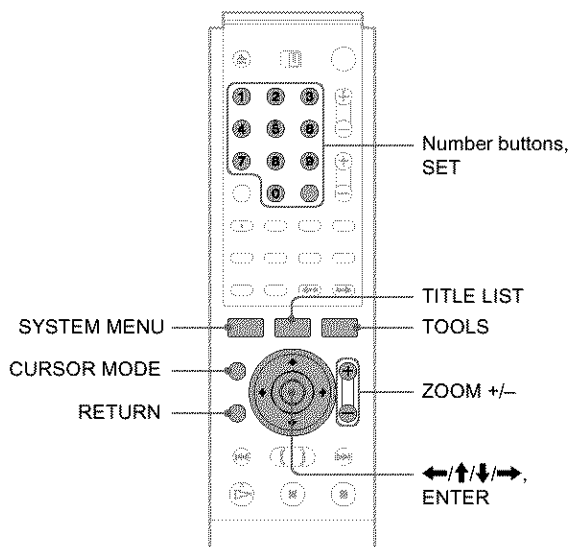
Operating the Recorder

The recorder's overall operation is simple. Generally, most operations can be performed by pressing only **←/↑/↓/→**, and **ENTER**. Once you know the common procedure, you will find the recorder easy to operate.

- *Guide to Displays*page 31
- *How to Use the Displays*page 33
- *How to Enter Characters*page 34

Guide to Displays

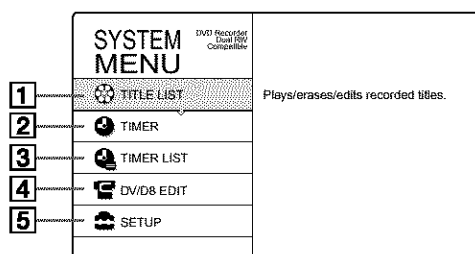
The recorder uses the following four types of displays for most operations: System Menu, Title List, TOOLS, and Sub-menu. It also has a Disc Information display for checking the status of the inserted disc, and an on-screen keyboard that enables you to label a title or disc.



Operating the Recorder

System Menu

The System Menu appears when you press **SYSTEM MENU**, and provides entries to all of the recorder's main functions.



- 1** **TITLE LIST (page 53, 64):**
Turns on the Title List menu, which shows recorded titles on the disc.
- 2** **TIMER (page 40):**
Allows you to set a new timer recording setting.
- 3** **TIMER LIST (page 42):**
Turns on the Timer List menu, which allows you to check, change, or cancel timer settings.
- 4** **DV/D8 EDIT (page 79):**
Activates the DV Edit function, which allows you to record and edit the contents of a DV/Digital8 format tape.
- 5** **SETUP (page 91):**
Turns on the Setup Display, which allows you to set up the recorder to suit your preferences.

→continued

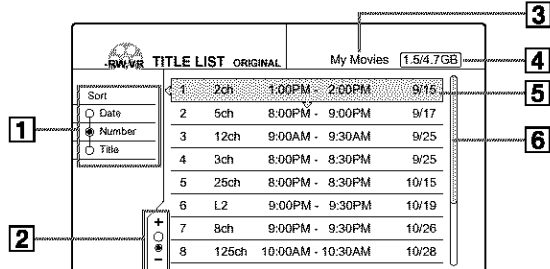
Title List

The recorder uses list displays for some operations. The most frequently used is the Title List menu.

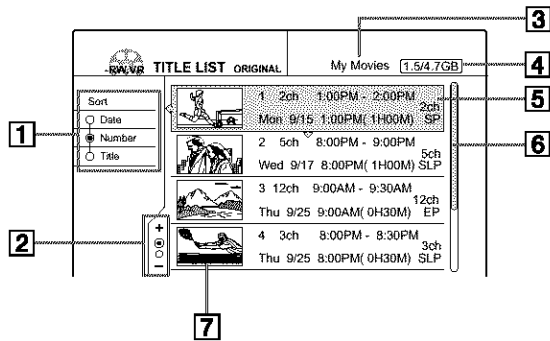
The Title List menu appears when you press TITLE LIST or when you select "TITLE LIST" from the System Menu, and displays all of the titles on the disc.

To show the list in greater details (zoom), press ZOOM+. To return to the previous display, press ZOOM-.

Standard Title List



"Zoomed" Title List



- 1 Sort buttons (page 54):**
Sorts the title order.
- 2 Zooming indicator (page 54):**
Shows the current zoom status.
- 3 Disc name (page 72)**
- 4 Disc space (remainder/total)**
- 5 Title information (page 54):**
Displays the title number, title name, and recording date.
- 6 Scroll bar:**
Appears when all the titles do not fit on the list. To view the hidden titles, press \uparrow/\downarrow .
- 7 Title's thumbnail picture (page 54)**

Notes

- The letters that cannot be displayed are replaced with "*".
- The Title List does not appear when you play DVD VIDEOS, CDs, CD-Rs, or CD-RWs.
- The Title List may not appear for discs created on other DVD recorders.
- On this model, 1 GB is equivalent to 1 billion bytes.

About the types of Title List menus

The appearance of the Title List menu differs according to the disc type and recording format.

◆For DVD+RWs, DVD-Rs, DVD-RWs (Video mode):

The Title List menu appears and displays the titles on the disc.

◆For DVD-RWs (VR mode):

The Title List (Original) or Title List (Playlist) menu appears and displays the Original or Playlist titles on the disc. The "PLAYLIST" indicator lights up on the front panel display when the Title List (Playlist) menu is selected.

To switch the Title List menu for a DVD-RW (VR mode)

The recorder displays either the Original or Playlist Title List. Follow the steps below.

- 1 Press TITLE LIST.**
The Title List menu appears.
- 2 Press TOOLS.**
The TOOLS menu appears.
- 3 Press \uparrow/\downarrow to select either "Original" or "Playlist," whichever is not displayed, then press ENTER.**
The display switches to the selected Title List menu.

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.

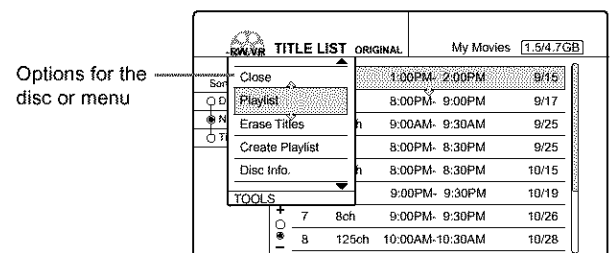
Notes

- When you turn off the list display, the Page mode is canceled.
- When all the titles on the disc fit on a single page, you cannot select the Page mode.

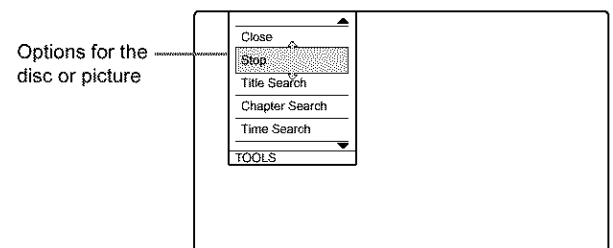
TOOLS

The TOOLS menu appears when you press TOOLS, and displays options applicable to the entire disc or recorder.

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



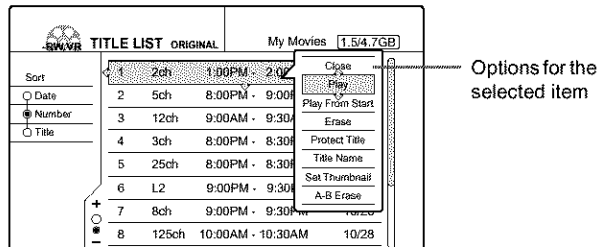
Example 2: When you press TOOLS while a DVD is playing.



Sub-menu

The sub-menu appears when you select an item from the displayed list menu and press ENTER. The sub-menu displays options applicable only to the selected item.

Example: The Title List menu



How to Use the Displays

Use the displays in the following way. The procedure is common to many of the operations.

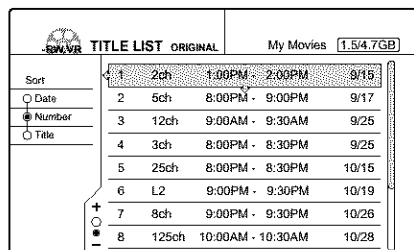
1 Press SYSTEM MENU.

The System Menu appears with entries to the main functions.

2 Press \uparrow/\downarrow to select a function, then press ENTER.

The display for the selected function appears.

Example: When "TITLE LIST" is selected.



◆ Using the TOOLS menu

Use the TOOLS menu to display options for the entire disc.

① Press TOOLS.

The TOOLS menu appears.

② Press \uparrow/\downarrow to select the option, then press ENTER.

◆ Using the sub-menu

The sub-menu displays options for a specific title.

① Press \uparrow/\downarrow to select the title on the list, then press ENTER.

The sub-menu appears.

② Press \uparrow/\downarrow to select the option, then press ENTER.

3 Press RETURN repeatedly to turn off the list display.

To return to the previous display

Press RETURN.

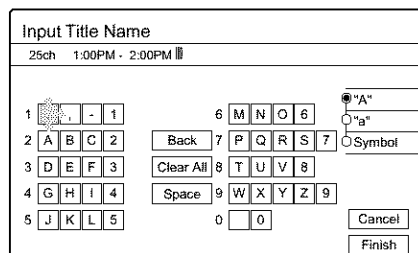
How to Enter Characters

You can label a title, disc, or program by entering characters. You can enter up to 64 characters for a title/disc/program 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 **←/↑/↓/→** to move the cursor to the right of the screen and select “A” (upper-case), “a” (lower-case), or “Symbol,” then press **ENTER**.

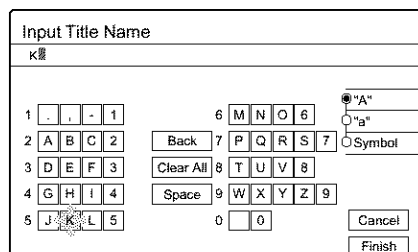
The characters of the selected type are displayed.

Example: Input Title Name



- 2** Press **←/↑/↓/→** to select a character you want to enter, then press **ENTER**.

The selected character appears at the top of the display.

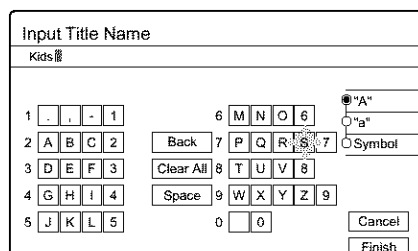


To enter a letter with an accent mark, select an accent followed by the letter.

Example: Select “ ` ” and then “a” to enter “à.”

To insert a space between the characters, select “Space.”

- 3** Repeat steps 1 and 2 to enter all the characters for the name.



- ◆ To erase a character

- ① Press **←/↑/↓/→** to move the cursor to the input row.
- ② Press **←/→** to move the cursor to the right of the character you want to erase.
- ③ Press **←/↑/↓/→** to select “Back,” then press **ENTER**.

- ◆ To insert a character

- ① Press **←/↑/↓/→** to move the cursor to the input row.
- ② Press **←/→** to move the cursor to the right of the point where you want to insert a character.
- ③ Press **←/↑/↓/→** to select the character you want to insert, then press **ENTER**.

- ◆ To erase all the characters

Press **←/↑/↓/→** to select “Clear All,” then press **ENTER**.

- 4** Press **←/↑/↓/→** to select “Finish,” then 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 the character you want to enter.

Example:





















Press the number 3 button once to enter “D.”

Press the number 3 button three times to enter “F.”

- 2** Select the next character, or press **SET**.
- 3** Repeat steps 1 and 2 to enter all of the characters for the name.
- 4** Press **←/↑/↓/→** to select “Finish,” then press **ENTER**.

Recording/ Timer Recording

This section covers the basics of DVD recording, and the available methods for setting the timer.

- *Before Recording*page 35
- *Recording TV programs*   
 page 38
- *Timer Recording*    
page 40
- *Adjusting the Recording Picture Quality and Size*
    page 46
- *Recording from External Equipment with a Timer (Synchro Rec)*    
page 47




Before Recording

This recorder can record on various discs. Before you record, read the following and select the disc type according to your needs.

Recordable discs

This recorder can record on the following discs.

◆ Disc type

DVD-RW* ¹ Ver. 1.1 Ver. 1.1 with CPRM* ²	
DVD+RW* ¹	
DVD-R* ¹ Ver. 2.0	

*¹ "DVD-RW," "DVD+RW," and "DVD-R" are trademarks.

*² CPRM (Content Protection for Recordable Media) is a coding technology that protects copyrights for images.

DVD-RWs and DVD+RWs are rewritable. DVD-Rs are non-rewritable.

The recorder cannot record on the following discs:

- 8 cm discs
- DVD+R
- DVD-RW (Ver 1.0)
- DVD-RAM
- CD-R/CD-RW

Notes

- The following type of high-speed discs can be used for recording: up to 2×-speed DVD-RWs (Revision 1.0), up to 4×-speed DVD-Rs (Revision 1.0), or up to 4×-speed DVD+RWs. Note that high-speed discs will not record at higher speed. You cannot record on the disc if it is not 1×-speed compatible.
- Use a disc with CPRM to record Copy-Once TV programs (page 36).
- It is recommended that you use discs with "For Video" printed on their packing.
- You cannot add new recordings to DVD-Rs and DVD-RWs (Video mode) that contain recordings made on other DVD recorders.
- In some cases, you may not be able to add new recordings to DVD+RWs that contain recordings made on other DVD recorders. 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 will be erased.

→continued

About recording formats

When you insert an unused disc, the recorder automatically starts formatting. Since available functions differ depending on the disc type, select the disc that best suits your needs using the chart below.

You can preset the format for unused DVD-RWs in Options Setup. When "Format Disc" is set to either "VR" or "Video" (page 99), the recorder starts formatting in the selected mode without asking for confirmation. Select "Selectable" if you want to select the mode each time you insert an unused DVD-RW.

Differences between the disc types

See pages in parentheses for details.

Disc type	Characteristics
-RW VIDEO +RW -R	<ul style="list-style-type: none"> - Automatically creates chapters at specified intervals (page 97) - Simple editing (erasing titles/changing title name) (page 64)
-RW VR	<ul style="list-style-type: none"> - Creates chapters manually or automatically (page 67) - Various editing options using a created Playlist (page 67) - Records Copy-Once programs provided that the disc has CPRM

Notes

- To play a recorded disc on other DVD equipment, you need to finalize the disc. For details on finalizing, see page 73.
- You cannot mix the two formats on one DVD-RW. To change the disc's format, reformat the disc (page 74). Note that the disc's contents will be erased after reformatting.

Recording mode

While the recorder is stopped, you can select one of six recording modes by pressing REC MODE repeatedly for the desired recording time and picture quality. The picture quality generally improves as the recording time decreases.

Recording mode	Recording time (minute)
HQ	60
HSP	90
SP (Standard mode)	120
LP	180
EP	240
SLP	360

Notes

- The recording times are an estimate and actual times may differ.
- 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

Unrecordable pictures

Pictures with copy protection cannot be recorded on this recorder.

When the recorder receives a copy guard signal while recording, the recorder stops recording and a message appears on your TV screen.

About pictures with Copy Control Signals

Broadcasts that contain Copy Control Signals may have one of the following three signal types, Copy-Free, Copy-Once, and Copy-Never. This recorder limits the recording according to copy protection signal as shown below.

If you want to record a Copy-Once program, use a DVD-RW with CPRM in VR mode.

◆ Available recording options

	Copy-Free	Copy-Once	Copy-Never
DVD-RW (Ver.1.1)	○	---	---
DVD-RW (Ver.1.1 with CPRM)			
VR mode	○	○*	---
Video mode	○	---	---
DVD+RW	○	---	---
DVD-R (Ver.2.0)	○	---	---

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

Checking the available disc space (Disc Info.)

When recording on a used disc, make sure that there is enough disc space for recording. With DVD-RWs or DVD+RWs, you can free up disc space by erasing titles.

1 Press TOOLS while the disc is in the recorder.

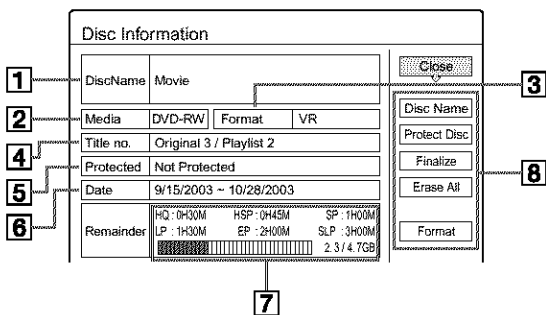
The TOOLS menu appears.

2 Press \uparrow/\downarrow to select "Disc Info.," then press ENTER.

The Disc Information display appears.

Items in the display differ depending on the disc type or recording format. Note that the remaining disc space indicator is an estimate and actual available space may differ.

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 when the oldest and the most recent titles are recorded

7 Continuous Rem. Time/Remainder:

- The longest continuous recording time in each of the recording modes (approximate)
- Disc space bar (approximate)
- Remaining disc space/total disc space (approximate)

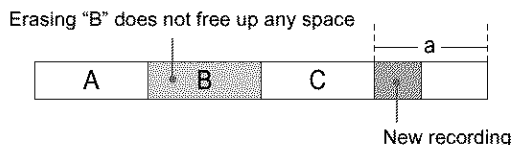
8 Disc setting buttons

- Disc Name: Labels the disc (page 72)
- Protect Disc: Protects the disc (DVD-RW in VR mode only) (page 72)
- Finalize: Finalizes the disc/Creates a DVD menu (page 73)
- Unfinalize: Unfinalizes the disc if it has already been finalized (DVD-RW in VR mode only) (page 73)
- Erase All: Erases all titles on the disc (page 73)
- Format: Reformats the disc (page 74)

-R

◆How programs are recorded on a DVD-R

A new program is recorded on the last space [a] only. Check that the remaining disc space is large enough for the recording.

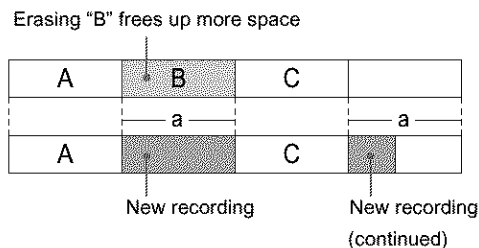


You cannot free up disc space on a DVD-R. Erasing a title will only hide the title name in the Title List menu. The erased titles will still take up space on the disc.

-RW VR

◆How programs are recorded on a DVD-RW (VR mode)

A program is recorded on the free disc space [a]. Check that the total remaining disc space is large enough for recording.



◆To free up disc space

You can free up disc space by erasing titles. The original title used for a Playlist cannot be erased.

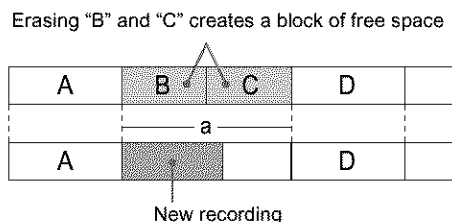
To erase a title, *see page 65*.

To erase multiple titles, *see page 65*.

-RW VIDEO +RW

◆How programs are recorded on a DVD-RW (Video mode) or DVD+RW

The recorder searches for the largest block of space [a] and records there. Check that there is a continuous free block large enough for the recording. If not, the recording will stop.



◆To check or free up disc space

For DVD-RWs (Video mode) and DVD+RWs only, you can check free disc space and title location, and also erase titles using the Disc Map display (*see below*).

🔑 Hint

You can erase all of the disc's titles (other than protected titles) at once (page 73).

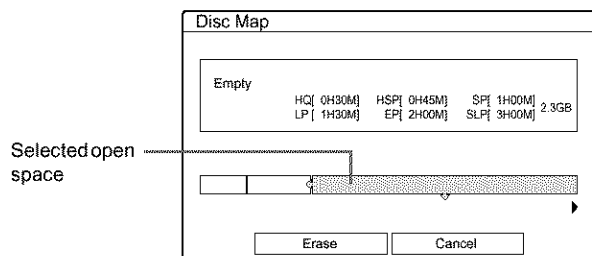
Notes

- When you erase titles, the title order may change depending on the disc type or format.
- After finalizing, you cannot record further on a DVD-RW (Video mode) or DVD-R.

To free up disc space using the Disc Map display (DVD-RWs in Video mode, DVD+RWs only)

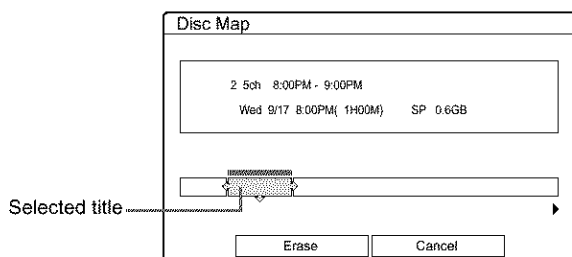
The Disc Map display in the TOOLS menu allows you to check the disc status and erase titles on the disc.

- 1 Press **TITLE LIST** while the disc is in the recorder.
- 2 Press **TOOLS**.
- 3 Press **↑/↓** to select “Disc Map” from the **TOOLS** menu, then press **ENTER**.
The Disc Map display appears.
 - ◆ **To check free disc space**
Press **←/→** to select an open space.
The remaining space and the longest recording time in each of the recording modes appears.



- ◆ **To free up disc space by erasing a title using the Disc Map**

- 1 Press **←/→** to select the title you want to erase, then press **ENTER**.
The title is selected.



To cancel the selection, press **ENTER** again. Repeat step 1 to erase multiple titles.

- 2 Press **↓** to select “Erase,” then press **ENTER**.
The display asks for confirmation.
- 3 Press **←/→** to select “OK.”
All of the selected titles are erased, freeing up disc space. If you want to change your selection, select “Change.”
- 4 Press **RETURN** repeatedly to turn off the **Title List** menu.

Note

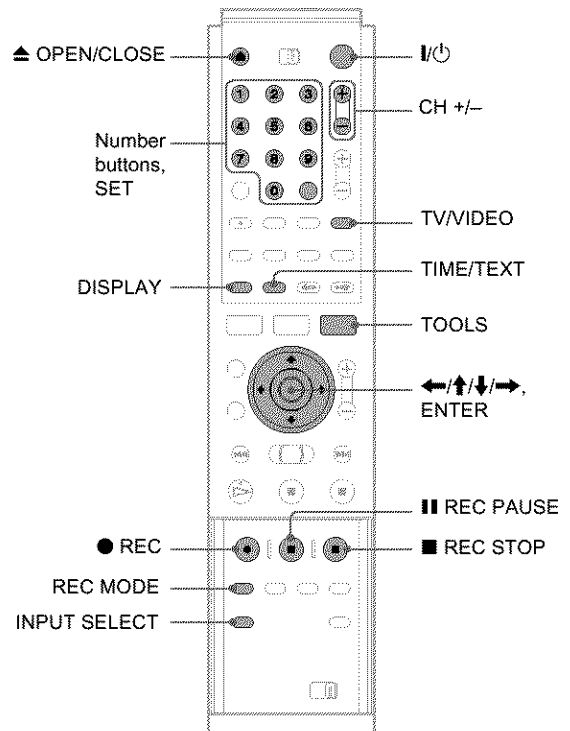
You cannot erase a title during playback or recording.

Recording TV programs

-RW VR **-RW VIDEO** **+RW** **-R**

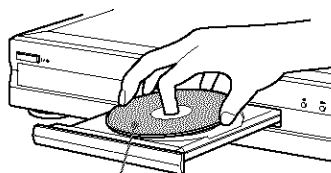
Before you start...

- Check that the disc has enough available space for the recording (page 37).
- Adjust the recording picture quality and picture size if necessary (page 46).



- 1 Press **I/⏻**.
The recorder turns on and the power indicator on the front panel lights up in green.
- 2 Turn on the TV, and switch the input selector on your TV so that the signal from the recorder appears on the TV screen.
 - ◆ **When using an amplifier (receiver)**
Turn on the amplifier (receiver) and select the appropriate channel so that you can hear sound from the recorder.

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

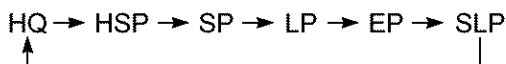


With the recording side facing down

- 4** Press **▲ OPEN/CLOSE** to close the disc tray. Wait until “LOAD” disappears from the front panel display. If you use an unused DVD, formatting starts automatically. When using an unused DVD-RW, select the recording format, VR or Video.

- 5** Press **CH +/-** to select the channel or input source you want to record.

- 6** Press **REC MODE** repeatedly to select the recording mode. Each time you press the button, the display changes on the TV screen as follows:



For more details of the recording mode, see page 36.

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

To stop recording

Press **■ REC STOP**. Note that it may take a few seconds for recording to stop.

To pause recording

Press **■ REC PAUSE**. To restart recording, press the button again.

To watch another TV program while recording

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

💡 Hints

- You can also start and stop recording using the TOOLS menu. Press TOOLS and select “Record” or “Rec Stop,” then press ENTER.
- You can stop recording from the Title List menu as well. Select the title you are currently recording and press ENTER. Then select “Rec Stop” from the sub-menu.
- 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.
- To select a channel, you can also use the number buttons and SET button in step 5 above.
- If you record from equipment connected to the recorder’s input jack, you can also use the INPUT SELECT button to select “L1,” “L2,” “L3,” or “DV” in step 5. For details, see “Recording from connected equipment” (page 88).
- You can also select the recording mode using the TOOLS menu (page 46).

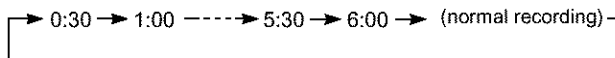
Notes

- After pressing **● REC**, it may take a short while to start recording.
- While recording or during recording pause, you cannot change the recording mode.
- If there is a power failure, the program you are recording may be erased.
- When you use Hookup 2 (page 17), you cannot watch a cable TV program while recording another cable TV program.

Using the Quick Timer function

You can set the recorder to record in 30 minute increments by pressing just the **● REC** button.

Press **● REC** repeatedly to set the duration time. 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.

Recording a stereo program and SAP

The recorder automatically receives and records a stereo program and SAP.

◆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 95). 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 95).

Checking the disc status while recording

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

- 1 Press **DISPLAY** twice during recording. The recording information appears.



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

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

Creating chapters in a title

The recorder can 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 97).

Hint

You can make chapters manually when playing DVD-RWs (VR mode). For details, see page 67.

Notes

- If "Auto Chapter" is set to "Off" in Features Setup, no chapters are automatically created.
- When no more chapter marks can be added, you may not be able to make additional recordings or edit the disc.

Timer Recording

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

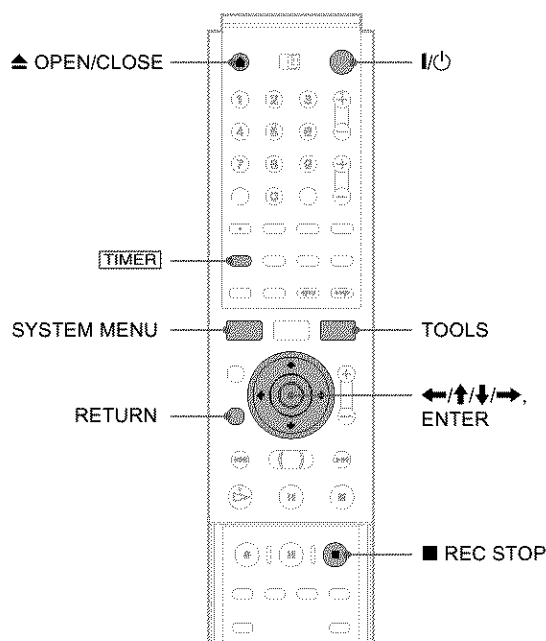
There are two setting methods: the manual setting and VCR Plus+ setting.

- Standard: Set the date, time, and channel of the program manually.
- VCR Plus+: Enter the PlusCode number designated for each TV program (page 44).

Before you start...

- Check that the disc has enough available space for the recording (page 37).
- Adjust the recording picture quality and picture size if necessary (page 46).

Setting the timer manually (Standard)

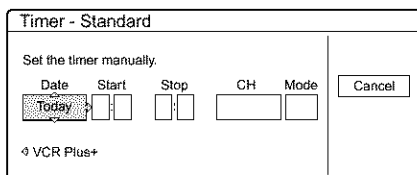


- 1 Press **I/O**.
- 2 Turn on the TV, and switch the input selector on your TV so that the signal from the recorder appears on the TV screen.
 - ◆ When using an amplifier (receiver) Turn on the amplifier (receiver) and select the appropriate channel so that you can hear sound from the recorder.
- 3 Press **▲ OPEN/CLOSE**, and place a recordable disc on the disc tray.

- 4** Press **▲ OPEN/CLOSE** to close the disc tray. Wait until “LOAD” disappears from the front panel display. If you use an unused DVD, formatting starts automatically. When using an unused DVD-RW, select the recording format, VR or Video.

5 Press **TIMER**.

The Timer programming (Standard) menu appears.



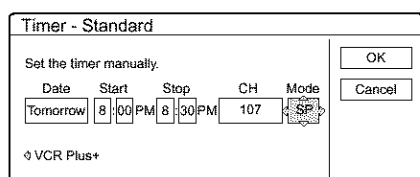
If the Timer programming (VCR Plus+) menu appears, press **←** to switch the display.

6 Set the following items using **←/↑/↓/→**.

- ① Press **↑/↓** to set the date, then press **→**. Each time you press **↑/↓**, 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

- ② Press **↑/↓** to set the start time, then press **→**.
③ Press **↑/↓** to set the stop time, then press **→**.
④ Press **↑/↓** to set the channel, then press **→**. When you set the timer for recording from connected equipment, select “Line1,” “Line2,” or “Line3.”
⑤ Press **↑/↓** to select the recording mode (HQ, HSP, SP, LP, EP, or SLP), then press **→**.



◆ **If you make a mistake**

Press **←/→** to select the item you want to change.

◆ **To exit without saving the current setting**

Press **←/↑/↓/→** to select “Cancel,” then press **ENTER**.

7 Press **←/↑/↓/→** to select “OK,” then press **ENTER**.

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

8 Press **RETURN** to turn off the Timer List, or press **TIMER** and repeat from step **5** to enter additional timer settings.

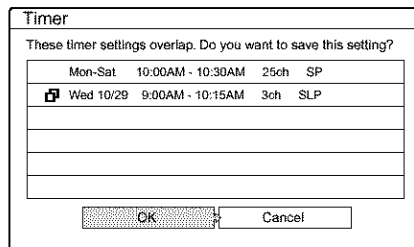
Unlike a VCR, there is no need to turn off the recorder before the timer recording starts.

To stop recording during timer recording

Press **■ REC STOP**.

If the timer settings overlap

Overlapped timer settings are shown as follows.



To store the setting, press **←/→** to select “OK,” then press **ENTER**. The programs are recorded in order of priority (page 43). To cancel or change the setting, select “Cancel.”

To confirm, change, or cancel timer recording

See “Checking/changing/canceling timer settings (Timer List)” (page 42).

Hints

- For recording over the next day, leave the starting date setting as it is, and enter the ending time in the setting. The date will automatically change to the next day.
- You can also display the timer programming menu by:
 - selecting “TIMER” from the System Menu.
 - selecting “Set Timer” from the TOOLS menu while the Timer List menu is displayed.
- You can also use the recorder even when the recorder stands by for recording. To remind you of the timer setting, a message appears on your TV screen five minutes before the timer recording starts.

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).
- Check that the clock is correctly set before setting the timer recording. If not, the timer recording cannot be made. To record a satellite program, turn on the satellite receiver and select the satellite program you want to record. Leave the satellite receiver turned on until the recorder finishes recording. If you connect equipment with a timer function, you can use the Synchro Rec function (page 47).

Rec Mode Adjust

If there is not enough available disc space for the recording, the recorder automatically selects the recording mode to enable the program to be recorded. This function is normally set to on.

◆ To cancel the function

- Press **TOOLS** while the **Timer List** is displayed.
- Press **↑/↓** to select “Rec Mode Adjust,” then press **ENTER**.
- Press **←/→** to select “Off,” then press **ENTER**.

Note

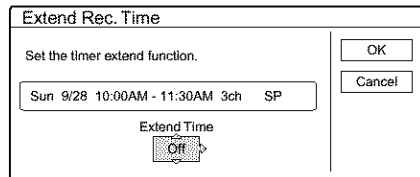
This function only works with a timer recording. It does not function with Quick Timer or Synchro Rec.

→ continued

To extend the recording duration time

You can extend the recording duration while recording.

- 1 Press **TOOLS** during recording.
- 2 Press **↑/↓** to select “Extend Rec. Time,” then press **ENTER**.
The following display appears.



- 3 Press **↑/↓** to select the duration time, then press **ENTER**.
You can set the duration in increments of 10 minutes, up to 60 minutes.
- 4 Press **←/↑/↓/→** to select “OK,” then press **ENTER**.

Hint

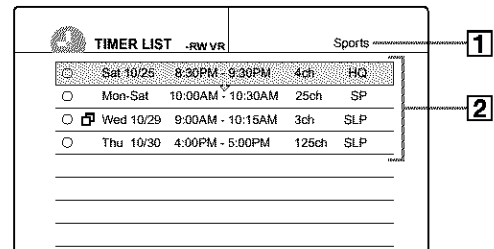
You can also extend the recording duration time using “Extend Rec” in the sub-menu of the Timer List.

Checking/changing/canceling timer settings (Timer List)



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

- 1 Press **SYSTEM MENU**.
The System Menu appears.
- 2 Press **↑/↓** to select “TIMER LIST,” then press **ENTER**.
The Timer List menu appears.

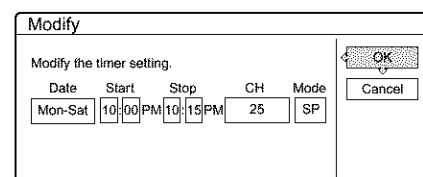


- 1 **Disc name**
To enter a disc name, see “Labeling a disc (Disc Name)” (page 72).
- 2 **Timer information:**
Displays the recording date, time, recording mode, etc.
 - indicates the overlapped setting.
 - (red) indicates the setting currently being recorded.
 - (grey) indicates that the setting cannot be recorded in the selected recording mode.

- 3 Press **↑/↓** to select the setting you want to check/change/cancel, then press **ENTER**.
The sub-menu appears.

- 4 Press **↑/↓** to select one of the following items.
 - Modify
 - Erase
 - Check Overlap
 - ◆ To modify the setting

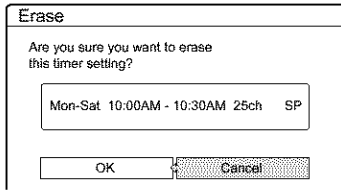
- 1 Select “Modify,” then press **ENTER**.
The display for modifying appears.



- 2 Press **←/↑/↓/→** to select the item and change the setting.
To undo the change, press **←/↑/↓/→** to select “Cancel,” then press **ENTER** or **RETURN**.
To change another setting, repeat step 2.
- 3 Press **←/↑/↓/→** to select “OK,” then press **ENTER**.

◆ To erase the setting

- 1 Select "Erase," then press ENTER.
The display asks for confirmation.

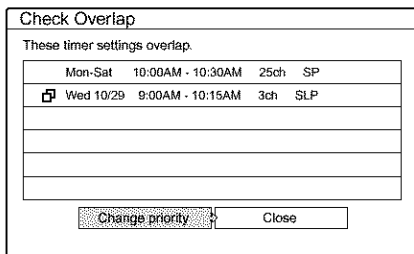


If you do not want to erase the setting, select "Cancel," then press ENTER or RETURN.

- 2 Press \leftarrow/\rightarrow to select "OK," then press ENTER.

◆ To check for overlapped settings

- 1 Select "Check Overlap," then press ENTER.
The display for confirming overlapped settings appears.
The timer setting set most recently is listed at the top and has priority. You may not be able to record the program that has low priority.



To change a priority, press \leftarrow/\rightarrow to select "Change priority." For details, see "Changing the priority of overlapped settings" below.

- 2 Press \leftarrow/\rightarrow to select "Close."
To change or cancel the setting, press RETURN to return to the Timer List menu, and repeat steps 3 and 4 above.

5 Press RETURN to turn off the Timer List.

💡 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 42).

Note

Even if the timer is set for the same program daily or weekly, the timer recording cannot be made if it overlaps with the program that has priority. A \square mark will appear next to the overlapped setting in the Timer List. Check the priority order of the settings.

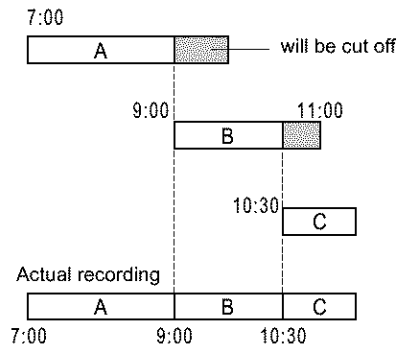
Changing the priority of overlapped settings

The recorder records the programs according to priority if the timer settings overlap. The timer setting set last has priority. If the timer settings overlap, the program that has priority will be recorded. A timer recording of lower priority will be canceled, start from the middle, or stop on the way. Check the overlapped timer settings and change the priority if necessary.

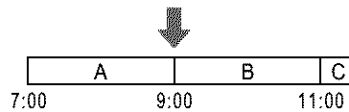
When the timer settings overlap

If the timer is set using the manual or VCR Plus+ setting, 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 priority to setting B over setting C, program B will be entirely recorded and program C is recorded only after program B has finished.

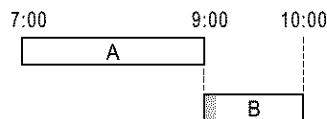


💡 Hint

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

Note

If the end time of one recording and the start time of another are the same, the beginning or end of a program of lower priority may be cut. Example: you made the timer setting A after B

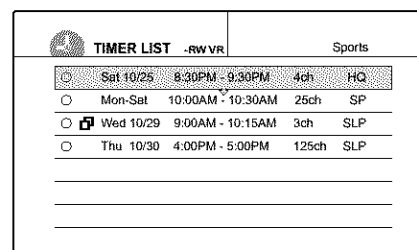


1 Press SYSTEM MENU.

The System Menu appears.

2 Press \uparrow/\downarrow to select "TIMER LIST," then press ENTER.

The Timer List menu appears.



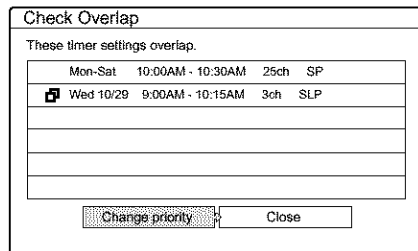
→continued

- 3** Press **↑/↓** to select the setting for which you want to change a priority order, then press **ENTER**.

The sub-menu appears.

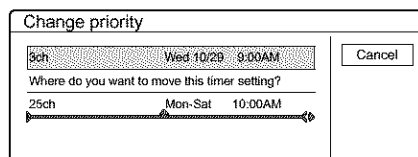
- 4** Press **↑/↓** to select “Check Overlap,” then press **ENTER**.

The display for confirming overlapped settings appears.



- 5** Press **←/→** to select “Change priority,” then press **ENTER**.

The display for changing priority appears.



- 6** Press **↑/↓** to move the timer setting where you want, then press **ENTER**.

The program moves to its new location in the list. A program higher up in the list has higher priority. To return to the Timer List, select “Cancel.”

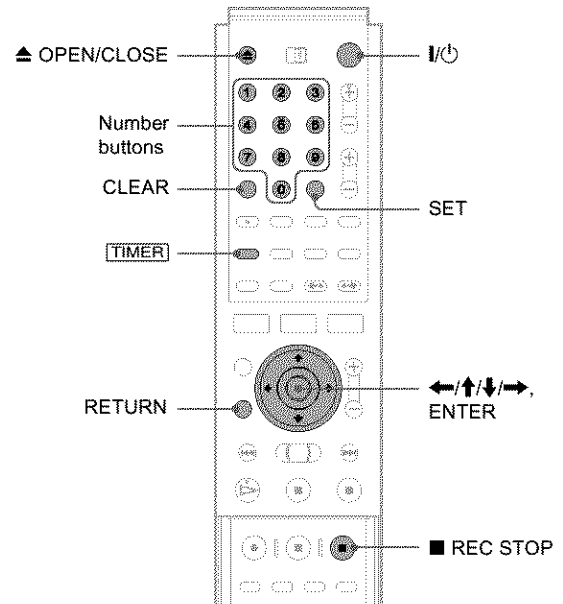
- 7** Press **RETURN** to turn off the Timer List.

Recording TV programs using the VCR Plus+ system

-RW VR **-RW VIDEO** **+RW** **-R**

The VCR Plus+ system is a feature that simplifies setting timer recordings. Just enter the PlusCode number listed in the TV program guide. The date, time, and channel of that program are set automatically.

Check that the TV and guide channels are correctly set in “Set VCR Plus+ Channels” in “Settings” (page 93).



- 1** Press **I/O**.

- 2** Turn on the TV, and switch the input selector on your TV so that the signal from the recorder appears on the TV screen.

◆ **When using an amplifier (receiver)**

Turn on the amplifier (receiver) and select the appropriate channel so that you can hear sound from the recorder.

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

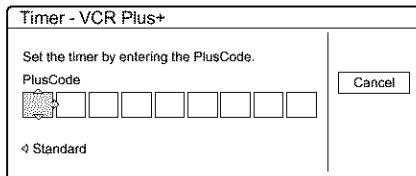
- 4** Press **▲ OPEN/CLOSE** to close the disc tray. Wait until “LOAD” disappears from the front panel display.

If you use an unused DVD, formatting starts automatically.

When using an unused DVD-RW, select the recording format, VR or Video.

5 Press **TIMER.**

The Timer programming (VCR Plus+) menu appears.



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

6 Press the number buttons to enter the PlusCode number, then press SET.**◆ If you make a mistake**

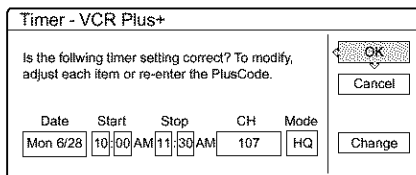
Press CLEAR and re-enter the correct number.

◆ To cancel the setting

Press **←/↑/↓/→** to select “Cancel,” then press ENTER.

7 Press **←/↑/↓/→ to select “OK,” then press ENTER.**

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

**◆ If you want to change the setting**

① Press **←/→** to select the item you want to change.

② Press **↑/↓** to change the setting.

To cancel the setting, select “Cancel.”

To re-enter the PlusCode number, select “Change.”

8 Press **←/↑/↓/→ to select “OK,” then press ENTER.**

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

9 Press RETURN to turn off the display.

To record from a decoder or other source, leave the connected equipment turned on.

To stop recording during timer recording

Press **■ REC STOP**.

If the timer settings overlap

See page 41.

To confirm, change, or cancel timer recording

See “Checking/changing/canceling timer settings (Timer List)” (page 42).

Hints

- The Rec Mode Adjust function also works with this timer setting method (page 41).
- You can extend the recording duration time during recording (page 42).
- You can also display the timer programming menu by:
 - selecting “TIMER” from the System Menu.
 - selecting “Set Timer” from the TOOLS menu while the Timer List menu is displayed.

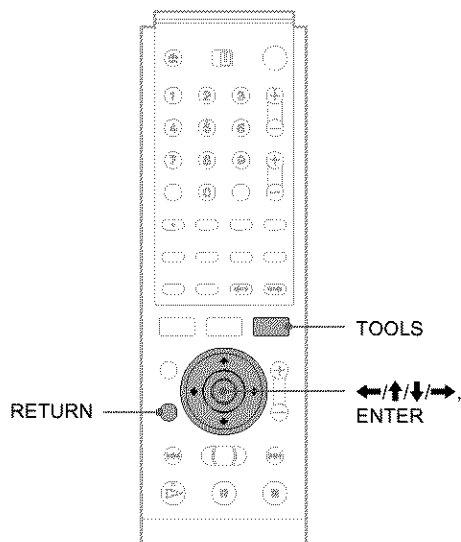
Notes

- Check the clock set before setting the timer recording. If not, the timer recording cannot be made.
- You can also use the recorder even when the recorder stands by for recording. To remind you of the timer setting, a message appears on your TV screen five minutes before the timer recording starts.

Adjusting the Recording Picture Quality and Size

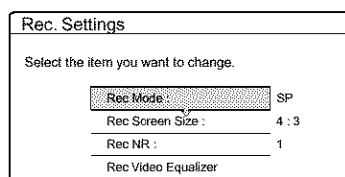
-RW VR **-RW VIDEO** **+RW** **-R**

You can adjust the recording picture quality and picture size.



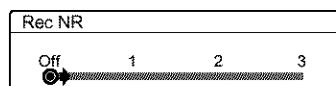
1 Press **TOOLS** before recording starts. The **TOOLS** menu appears.

2 Press **↑/↓** to select “**Rec Settings**,” then press **ENTER**. The following display appears.



3 Press **↑/↓** to select the item you want to adjust, then 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 36).

- HQ
- HSP
- SP (default)
- LP
- EP
- SLP

◆ Rec Screen 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 instance, 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, 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.

4 Adjust the setting using **←/↑/↓/→**, then press **ENTER**.

The larger the number, the greater the effect. The default setting is underlined.

Items	Settings
Rec NR	<u>Off</u> 1 ~ 3
Rec Video Equalizer	
Contrast	-3 ~ <u>0</u> ~ 3
Brightness	-3 ~ <u>0</u> ~ 3
Color	-3 ~ <u>0</u> ~ 3
Hue	-3 ~ <u>0</u> ~ 3

5 Repeat steps 3 and 4 to adjust any other items.

6 Press **RETURN** to turn off the display.

Note

The adjustments made here are for the recorder and cannot be saved for individual titles.

Recording from External Equipment with a Timer (Synchro Rec)

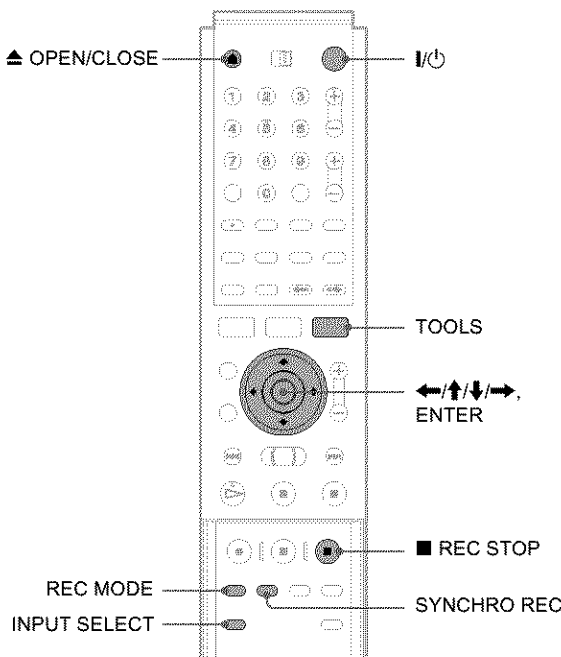
-RW VR **-RW VIDEO** **+RW** **-R**

You can set the recorder to automatically record programs from connected equipment that has a timer function (such as a satellite receiver). Connect the equipment to the LINE IN 1 jacks of the recorder (page 30).

When the connected equipment turns on, the recorder starts recording a programme from the LINE IN 1 jacks.

Before you start...

- Check that the disc has enough available space for the recording (page 37).
- Adjust the recording picture quality and picture size if necessary (page 46).



- 1 Press I/⏻.**
- 2 Turn on the TV, and switch the input selector on your TV so that the signal from the recorder appears on the TV screen.**
 - ◆ **When using an amplifier (receiver)**
Turn on the amplifier (receiver) and select the appropriate channel so that you can hear the sound from the recorder.
- 3 Press ▲ OPEN/CLOSE, and place a recordable disc on the disc tray.**

- 4 Press ▲ OPEN/CLOSE to close the disc tray.**
Wait until "LOAD" disappears from the front panel display.
If you use an unused DVD, formatting starts automatically.
When using an unused DVD-RW, select the recording format, VR or Video.

- 5 Select the line input audio when recording a program having two types of sound.**

- 1 Press INPUT SELECT to select "L1."**
- 2 Press TOOLS.**
- 3 Press ↑/↓ to select "Line Audio Input," then press ENTER.**
- 4 Press ↑/↓ to select "Main/Sub*," then press ENTER.**

* When recording a program having two types of sound, select "Main/Sub." Both sounds can be recorded. You can select either sound when playing a disc.
Select "Main/Sub" only when using a DVD-RW (VR mode).
For other discs, select "Stereo." Only stereo sound is recorded.

- 6 Press REC MODE repeatedly to select the recording mode, HQ, HSP, SP, LP, EP, or SLP.**

- 7 Set the timer on the connected equipment to the time of the program you want to record, and turn it off.**

- 8 Press SYNCHRO REC.**
The SYNCHRO REC indicator lights up on the front panel. The recorder automatically turns off and stands by for Synchro-Recording.
The recorder automatically starts recording when it receives an input signal from the connected equipment. The recorder stops recording when the connected equipment turns off.

To stop recording

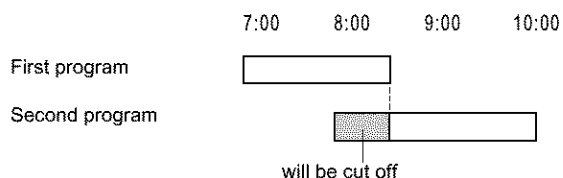
Press ■ REC STOP.

To cancel Synchro Rec

Press SYNCHRO REC or turn on the recorder before the Synchro-Recording Starts. The SYNCHRO REC indicator turns off.

If the timer settings of a Synchro-Recording and another timer recording overlap

Regardless of whether or not the program is a Synchro Rec program, the program that starts first has priority and the second program starts recording only after the first program has finished.













→continued

Notes

- The recorder starts recording only after detecting the video signal from the connected equipment. The beginning of the program may not be recorded.
- You cannot set Synchro-Recording only by pressing the SYNCHRO REC button when the recorder is turned off. Be sure to turn on the recorder first to set Synchro-Recording.
- While Synchro-Recording, other operations such as normal recording cannot be done.
- Do not turn on the recorder while it stands by for Synchro-Recording. Synchro-Recording will be canceled.
- Any program that contains a Copy-Never copy guard signal cannot be recorded. When you record a program that contains a Copy-Once signal, use a DVD-RW (Ver. 1.1 with CPRM) in VR mode for recording. For details, see *"Unrecordable pictures"* (page 36).
- When using the Synchro Rec function, do not use the VCR control function on connected equipment.
- To use the connected equipment while the recorder is standing by for Synchro-Recording, cancel Synchro-Recording by pressing SYNCHRO REC. Before timer recording starts, be sure to turn off the connected equipment, then turn on the recorder and press SYNCHRO REC to reset Synchro-Recording.
- The Synchro Rec function does not work with some satellite receivers. For details, refer to the satellite receiver's operating instructions.

Playback

This section explains the basics of playback, such as playable disc types, and describes the settings necessary for playback in general.

- *Before Playing*page 49
- *Playing Discs*  page 50
- *Selecting a Recorded Title on a Disc* page 53
- *Searching for a Title/Chapter/Track*  page 55
- *Checking the Play Information and Playing Time*  page 56
- *Selecting the Sound*  page 57
- *TV Virtual Surround Settings (TVS)* page 58
- *Changing the Angles* page 59
- *Displaying the Subtitles* page 60
- *Adjusting the Playback Picture and Sound* page 60








Before Playing

Read the following information before playing a disc.

Playable discs

This recorder can play the following discs in both the 12 cm and 8 cm sizes.


◆Disc types

DVD VIDEO*	
DVD-RW* Ver. 1.0 Ver. 1.1 Ver. 1.1 with CPRM	
DVD+RW*	
DVD-R*	
DVD+R*	
Music CD	
CD-R/CD-RW (Music CD format only)	

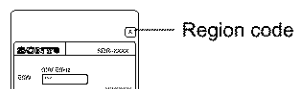
* "DVD VIDEO," "DVD-RW," "DVD+R," "DVD+RW," and "DVD-R" are trademarks.

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.



→continued

Discs that cannot be played on this recorder

The recorder cannot play the following discs:

- All CD-ROMs (including PHOTO CDs)
- CD-Rs/CD-RWs, other than those recorded in the music CD format
- Data part of CD-Extras
- VIDEO CDs
- Super VCDs
- DVD-ROMs
- DVD Audio discs
- DVD-RAMs
- HD layer on Super Audio CDs
- DVD VIDEOS with a different region code (page 49)
- A disc recorded in a color system other than NTSC, such as PAL or SECAM

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 57).
- Do not play DTS sound tracks without first connecting the recorder to an audio component having a built-in DTS decoder. The recorder outputs the DTS signal via the DIGITAL OUT (COAXIAL or OPTICAL) jack even if “DTS” is set to “Off” in the Audio Setup (page 96), and may affect your ears or cause your speakers to be damaged.

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 the Audio Setup (page 96).
- If you connect the recorder to audio equipment without a built-in DTS decoder, do not set “DTS” to “On” in the Audio Setup (page 96). A loud noise may come out from the speakers, affecting your ears or causing the speakers to be damaged.

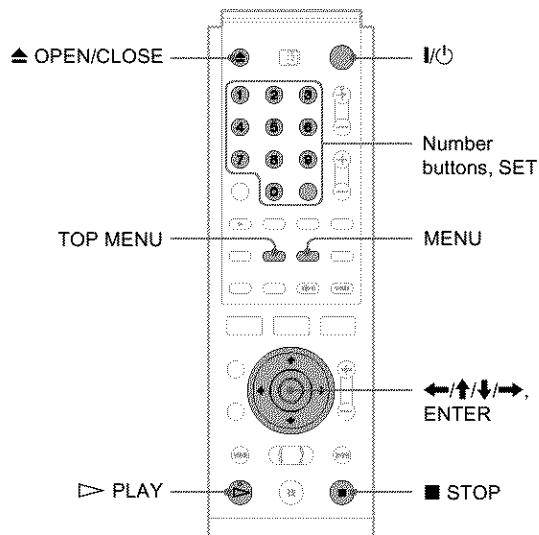
Notes

- The following type of high-speed discs can be played back on this recorder: up to 2x-speed DVD-RWs (Revision 1.0), up to 4x-speed DVD-Rs (Revision 1.0), or up to 4x-speed DVD+RWs/DVD+Rs.
- DVD-RW/-Rs, DVD+RWs/+Rs, or CD-RW/-Rs recorded on another recording device cannot be played on this recorder if they have not been correctly finalized. Some discs cannot be played due to the recording quality or physical condition of the disc, or the characteristics of the recording device and authoring software.

Playing Discs



Depending on the disc, some operations may differ, or certain restrictions may apply. Refer to the operating instructions supplied with your disc.



1 Press I/O.

The recorder turns on and the power indicator lights up in green.

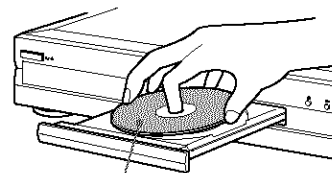
2 Turn on the TV, and switch the input selector on your TV so that the signal from the recorder appears on the TV screen.

◆ When using an amplifier

Turn on the amplifier (receiver) and select the appropriate channel so that you can hear sound from the recorder.

3 Press ▲ OPEN/CLOSE to open the disc tray.

4 Place a disc on the disc tray.



With the playing side facing down

5 Press ▲ OPEN/CLOSE to close the disc tray. Wait until “LOAD” disappears in the front panel display.

- ◆ **When playing a DVD-RW/DVD+RW/DVD-R**
You can select the title from the Title List menu. See “Selecting a Recorded Title on a Disc” (page 53).
- ◆ **If a menu appears on the TV screen**
See “Using the DVD’s Menu” below.

6 Press **▶** PLAY.

The recorder starts playback.

To adjust the volume

Adjust the volume of your TV or amplifier (receiver).

To stop playback

Press **■** STOP.

To turn off the recorder

Press **I/⏻**.

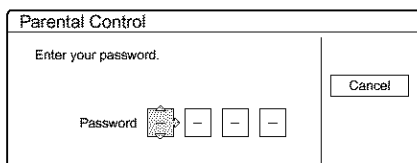
Hint

You can also start or stop playback using the TOOLS menu.

To play a DVD VIDEO for which Parental Control is set

When the message “Do you want temporarily change parental control to *?” appears on the TV screen, follow the steps below.

- 1 Press **←/→** to select “OK,” then press **ENTER**.
The display for entering your password appears.



- 2 **Enter your four digit password using the number buttons.**
The cursor moves to “OK.”
- 3 **Press ENTER to select “OK.”**
The recorder starts playback.

To register or change the password, see “Parental Control (DVD VIDEO only)” (page 97).

Using the DVD’s Menu

-RW VIDEO **+RW** **-R** **DVD**

When you play a DVD VIDEO which contains several titles, you can select the title you want using the TOP MENU or MENU button.

When you play DVD VIDEOS that allow you to select items such as the language for the subtitles and the language for the sound, select these items using the MENU button.

- 1 **Press TOP MENU or MENU.**
The disc’s menu appears on the TV screen.
The contents of the menu vary from disc to disc.
- 2 **Press ←/↑/↓/→ or the number buttons to select the item you want to play or change.**

3 Press ENTER.

Hint

If you are playing a finalized DVD-R, DVD+RW, or DVD-RW (Video mode), you can display the menu with the TOP MENU or MENU button. See “Finalizing a disc (Finalize)” (page 73) for more information about finalizing and DVD menus.

Using the PROGRESSIVE button

You can fine-tune the Progressive 480p video signal output when you press PROGRESSIVE on the front panel (the PROGRESSIVE indicator lights up) and connect the recorder using the COMPONENT VIDEO OUT jacks to a TV that is able to accept the video signal in progressive format. Press PROGRESSIVE repeatedly to toggle the displays as follows:

INTERLACE (the PROGRESSIVE indicator turns off)



PROGRESSIVE (the PROGRESSIVE indicator lights up)

- **INTERLACE**
Select this when you are connected to a standard (Interlace format) TV.
- **PROGRESSIVE**
Select this when you are connected to a TV compatible with progressive signals. The recorder outputs video signals in progressive format.

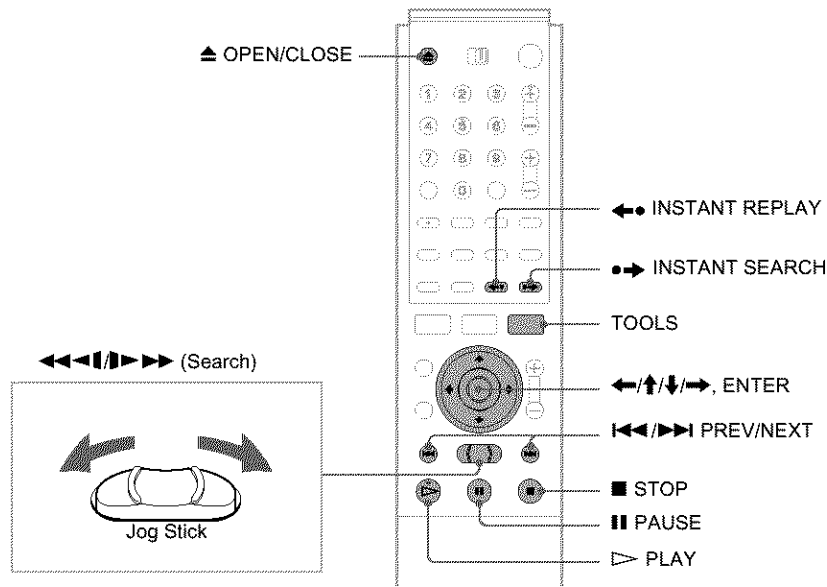
Conversion modes

DVD software can be divided into two types: film based software and video based software. Video based software is derived from the 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 (60 frames per second), the progressive video signal needs to be converted to match the type of DVD software that you are watching. The title recorded on this recorder is Video based software. If you want to set the conversion mode for Video based software regardless of the software type, set “Progressive Mode” in Video Setup to “Video” (page 95).

Notes

- When you play video based software with progressive signals, sections of some types of images may appear unnatural due to the conversion process when output through the COMPONENT VIDEO OUT jacks. Images from the LINE OUT (S VIDEO) 1/2 and LINE OUT (VIDEO) 1/2 jacks are unaffected as they are output in the normal (interlace) format.
- If you have set the recorder to progressive format even though your TV is not compatible with progressive format (480p) signals, you cannot view pictures. Some video signals recorded on the disc may not be converted in progressive format. In either of these cases, set the recorder to interlace format.

Basic operations/Changing the playback speed



To:	Operations	Discs
Pause	Press ▢ PAUSE . To resume playback, press ▢ PAUSE or ▷ PLAY .	All discs
Locate the beginning of the title/chapter/track	During playback, press ▶▶▶ NEXT or ◀◀◀ PREV . • ▶▶▶ NEXT : Goes to the next title/chapter/track. • ◀◀◀ PREV : Goes back to the beginning of the previous title/chapter/track. For DVD-RWs (VR mode), you can manually add chapter marks (page 67).	All discs
Stop play and remove the disc	Press ▲ OPEN/CLOSE .	All discs
Replay the previous scene	Press ←• INSTANT REPLAY . This function is useful when you want to review a scene or dialogue you missed.	DVD -R -RW VIDEO +RW -RW VR
Briefly fast forward the current scene	Press •→ INSTANT SEARCH . This function is useful for skipping a scene you do not want to watch.	
Fast forward/fast reverse (search)	During playback, briefly push the Jog Stick to the left or right. Each time you push the Jog Stick, the search speed changes as follows: fast reverse ◀◀◀ fast forward ▶▶▶ FR1 ← → FF1 FR2 ←← →→ FF2 FR3* ←←← →→→ FF3* To resume to the normal speed, press ▷ PLAY . When you push and hold the Jog Stick down to the left or right, fast forward/fast reverse continues at the selected speed until you release the Jog Stick. Actual speeds may differ with some discs or recording modes. * Music CDs cannot be played at FR3/FF3.	All discs
Frame by frame (Slow-motion play)	Push ◀◀◀/▶▶▶ Jog Stick for more than one second when the recorder is in pause mode. To return to the normal speed, press ▷ PLAY .	DVD -R -RW VIDEO +RW -RW VR
Watch one frame at a time (Freeze Frame)	Push ◀◀◀/▶▶▶ Jog Stick briefly when the recorder is in pause mode. To return to the normal speed, press ▷ PLAY .	

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

When you stop the disc, the recorder remembers the point where you pressed ■ STOP.

- For DVDs:
Resume Play works as long as you do not open the disc tray (you may turn off the recorder).
- For CDs:
Resume Play works as long as you do not turn off the recorder or open the disc tray.

- 1 While playing a disc, press ■ STOP to stop playback.**
“RESUME” appears on the front panel display.
If “RESUME” does not appear, Resume Play is not available.
- 2 Press ▷ PLAY.**
The recorder starts playback from the point where you stopped the disc in step 1.

◆To play from the beginning of the disc

Reset the resume point using the TOOLS menu. Press TOOLS and press ↑/↓ to select “Reset Resume,” then press ENTER.

◆To play from the beginning of the title

You can locate the beginning of the title/track using the TOOLS menu. Press TOOLS and press ↑/↓ to select “Play From Start,” then press ENTER. Playback automatically starts from the beginning of the title.

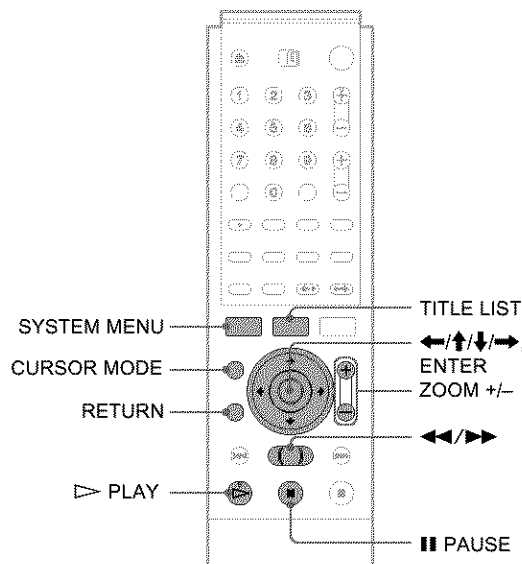
Notes

- Depending on the disc, the recorder may not resume playback from where you stopped the disc.
- Depending on where you stopped the disc, the recorder may not resume playback from exactly the same point.
- The point where you stopped playing is cleared when:
 - you open the disc tray.
 - you play another title.
 - you switch the Title List menu (Original or Playlist).
 - you edit the disc, such as erasing a title.
 - you change the settings on the recorder.
 - you turn off the recorder (CD only).
 - you make a recording (except for DVD-RWs in VR mode).

Selecting a Recorded Title on a Disc



The Title List menu displays all the titles recorded on the disc and you can select the one you want to play. For details, see also page 32.



Playback

1 Insert a disc and press TITLE LIST.

The Title List menu appears. For a DVD-RW (VR mode), select “Original” or “Playlist” using the TOOLS menu (page 32).

TITLE LIST ORIGINAL		My Movies 1,54.7GB	
Sort	2ch	1:00PM - 2:00PM	9/16
□ Date	2	5ch 8:00PM - 9:00PM	9/17
⊕ Number	3	12ch 9:00AM - 9:30AM	9/25
○ Title	4	3ch 8:00PM - 8:30PM	9/25
	5	25ch 8:00PM - 8:30PM	10/15
	6	L2 9:00PM - 9:30PM	10/19
	7	8ch 9:00PM - 9:30PM	10/26
	8	125ch 10:00AM - 10:30AM	10/28

2 Press ↑/↓ to select the title, then press ENTER.

The sub-menu appears.

3 Press ↑/↓ to select “Play,” then press ENTER.

Playback starts from the selected title on the disc.

💡 Hints

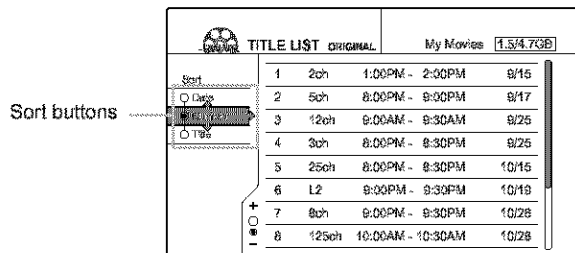
- You can also display the Title List menu using the System Menu. Press SYSTEM MENU and select “TITLE LIST,” then press ENTER (page 32).
- You can select Page mode by pressing CURSOR MODE (page 32). In Page mode, you can change the page of the Title List using ↑/↓.
- You can also use the ▷ PLAY button to start playback.
- To change the title name, see “Labeling a title (Title Name)” (page 64).

→continued

To change the title order (Sort)

You can sort the titles according to date, number, or title.

- 1 Press **←** while the Title List menu is turned on. The Sort buttons are selected.



- 2 Press **↑/↓** to select date, number, or title, then press **ENTER**. The titles are sorted in selected order.

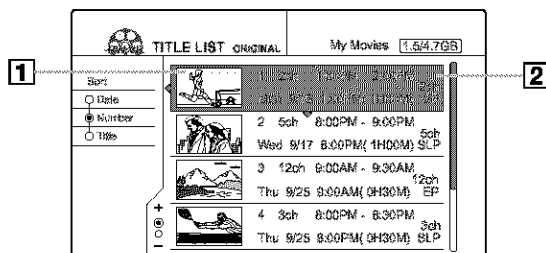
Order	Sorted
Date	in order of date (when the titles were recorded). The title that is recorded most recently is listed at the top.
Number	in order of recorded title number.
Title	in alphabetical order.

To show the list in greater detail (Zoom)

Press **ZOOM+** while the Title List menu is turned on to view detailed information about the title.

To return to the normal Title List menu, press **ZOOM-**.

Example: DVD-RW (VR mode)



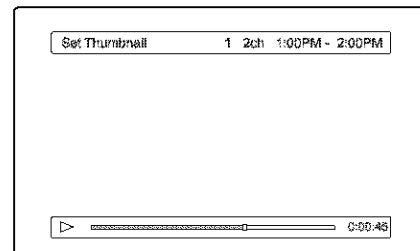
- 1 **Title's thumbnail picture**
- 2 **Title information:**
Displays the title number, title name, date/time of recording, channel, and recording mode*.
 - indicates that the title is protected.
 - (red) indicates that the title is being recorded.

* The displayed recording mode refers to the mode selected when the program was recorded on this recorder.

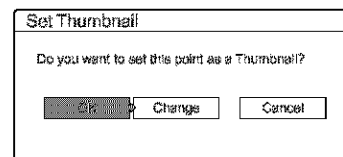
To change a title thumbnail picture (Thumbnail) (DVD-RW in VR mode only)

You can select a favourite scene for a thumbnail picture in a zoomed Title List menu.

- 1 Press **TITLE LIST** while a disc is in the recorder. The Title List menu appears.
- 2 Press **↑/↓** to select a title whose thumbnail picture you want to change, then press **ENTER**. The sub-menu appears.
- 3 Press **↑/↓** to select "Set Thumbnail," then press **ENTER**. The display for setting a thumbnail picture appears. The selected title starts to play in the background.



- 4 While watching the playback picture, press **▷** **PLAY**, **⏸** **PAUSE**, or **◀/▶** to select the scene you want to set for a thumbnail picture, then press **ENTER**. Playback pauses at the selected scene, and the display asks for confirmation.



To change the selection, select "Change."

- 5 Press **←/→** to select "OK," then press **ENTER**. The scene is set for the title's thumbnail picture.
- 6 Press **RETURN** to turn off the display.

Hint

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

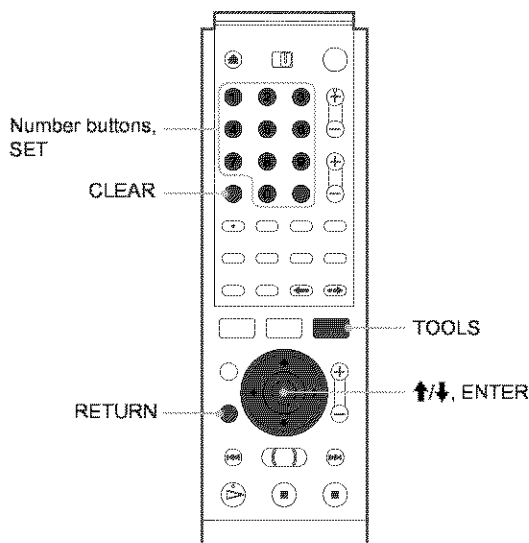
Notes

- Title thumbnail pictures are displayed only on this recorder.
- It may take a few seconds for the thumbnail pictures to be displayed.

Searching for a Title/ Chapter/Track

-RW VR **-RW VIDEO** **+RW** **-R** **DVD**
CD

You can search a DVD by title or chapter, and a CD by track. Since titles and tracks are assigned unique numbers on the disc, you can select the desired title/chapter/track by entering its number. Or, you can search for a scene using the time code.

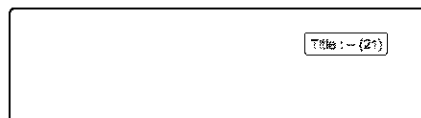


1 Press TOOLS during playback.
The TOOLS menu appears.

2 Press ↑/↓ to select the search method, then press ENTER.

- Title Search (for DVDs)
- Chapter Search (for DVDs)
- Track Search (for 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 title/chapter/track/scene.

To cancel searching

Press RETURN.

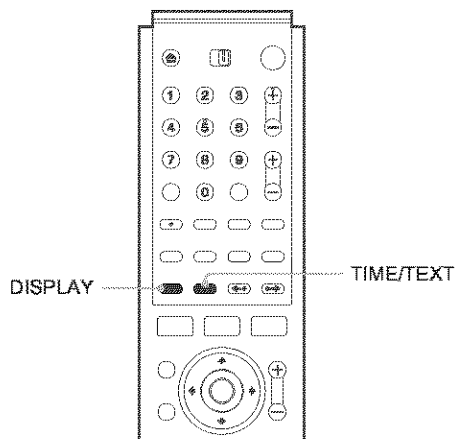
Notes

- You cannot search for a still picture on a DVD-RW (VR mode) using Time Search.
- If you enter a number that does not exist, the current selection does not change.

Checking the Play Information and Playing Time

-RW VR **-RW VIDEO** **+RW** **-R** **DVD**
CD

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)

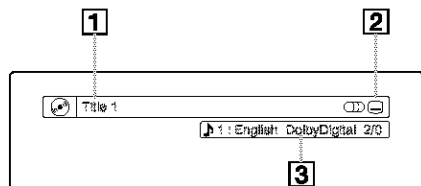


(Display off)

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

◆ Display 1

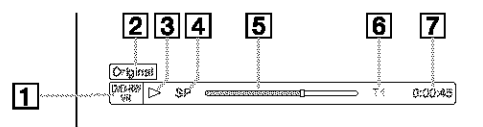
Example: When playing a DVD VIDEO



- 1 Title/track number/name
- 2 Available disc functions (angle/audio/subtitle, etc.)
- 3 The current selected function or audio setting (appears only temporarily)

◆ Display 2

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



- 1 Disc type/format (page 35)
- 2 Title type (Original or Playlist) (page 32)
- 3 Play mode
- 4 Recording mode* (page 36)
- 5 Playing status bar
- 6 Title number (page 53)
- 7 Playing time

* The displayed recording mode refers to the mode selected when the program was recorded on this recorder.

To check the remaining time

Press TIME/TEXT repeatedly while the Display 2 is displayed above.

Each time you press the button, the display changes in the following order.

◆ When playing a DVD

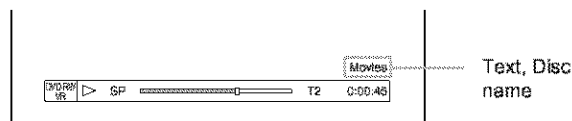
- Playing time of the current title (hours: minutes: seconds)
- Remaining time of the current title
- Playing time of the current chapter
- Remaining time of the current chapter
- Disc name (DVD-RW/DVD+RW/DVD-R only)

◆ When playing a CD

- Playing time of the current track (minutes: seconds)
- Remaining time of the current track
- Playing time of the current disc
- Remaining time of the current disc
- Disc name

To check the disc name (except DVD VIDEO)

Press TIME/TEXT repeatedly while the Display 2 is displayed. The text appears only when text is recorded on a CD, or if you input the disc's name. To label a DVD-RW/DVD+RW/DVD-R, see "Labeling a disc (Disc Name)" (page 72).



💡 Hint

When "Auto Display" is set to "On" (default) in Options Setup (page 99), playback information automatically appears for several seconds after starting playback.

Checking the playing time on the front panel display

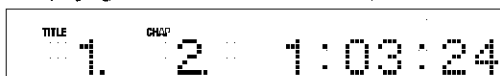
You can view the playing or time information and text displayed on the TV screen also on the front panel display.

Press TIME/TEXT repeatedly.

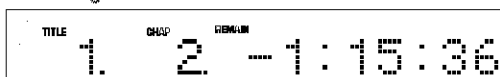
Each press of the button changes the information as follows:

◆When playing a DVD

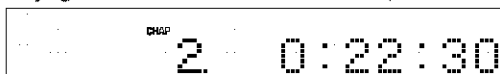
Title playing time and the current title/chapter number



Remaining time of the current title



Playing time and number of the current chapter



Remaining time of the current chapter



Disc name

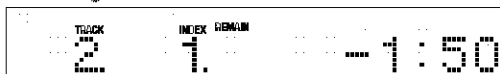


◆When playing a CD

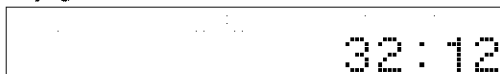
Track playing time and the current track/index number



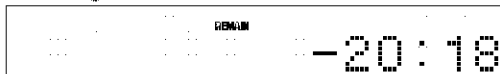
Remaining time of the current track



Playing time of the disc



Remaining time of the disc



Disc name



💡 Hint

Long text that does not fit in a single line will scroll across the front panel display.

Notes

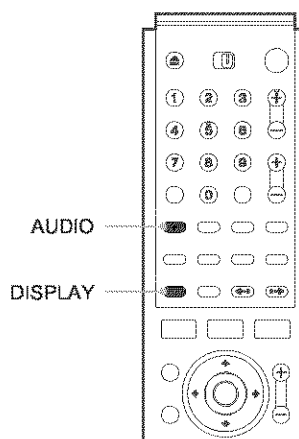
- Depending on the type of disc being played, the disc's text may not be displayed.
- The recorder can only display the first level of a CD's text, such as the disc name.
- The letters or symbols that cannot be displayed are replaced with "**."

Selecting the Sound

-RW VR DVD CD

When playing a DVD VIDEO recorded in multiple audio formats (PCM, Dolby Digital, or DTS), you can select the audio format. If a DVD VIDEO is recorded with multilingual tracks, you can also change the language.

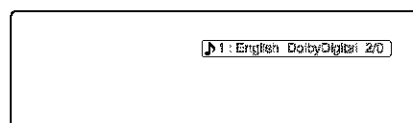
With CDs, you can select the sound from the right or left channel and listen to the sound of the selected channel through both the right and left speakers. For example, when playing a disc containing a song with the vocals on the right channel and the instruments on the left channel, you can listen to the instruments only from both speakers, by selecting the left channel.



Press AUDIO repeatedly during playback to select one of the audio options.

The following display appears.

Example: DVD VIDEO



◆When playing a DVD VIDEO

Depending on the DVD VIDEO, the choice of language varies. When four numbers are displayed, they indicate a language code. To see which language the code represents, see "Language Code List" (page 108). When the same language is displayed two or more times, the DVD VIDEO is recorded in multiple audio formats.

◆When playing a DVD-RW in VR mode

The types of sound tracks recorded on a disc are displayed. The default setting is underlined.

For a disc recorded on this recorder, the sound can be selected only if recorded from equipment connected to the LINE IN jacks.

Example:

- 1: Main (main sound)
- 1: Sub (sub sound)
- 1: Main/Sub (main and sub sound)

Playback

→continued

◆When playing a CD

The default setting is underlined.

- Stereo: The standard stereo sound
- 1/L: The sound of the left channel (monaural)
- 2/R: The sound of the right channel (monaural)

Notes

- Depending on the disc, you may not be able to change the audio format.
- When playing a DVD-RW in VR mode: If you connected to an AV amplifier (receiver) using the DIGITAL OUT (COAXIAL or OPTICAL) jack and want to switch between the sound tracks, set "Dolby Digital" in Audio Setup to "D-PCM."

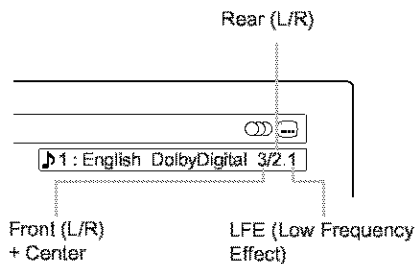
Checking the audio signal format

When playing a DVD, you can check the format of the current audio signal (Dolby Digital, DTS, PCM, etc.).

Press DISPLAY.

The following display appears.

Example: Dolby Digital 5.1 ch



◆About audio signals

Audio signals recorded in a disc contain the sound elements (channels) shown below. Each channel is output from a separate speaker.

- Front (L)
- Front (R)
- Center
- Rear (L)
- Rear (R)
- Rear (Monaural): This signal can be either Dolby Surround Sound processed signals or Dolby Digital sound's monaural rear audio signals.
- LFE (Low Frequency Effect) signal

Note

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 96).

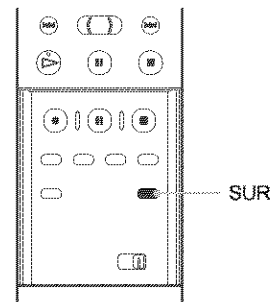
TV Virtual Surround Settings (TVS)

DVD

When you connect a stereo TV or two front speakers, TVS (TV Virtual Surround) lets you enjoy surround sound effects by using sound imaging to create virtual rear speakers from the sound of the front speakers (L: left, R: right) without using actual rear speakers.

If the recorder is set up to output the signal from the DIGITAL OUT (OPTICAL or COAXIAL) jack, the surround effect will only be heard when "Dolby Digital" in Audio Setup is set to "D-PCM" (page 96).

TVS was developed by Sony to produce surround sound for home use using just a stereo TV.



Press SUR repeatedly during playback to select one of the TVS sounds.

Refer to the following explanations given for each item.

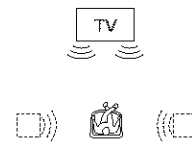
- Off
- Dynamic
- Wide
- Night
- Standard

TV Virtual Surround modes

◆Dynamic

Creates one set of virtual rear speakers from the sound of the actual front speakers (L, R) as shown below.

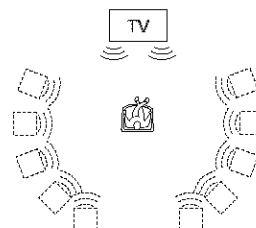
This mode is effective when the distance between the front L and R speakers is short, such as with built-in speakers on a stereo TV.



◆Wide

Creates five sets of virtual rear speakers from the sound of the actual front speakers (L, R) as shown below.

This mode is effective when the distance between the front L and R speakers is short, such as with built-in speakers on a stereo TV.



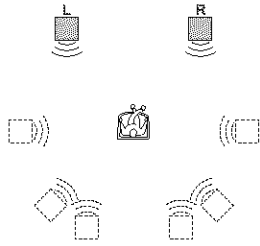
◆Night

Large sounds, such as explosions, are suppressed, but quieter sounds are unaffected. This feature is useful when you want to hear the dialogue and enjoy the surround sound effects of "Wide" at low volume.

◆Standard

Creates three sets of virtual rear speakers from the sound of the actual front speakers (L, R) as shown below.

This mode is effective when you use two separate front speakers.



L: Front speaker (left)
R: Front speaker (right)
□: Virtual speaker

To cancel the setting

Select "Off".

🔔 Hint

You can select the TVS mode from the TOOLS menu (page 61).

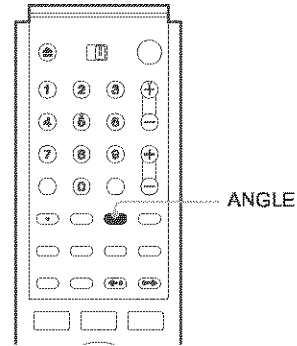
Notes

- When the playing 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 setting 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.
- Not all discs will respond to the "Night" function in the same way.
- The TVS function cannot be used with discs recorded on this recorder.

Changing the Angles

DVD

If various angles (multi-angles) for a scene are recorded on a DVD VIDEO, "ANGLE" appears in the front panel display, indicating that you can change the viewing angle.



Press ANGLE repeatedly during playback to select an angle.

The scene changes to the selected angle.



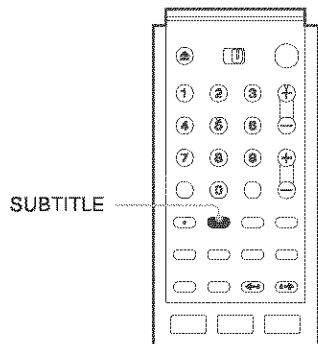
Notes

- Depending on the DVD VIDEO, you may not be able to change the angles even if multi-angles are recorded on the disc.
- You cannot change the angles when playing a disc recorded on this recorder.

Displaying the Subtitles

DVD

If subtitles are recorded on a disc you can change the subtitle language or turn the subtitles on and off whenever you want during playback.



Press **SUBTITLE** repeatedly during playback to select a setting.



Depending on the DVD VIDEO, the choice of language varies. When four numbers are displayed, they indicate a language code. To see which language the code represents, see "Language Code List" (page 108).

To turn off the subtitles

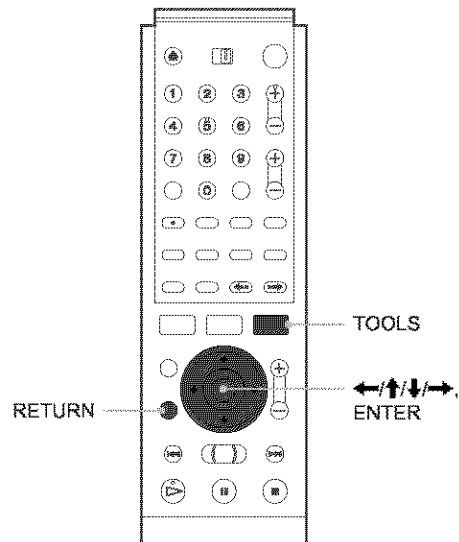
Select "Off".

Notes

- Depending on the DVD VIDEO, you may not be able to change the subtitle language even if multilingual subtitles are recorded on it. You also may not be able to turn them off.
- You cannot change the subtitles when playing a disc recorded on this recorder.

Adjusting the Playback Picture and Sound

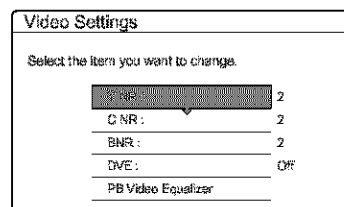
You can adjust the video/audio signal from the recorder to obtain the picture or sound quality you want.



Adjusting the picture quality

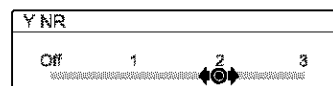
-RW VR -RW VIDEO +RW -R DVD

- 1 Press TOOLS during playback.**
The TOOLS menu appears.
- 2 Press ↑/↓ to select "Video Settings," then press ENTER.**
The following display appears.



- 3 Press ↑/↓ to select the item you want to adjust, then press ENTER.**
The adjustment display appears.

Example: Y NR



◆ 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.

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.

4 Press **←/→** to adjust the setting, then press **ENTER**.

The larger the number, the greater the effect. The default settings are underlined.

Items	Settings
Y NR	Off 1 <u>2</u> 3
C NR	Off 1 <u>2</u> 3
BNR	Off 1 <u>2</u> 3
DVE	<u>Off</u> 1 2 3
PB Video Equalizer	
Contrast	-3 ~ <u>0</u> ~ 3
Brightness	-3 ~ <u>0</u> ~ 3
Color	-3 ~ <u>0</u> ~ 3
Hue	-3 ~ <u>0</u> ~ 3

5 Repeat steps 3 and 4 to adjust any other items.

6 Press **RETURN** to turn off the display.

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 BNR effect may be hard to discern. The BNR function may not work with some screen sizes.
- When playing a disc recorded in SLP recording mode, the BNR setting may have little effect.

Adjusting the sound quality

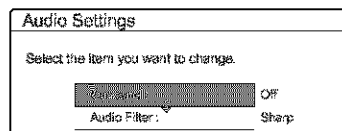
-RW VR **-RW VIDEO** **+RW** **-R** **DVD**
CD

1 Press **TOOLS**.

The **TOOLS** menu appears.

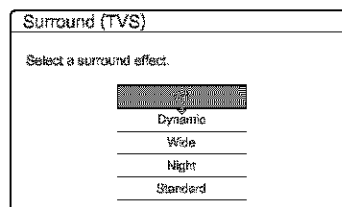
2 Press **↑/↓** to select “Audio Settings,” then press **ENTER**.

The following display appears.



3 Press **↑/↓** to select the item, then press **ENTER**.

Example: Surround (TVS)



◆ **Surround (DVD VIDEO only)**

Selects one of the surround modes. For more information, see “TV Virtual Surround Settings (TVS)” (page 58).

- Off (default)
- Dynamic
- Wide
- Night
- Standard

◆ **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 affects output signals from the **LINE OUT (AUDIO L/R) 1/2** jacks.

4 Press **←/↑/↓/→** to select the option, then press **ENTER**.

5 Press **RETURN** to turn off the display.

Note

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

Editing a DVD

This section introduces the basics of DVD editing, and explains both edit functions for the recording on a disc and the edit functions for the entire disc.

- *Before Editing* page 62
- *Basic Editing* **- RW VR** **- RW VIDEO** **+ RW** **- R** page 64
- *Advanced Editing (Playlist Edit)* **- RW VR** page 67
- *Labeling, Protecting, or Finalizing the Disc* **- RW VR** **- RW VIDEO** **+ RW** **- R** page 72

Before Editing

This recorder offers various edit options. Before you edit, read the following to see what is available for your disc.

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

Checking the disc type, recording format, and title type

Press TITLE LIST, and check the disc type and recording format indicated at the top of the Title List menu. If the disc is a VR mode disc, check also the title type, Original or Playlist. If you edit an original title instead of a Playlist title by mistake, it is irreversible. You will be unable to recover the erased title, or revert the edited title to the previous status.

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

- RW VIDEO **+ RW** **- R**

You can perform simple edits. Since Video mode titles are actual recordings on the disc, you cannot undo the edits you have done.

Title List menu for DVD-RWs (Video mode)/DVD+RWs/DVD-Rs

The screenshot shows the 'TITLE LIST' menu. At the top, it displays 'Disc type/Recording format' with a dropdown menu set to 'DVD-R'. To the right, it shows 'My Movies (1.54.7GB)'. Below this is a table of titles:

Sort	Title	Start	End	Time
<input type="radio"/> Title	2	5ch	8:00PM - 9:00PM	9/17
<input checked="" type="radio"/> Number	3	12ch	9:00AM - 9:30AM	9/25
<input type="radio"/> Title	4	3ch	8:00PM - 8:30PM	9/25
	5	25ch	8:00PM - 8:30PM	10/15
	6	L2	9:00PM - 9:30PM	10/19
	7	8ch	9:30PM - 9:30PM	10/28
	8	125ch	10:00AM - 10:30AM	10/28

Basic edit functions available with Video mode titles:

- Setting protection against erasure (page 64).
- Labeling a title (page 64).
- Erasing a title (page 65).
- Erasing multiple titles (page 65).

Notes

- Once the disc is finalized, you cannot edit or record on the disc (except for DVD-RWs in VR mode and DVD+RWs).
- You cannot create a Playlist (see below) on a DVD-RWs (Video mode), DVD+RW, or DVD-Rs.

Edit options for DVD-RWs (VR mode)

-RW VR

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.

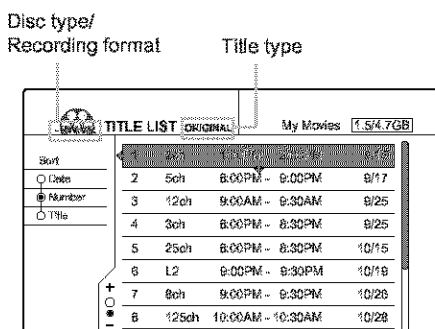
Editing the "Original"

Basic edit functions available with Originals:

- Labeling a title (page 64).
- Setting protection against erasure (page 64).
- Erasing a title (page 65).
- Erasing multiple titles (page 65).
- Erasing a section of a title (A-B Erase) (page 66).

All edits made to the original title are final. If you plan to retain an unaltered original recording, create and edit a Playlist (see below).

The Title List (Original) menu displays all the original titles on the disc.



Note

Original titles provide a source for the created Playlist. If you use an original title for a Playlist, you will be unable to erase the original title.

Editing the "Playlist"

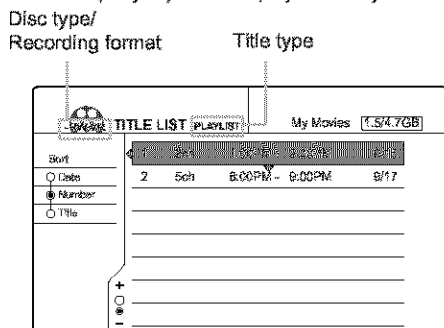
A Playlist is a group of Playlist titles created from the original title for editing purposes. When you create a Playlist, only the control information necessary for playback, such as the playback order, is stored on the disc.

Example: You have recorded the final few matches of a football 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 collect the scenes of the highlights, and create playback information (a Playlist title). You can even rearrange the scene order within the Playlist title.

The above is only an example. Try using the Playlist's various edit functions, or use them in conjunction with an Original edit. Devise your own ways of editing with Playlists and Originals.

The Title List (Playlist) menu displays the Playlist titles on the disc.



Advanced edit functions available with the Playlist:

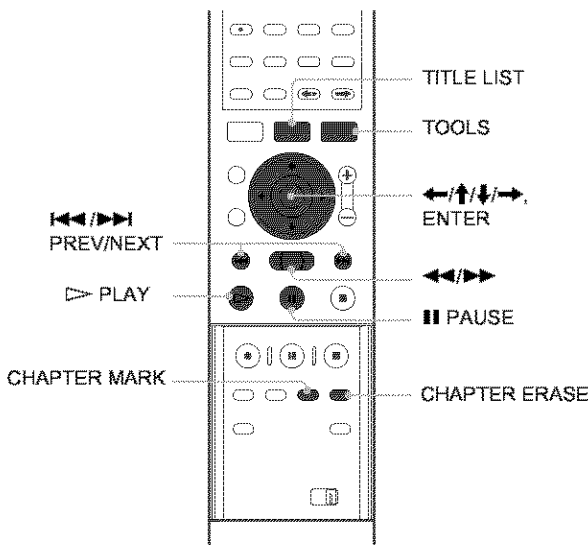
- Labeling a title (page 64).
- Erasing a title (page 65).
- Erasing multiple titles (page 65).
- Erasing a section of a title (A-B Erase) (page 66).
- Creating a Playlist title from selected titles and scenes (page 67).
- Rearranging the title order (page 70).
- Dividing a title into multiple titles (page 70).
- Combining multiple titles into one title (page 71).

Basic Editing

This section explains the basic edit functions. Note that these edits are irreversible to the original status. If you want to edit a DVD-RW (VR mode) without changing the original recordings, create a Playlist (page 67).

Notes

- If “No new data can be added to this disc” appears on the screen, erase any unwanted titles before editing.
- For DVD-Rs/DVD-RWs (Video mode):
Finish all the editing before finalizing the disc. You cannot edit a finalized disc.
- For original titles in DVD-RWs (VR mode):
Original titles provide a source for derived Playlist. When you use an original title for a Playlist, you will be unable to erase or edit the original title.



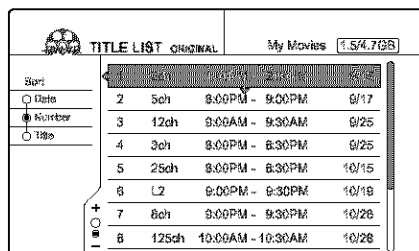
Labeling a title (Title Name)

-RW VR **-RW VIDEO** **+RW** **-R**

You can enter up to 64 characters for a name. The title name will be displayed in the Title List menu.

1 Press TITLE LIST.

The Title List menu appears. If you are using a DVD-RW (VR mode), press TOOLS and select either “Original” or “Playlist” from the TOOLS menu to change the Title List, if necessary.

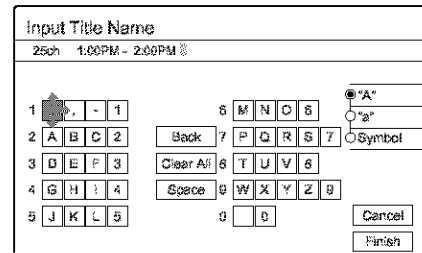


2 Press ↑/↓ to select the title, then press ENTER.

The sub-menu appears.

3 Press ↑/↓ to select “Title Name,” then press ENTER.

The display for entering a title name appears. To enter character, see page 34.



4 When you finish entering the title name, press ←/↑/↓/→ to select “Finish.”

A new Title List menu appears with the title of the entered name.

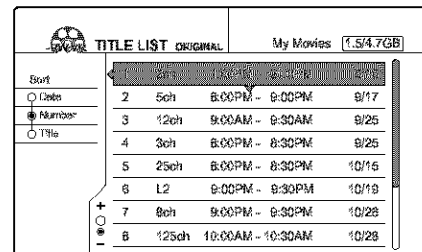
Protecting a title (Protect Title)

-RW VR **-RW VIDEO** **+RW** **-R**

You can set protection for a title so that the title cannot be erased.

1 Press TITLE LIST.

The Title List menu appears. If you are using a DVD-RW (VR mode), press TOOLS and select “Original” from the TOOLS menu.

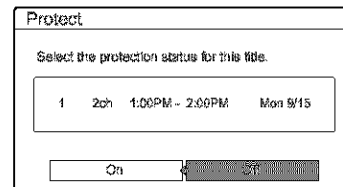


2 Press ↑/↓ to select the title, then press ENTER.

The sub-menu appears.

3 Press ↑/↓ to select “Protect Title,” then press ENTER.

The following display appears.



4 Press ←/→ to select “On,” then press ENTER.

The protection is set.

To cancel the protection

- 1 Select the protected title in step 2.
- 2 Press **↑/↓** to select "Protect Title," then press **ENTER**.
- 3 Press **←/→** to select "Off," then press **ENTER**.

To protect the entire disc

See page 72.

Note

You cannot protect Playlist titles.

Erasing a title (Erase)

-RW VR **-RW VIDEO** **+RW** **-R**

You can erase titles individually using the sub-menu.

◆For DVD-Rs:

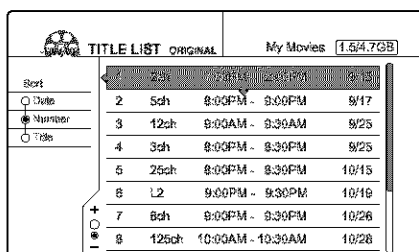
Note that erasing titles on a DVD-R does not increase available disc space.

◆For DVD-RWs (VR mode):

Note that you are unable to erase the original title if there is a Playlist title derived from the original title.

1 Press TITLE LIST.

The Title List menu appears. If you are using a DVD-RW (VR mode), press **TOOLS** and select either "Original" or "Playlist" from the **TOOLS** menu to change the Title List, if necessary.



2 Press **↑/↓** to select the title you want to erase, then press **ENTER**.

The sub-menu appears.

3 Press **↑/↓** to select "Erase," then press **ENTER**.

The display asks for confirmation.

4 Press **←/→** to select "OK," then press **ENTER**.

The title is erased.

◆ When the selected title is protected

- To continue the procedure, press **→** to select "Change."
The protection display appears. Select "Off" by pressing **←/→**, then press **ENTER**.
- To cancel the procedure, select "Close" by pressing **←/→**, then press **ENTER**.

◆ When the selected title is referred to by a Playlist

Select "Close" as you are unable to delete an original title that is referred to by a Playlist.

If you want to delete the original title, first delete the Playlist title. Then, delete the original title.

🔔 Hint

If you are using a DVD-RW (Video mode) or DVD+RW, you can erase a title using the Disc Map (page 38).

Erasing multiple titles (Erase Titles)

-RW VR **-RW VIDEO** **+RW** **-R**

You can erase more than two titles at one time using the **TOOLS** menu.

◆For DVD-Rs:

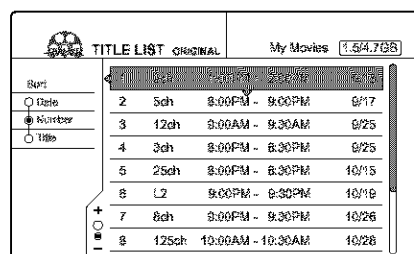
Note that erasing titles on a DVD-R does not increase available disc space.

◆For DVD-RWs (VR mode):

Note that you are unable to erase the original title if there is a Playlist title derived from the original title.

1 Press TITLE LIST.

The Title List menu appears. If you are using a DVD-RW (VR mode), press **TOOLS** and select either "Original" or "Playlist" from the **TOOLS** menu to change the Title List, if necessary.

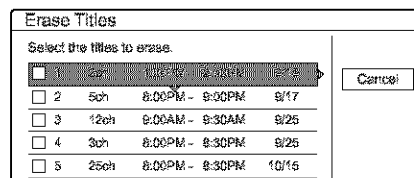


2 Press TOOLS.

The **TOOLS** menu appears.

3 Press **↑/↓** to select "Erase Titles," then press **ENTER**.

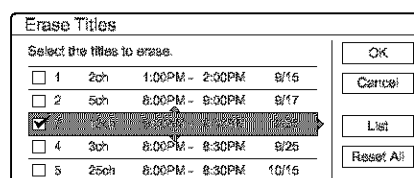
The display for selecting titles to be erased appears.



4 Press **↑/↓** to select the title, then press **ENTER**.

A check mark appears in the check box next to the selected title.

To clear the check mark, press **ENTER** again.



→continued

To list all of the titles to be erased, select “List.”
To clear all the check marks, select “Reset All.”

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

◆ **When the selected title is protected**

The display asks for confirmation.

- To continue the procedure, press **→** to select “Change.”
The protection display appears. Select “Off” by pressing **←/→**, then press **ENTER**.
- To cancel the procedure, select “Close” by pressing **←/→**, then press **ENTER**.

◆ **When the selected title is referred to by a Playlist**

Select “Close” as you are unable to delete an original title that is referred to by a Playlist.
If you want to delete the original title, first delete the Playlist title. Then, delete the original title.

6 Press ←/→ to select “OK,” then press ENTER.

The display asks for confirmation.
To return to the display for selecting titles, select “View All.”

7 Press ←/→ to select “OK,” then press ENTER.

Hint

If you are using a DVD-RW (Video mode) or DVD+RW, you can erase a title using the Disc Map (page 38).

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

-RW VR

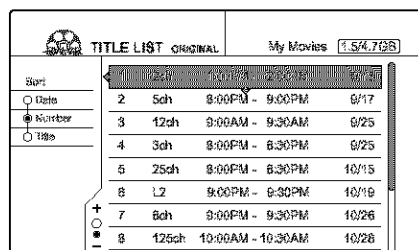
You can erase a section of a title using the sub-menu.

◆ **For original titles in a DVD-RW (VR mode):**

Note that you are unable to erase the original title if there is a Playlist title derived from the original title.

1 Press TITLE LIST.

The Title List menu appears. If you are using a DVD-RW (VR mode), press **TOOLS** and select either “Original” or “Playlist” from the **TOOLS** menu to change the Title List, if necessary.



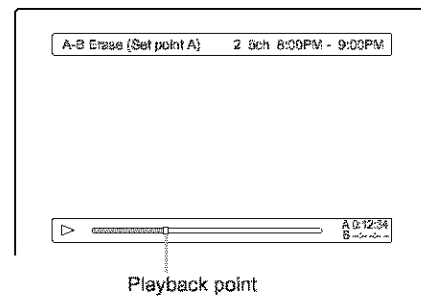
2 Press ↑/↓ to select the title, then press ENTER.

The sub-menu appears.

3 Press ↑/↓ to select “A-B Erase,” then press ENTER.

The display for setting point A appears.

The selected title plays in the background. The slider indicates the current playback point.



◆ **When the selected title is protected**

The display asks for confirmation.

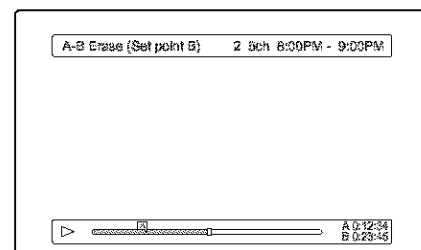
- To continue the procedure, press **←/→** to select “Change.”
The protection display appears. Select “Off” by pressing **←/→**, then press **ENTER**.
- To cancel the procedure, select “Close” by pressing **←/→**, then press **ENTER**.

◆ **When the selected title is referred to by a Playlist**

Select “Close” as you are unable to delete an original title that is referred to by a Playlist.
If you want to delete a section of the original title, first delete the Playlist title. Then, delete the section.

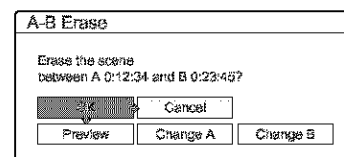
4 While watching the playback picture, set point A using ▷ PLAY, || PAUSE, and ◀◀/▶▶, then press ENTER.

The display for setting point B appears, and the title continues to play in the background.



5 While watching the playback picture, set point B using ▷ PLAY, || PAUSE, and ◀◀/▶▶, then press ENTER.

The display asks for confirmation.



To preview, select “Preview.”

To reset either point A or B, select “Change A” or “Change B.”

- Press **←/↑/↓/→** to select "OK," then press **ENTER**.

The scene is erased, and the display asks whether to erase another scene.

- To exit, press **←/→** to select "No," then press **ENTER**.

The display returns to the Title List menu.

To continue, select "Yes" and repeat the steps above.

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.

Creating chapters manually

-RW VR

You can manually insert a chapter mark at any point you like.

Press **CHAPTER MARK** during playback 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 scene to the left and right of the mark becomes a chapter.



To erase chapter marks

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

- Press **◀◀ PREV** or **▶▶ NEXT** to search for a chapter number.
- Press **CHAPTER ERASE** while displaying the chapter you want to erase. The current playing chapter combines with the previous chapter.

Notes

- Playback may momentarily stop when inserting a chapter mark.
- A message will appear when no more chapter marks can be added. In this case, you may not be able to record or edit the disc.

Advanced Editing (Playlist Edit)

This section explains how to create a Playlist, and then covers available edit functions for the created Playlist.

Playlist titles can be created from scenes that are selected original titles or other Playlist titles.

Since edits to the Playlist does not affect the original title, you can redo editing as many times as you like.

To create a Playlist title, you will do the following.

1. Select a title or titles for editing



2. "Capture" multiple scenes from the selected title(s)



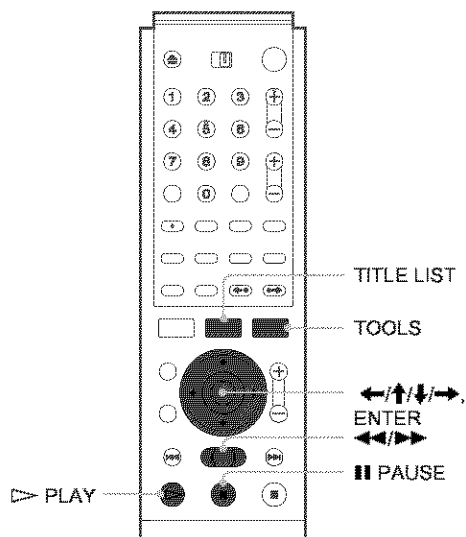
3. Confirm the scenes on the Scene List



4. If necessary, edit the scenes on the Scene List



5. Connect scenes to create a "Playlist" title



Creating a Playlist title from other titles

-RW VR

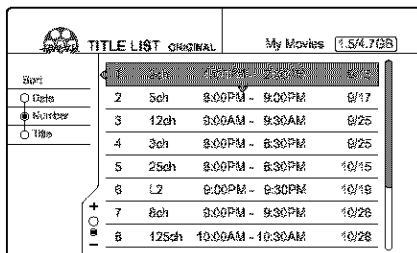
Collect your favourite scenes from original titles or other Playlist titles to create a new Playlist title. You can rearrange the order of the scenes, delete scenes, or edit the scenes as well.

- Press **TITLE LIST**.

The Title List (Original) menu or the Title List (Playlist) menu appears.

Example: The Title List (Original) menu.

→continued

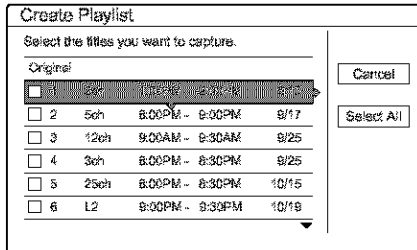


2 Press TOOLS.

The TOOLS menu appears.

3 Press ↑/↓ to select “Create Playlist,” then press ENTER.

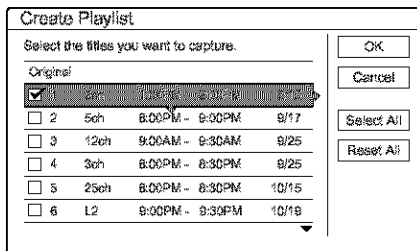
The display for selecting titles appears.



4 Press ↑/↓ to select the title you want to include in the Playlist title, then 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.”

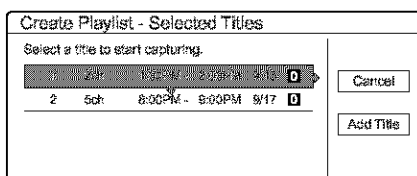
5 Repeat step 4 when adding more titles.

To go to the next page, press ↓.

To clear all the check marks, select “Reset All.”

6 Press ←/→ to select “OK,” then press ENTER.

The list of selected titles appears.



To add another title, select “Add Title.”

7 Press ↑/↓ to select one of the titles, then press ENTER.

The sub-menu appears.

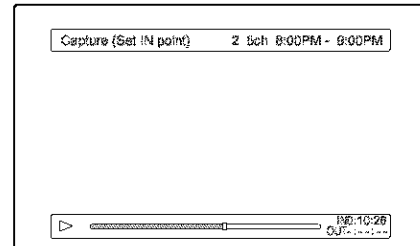
◆ To add the entire title as one scene to the Playlist title

Select “Capture All” and go to step 14.

8 Press ↑/↓ to select “Capture,” then press ENTER.

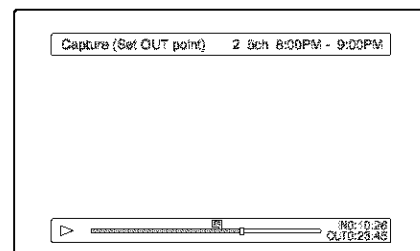
The display for setting the start point (IN) appears.

The selected title starts to play in the background.



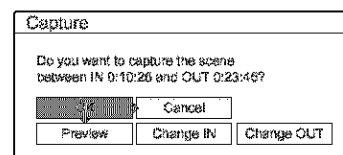
9 While watching the playback picture, select the start of the scene using ▷ PLAY, || PAUSE, and ◀◀/▶▶, then press ENTER.

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



10 While watching the playback picture, select the end point of the scene using ▷ PLAY, || PAUSE, and ◀◀/▶▶, then press ENTER.

The display asks for confirmation.

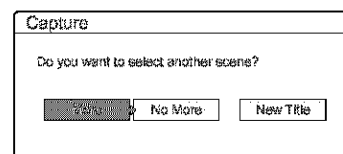


To view the selected scene, select “Preview.”

To reset either the IN or OUT point, select “Change IN” or “Change OUT.”

11 Press ←/→ to select “OK,” then press ENTER.

The selected portion is captured as a scene, and the display asks whether to continue scene capture.



- 12** Press **←/→** to select an option on the screen, then press **ENTER**.

To capture a scene from the same title, select “More,” and repeat the steps above.

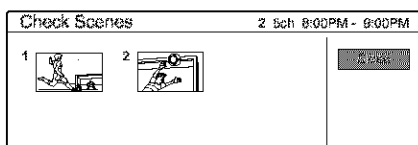
To capture a scene from another title, select “New Title,” and repeat the steps above.

- 13** To end scene capture, press **←/→** to select “No More” and press **ENTER**.

The display returns to the list of selected titles.

- ◆ To check the captured scenes in a single title

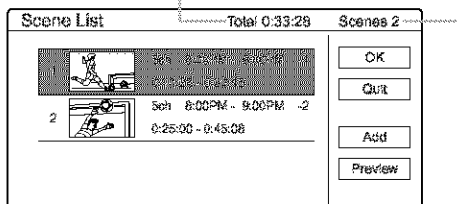
- ① Press **↑/↓** to select a title from the list of selected titles, then press **ENTER**.
The sub-menu appears.
- ② Press **↑/↓** to select “Check Scenes,” then press **ENTER**.
The thumbnail pictures of the captured scenes within the title appear.



- 14** Press **←/↑/↓/→** to select “Scene List,” then press **ENTER**.

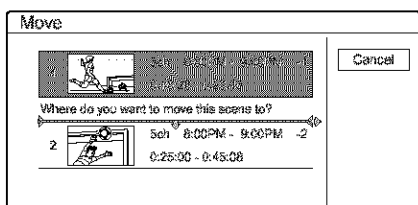
The Scene List menu appears with all of the selected scenes.

Total duration of the selected scene Total number of scenes



- ◆ To change the scene order (Move)

- ① Press **↑/↓** to select the scene you want to move, then press **ENTER**.
The sub-menu appears.
- ② Press **↑/↓** to select “Move,” then press **ENTER**.
The display for selecting the insertion point appears.



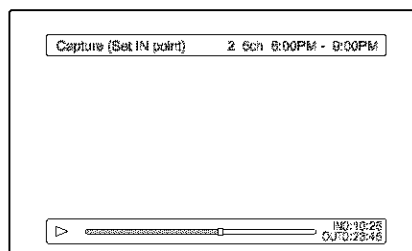
- ③ Press **↑/↓** to select the insertion point, then press **ENTER**.
The scene moves to its new position, and the display returns to the Scene List menu.

- ◆ To erase the scene (Erase)

- ① Press **↑/↓** to select the scene you want to erase, then press **ENTER**.
The sub-menu appears.
- ② Press **↑/↓** to select “Erase,” then press **ENTER**.
- ③ When the display asks for confirmation, press **←/→** to select “OK,” then press **ENTER**.

- ◆ To change the scene contents (Change IN/Change OUT)

- ① Press **↑/↓** to select the scene you want to change, then press **ENTER**.
The sub-menu appears.
- ② Press **↑/↓** to select “Change IN,” then press **ENTER**.
The display for setting the IN point appears.



- ③ Repeat steps 9 to 14.
To reset the OUT point, select “Change OUT,” then repeat steps 10 to 14.
The display returns to the Scene List menu.

- ◆ To add another scene

Press **←/↑/↓/→** to select “Add,” then press **ENTER**. Repeat steps above.

- ◆ To preview the entire Playlist title

Press **←/↑/↓/→** to select “Preview,” then press **ENTER**. The captured scenes start to play in the listed order. When the playback is finished, the display returns to the Scene List menu.

- 15** Press **←/→** to select “OK,” then press **ENTER**.

The scenes are connected to create a new Playlist title, and the display for entering the title name appears.

- ◆ To enter a new name

Select “Enter” and follow the explanations on page 34.

- ◆ To use the default name

Press **←/→** to select “OK,” then press **ENTER**. A new Title List menu appears with the title of the entered name.

Hint

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

Notes

- You can capture, move, or change the IN and OUT points for a maximum of 50 scenes per title.
- The picture may pause when the edited scene is played.

→continued

Moving a Playlist title (Move Title)

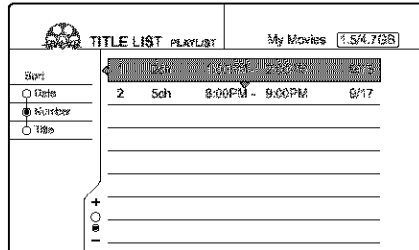
-RW VR

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

1 Press TITLE LIST.

The Title List menu appears.

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



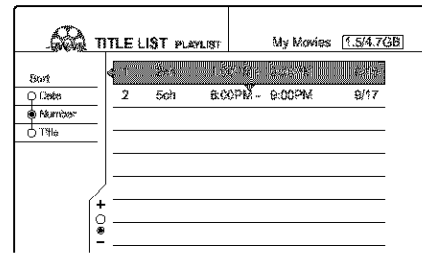
2 Press ← to select the sort buttons.

3 Press ↑/↓ to select "Number," then press ENTER.

4 Press ↑/↓ to select the title you want to move, then press ENTER. The sub-menu appears.

5 Press ↑/↓ to select "Move Title," then press ENTER. The display for moving titles appears.

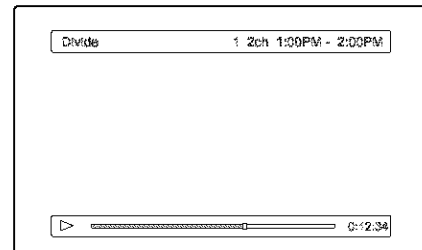
6 Press ↑/↓ to select the new location, then press ENTER. The title moves to its new location, and the display returns to the new Title List (Playlist) menu.



2 Press ↑/↓ to select the title, then press ENTER. The sub-menu appears.

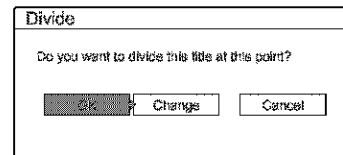
3 Press ↑/↓ to select "Divide Title" then press ENTER.

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



4 While watching the picture on the screen, move the playback point using ▷ PLAY, || PAUSE, and ◀▶/▶▶.

5 Press ENTER at the point where you want to divide the title. The display asks for confirmation.



To change the dividing point, select "Change."

6 Press ←/→ to select "OK," then press ENTER.

The display asks if you want to enter a new name.

◆ To enter a new name

Select "Yes" and follow the explanations on *page 34*.

◆ To use the same name as before

Select "No."

The title is divided and the Title List menu appears with the two divided titles.

Dividing a Playlist title (Divide Title)

-RW VR

You can divide a Playlist title into two Playlist titles. For example, if a Playlist title contains two football matches, you can divide the title where the first match ends.

1 Press TITLE LIST.

The Title List menu appears.

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

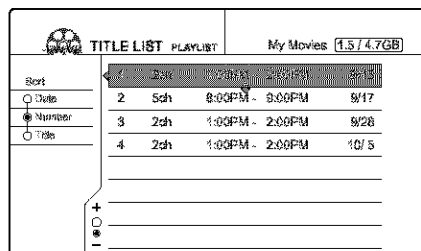
Combining multiple Playlist titles (Combine Titles)

-RW VR

You can add new contents to an existing Playlist title by combining the title with other Playlist titles.

1 Press TITLE LIST.

The Title List menu appears.
If the Title List (Original) menu appears, press TOOLS, and select "Playlist" from the TOOLS menu.

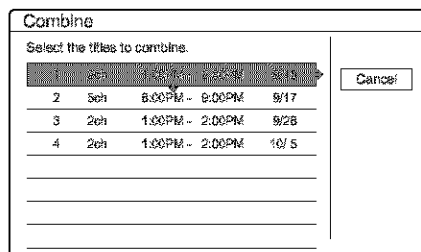


2 Press TOOLS.

The TOOLS menu appears.

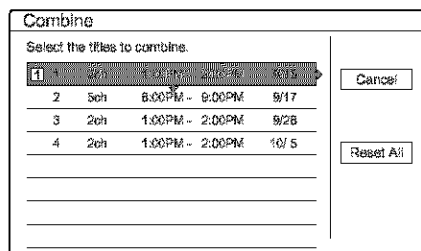
3 Press ↑/↓ to select "Combine Titles," then press ENTER.

The display for selecting titles appears.



4 Press ↑/↓ to select the title, then press ENTER.

A number appears next to the selected title, indicating the order in which you selected the title.



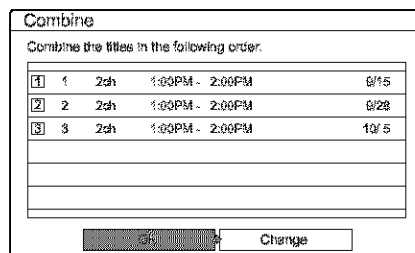
To cancel the selection, move the cursor to the selected title by pressing ↑/↓, then press ENTER again.

5 Repeat step 4 to select all the titles you want to combine.

To list the titles to be combined, select "List."
To cancel all of the selections, select "Reset All."

6 Press → to select "OK," then press ENTER.

The display asks for confirmation.



To change the selection, select "Change."

7 Press ←/→ to select "OK," then 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 34.

8 Press ↑/↓ to select a name, then press ENTER.

The titles are combined, and the display returns to the Title List menu.

Additional Playlist edit functions

-RW VR

You can also do the following edits for Playlists.

- Label a Playlist title (page 64).
- Erase a Playlist title (page 65).
- Erase multiple Playlist titles (page 65).
- Erase a section of a Playlist title (A-B Erase) (page 66).
- Create chapters in a title (page 67).

To perform these edits, press TITLE LIST * and then follow the same steps for these functions explained in "Basic Editing" (page 64).

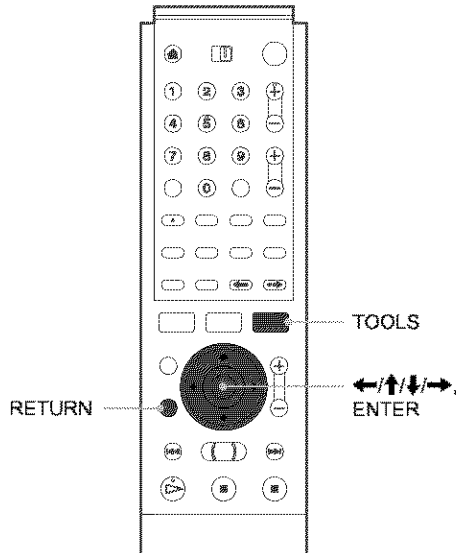
* If the Title List (Original) menu appears, press TOOLS and select "Playlist" from the TOOLS menu.

Note

Erasing Playlist titles will not free up disc space.

Labeling, Protecting, or Finalizing the Disc

Using the Disc Information display, you can label, protect, or finalize your disc. You can even erase the entire disc except for the protected titles. This section explains settings effective for the entire disc.



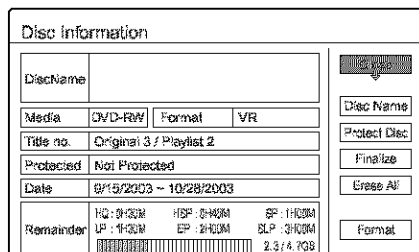
Labeling a disc (Disc Name)

-RW VR **-RW VIDEO** **+RW** **-R**

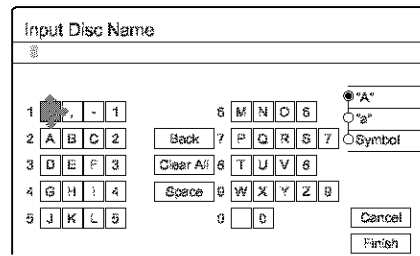
You can enter up to 64 characters for a disc name (the actual number of displayed characters will vary). The disc name will be displayed in the Title List, etc.

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

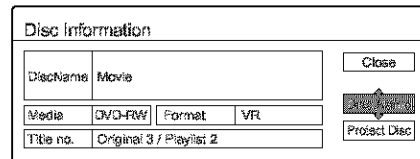
- 2 Press \uparrow/\downarrow to select "Disc Info.," then press **ENTER**.
The Disc Information display appears.
Example: When the inserted disc is a DVD-RW (VR mode).



- 3 Press \uparrow/\downarrow to select "Disc Name," then press **ENTER**.
The display for entering a disc name appears.



- 4 Enter a name by following the explanation on page 34.
The Disc Information display appears with the new disc name.



- 5 Press **RETURN** to turn off the display.

Note

The disc name will not appear when the disc is played on a different recorder.

Protecting a disc (Protect Disc)

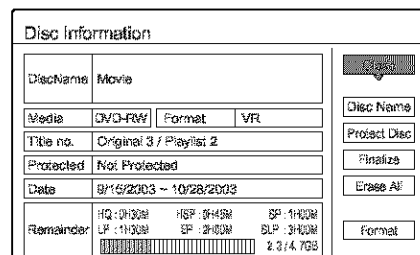
-RW VR

You can protect an entire disc. To protect individual titles, see page 64.

Note that this protection is effective only for inadvertent edit commands and erasure.

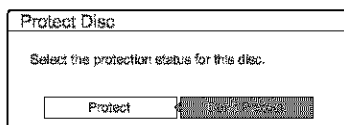
- 1 Press **TOOLS** while the disc is in the recorder.
The **TOOLS** menu appears.

- 2 Press \uparrow/\downarrow to select "Disc Info.," then press **ENTER**.
The Disc Information display appears.



- Press **↑/↓** to select “Protect Disc,” then press **ENTER**.

The display for setting disc protection appears.



- Press **←/→** to select “Protect,” then press **ENTER**.
- The display returns to the Disc Information display.

- Press **RETURN** to turn off the display.

To cancel the disc protection

- Repeat steps 1 to 3 above.
The display for setting disc protection appears.
- Press **←/→** to select “Don't Protect.”
The display returns to the Disc Information display.
- Press **RETURN** to turn off the display.

Finalizing a disc (Finalize)

-RW VR **-RW VIDEO** **+RW** **-R**

Finalizing is necessary when you play discs recorded with this recorder on other DVD equipment. Before finalizing, check the differences between the disc types on the table below.

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

When a finalized disc is in the recorder, the FINALIZED indicator lights up on the front panel.

Differences between the disc types

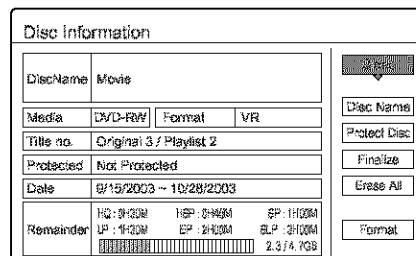
-RW VR	Finalizing is unnecessary when playing a disc on VR format compatible equipment. You may need to finalize the disc depending on the DVD equipment, or if the recording time is short. You can edit or record on the disc even after finalizing.
+RW	Finalizing is unnecessary, since DVD+RWs are automatically finalized when removed from the recorder. However, you may need to finalize the disc by following the steps below for certain DVD equipment, or 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 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 74). However, all contents recorded on the disc will be erased.
-R	Finalizing is necessary when playing on equipment other than this recorder. After finalizing, you cannot edit or record on the disc.

- Press **TOOLS** while the disc is in the recorder.

The **TOOLS** menu appears.

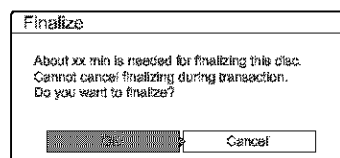
- Press **↑/↓** to select “Disc Info.,” then press **ENTER**.

The Disc Information display appears.



- Press **↑/↓** to select “Finalize,” then press **ENTER**.

The display shows the approximate time required for finalizing and asks for confirmation.



- Press **←/→** to select “OK,” then press **ENTER**.

The recorder starts finalizing the disc.

To unfinalize a disc

If you cannot record or edit on the DVD-RW (VR mode) that has been finalized with other DVD equipment (a message appears), unfinalize the disc.

Select “Unfinalize” in step 3 above.

Hint

You do not need to finalize a disc again once the disc has been finalized with this recorder.

Notes

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

Erasing all the titles on the disc (Erase All)

-RW VR **-RW VIDEO** **+RW**

You can erase all the titles on the disc except the titles you have set protection.

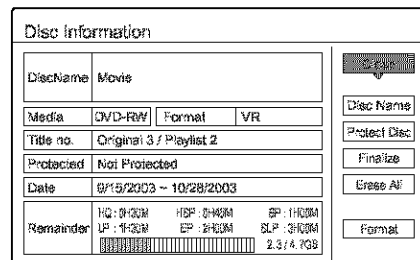
The disc name and recording format remain the same.

- Press **TOOLS** while the disc is in the recorder.

The **TOOLS** menu appears.

- Press **↑/↓** to select “Disc info.,” then press **ENTER**.

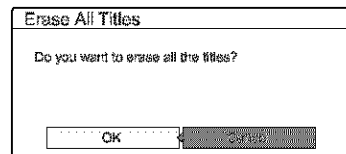
The Disc Information display appears.



- Press **↑/↓** to select “Erase All,” then press **ENTER**.

The display asks for confirmation.

When there is a protected title on the disc, a list of protected titles appears.

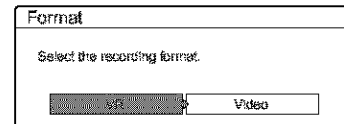


- Press **←/→** to select “OK,” then press **ENTER**.

The titles are erased.

- ◆ When you place a DVD-RW and set “Format Disc” to “Selectable” in Options Setup

The display asks you to select the recording format.



- Press **←/→** to select “VR” or “Video,” then press **ENTER**.

The recorder starts formatting the disc.

Notes

- Even when you have set protection for the title, all the contents will be erased after formatting the disc.
- A protected disc cannot be reformatted (DVD-RW in VR mode only).

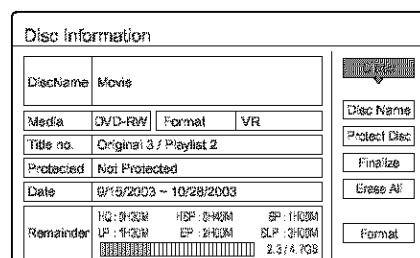
Reformatting a disc (Format)

-RW VR **-RW VIDEO** **+RW**

By reformatting, you can change the recording format of DVD-RWs, or record again on DVD-RWs (Video mode) that have been finalized. Make sure nothing important is left on the disc, as all the disc contents will be erased. For DVD+RWs, reformat the disc if you want to create a blank disc.

- Press **TOOLS** while the disc is in the recorder.
The TOOLS menu appears.
- Press **↑/↓** to select “Disc Info.,” then press **ENTER**.

The Disc Information display appears.



- Press **↑/↓** to select “Format,” then press **ENTER**.

The display asks for confirmation.

- Press **←/→** to select “OK,” then press **ENTER**.

Connecting a Digital Video Camera or Other Equipment

You can record from connected equipment, such as a digital video camera.

- Before Recording/Editing page 75
- Available DV Dubbing Functions page 77
- Recording an Entire DV/Digital8 Format Tape
 (ONE TOUCH DUB) **-RW VR** **-RW VIDEO** **+RW**
-R page 78
- Program Edit **-RW VR** **-RW VIDEO** **+RW** **-R** page 79
- Advanced Program Edit **-RW VR** page 81
- Re-editing the "program" in the DV/D8 Edit List
-RW VR page 84
- Creating a Copy of the Edited Contents (Copy
 Dubbing) **-RW VR** **-RW VIDEO** **+RW** **-R** page 86
- Recording From Equipment Connected to the
 LINE IN Jacks **-RW VR** **-RW VIDEO** **+RW**
-R page 88

Before Recording/Editing

The recorder has a DV IN jack that inputs digital signals, and LINE jacks that input/output analogue signals.

The DV IN jack on this recorder conforms to the i.LINK standard. You can connect other equipment that has an i.LINK (DV) jack. For more information, see "About i.LINK" (page 106).

If you plan to do additional editing on a disc after the initial dub, use the DV IN jack and record on a DVD-RW in VR mode.

◆When recording from the DV IN jack

See "Preparing for recording using the DV IN jack" below.

◆When recording from the LINE IN jacks

See "Recording From Equipment Connected to the LINE IN Jacks" (page 88).

Preparing for recording using the DV IN jack

You can connect a digital video camera to the DV IN jack on the recorder to record or edit from a DV/Digital8 format tape.

Operation is smooth because the recorder will fast forward and rewind the tape for you -- you do not need to operate your digital video camera. Do the following to start using the DV Edit functions of this recorder.

See also the instruction manual supplied with the digital video camera before connecting.

◆If you connect a digital video camera but cannot use the DV Edit functions

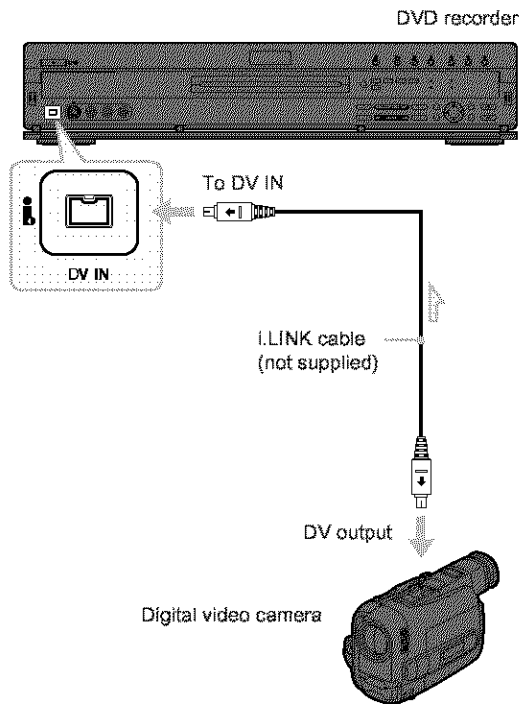
See "Recording from connected equipment" (page 88).


Notes

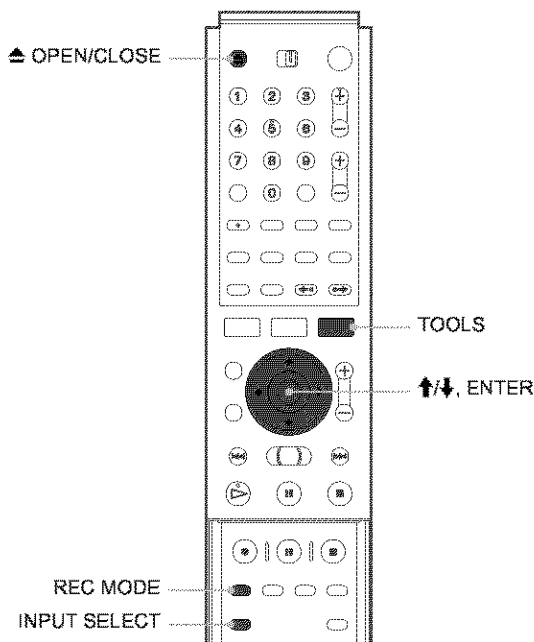
- The DV IN jack on this recorder is for input only. If you want to have the recorder output signals, for example, when you use this recorder as source player, connect other equipment to this recorder's LINE OUT jacks.
- Only DVC-SD format signals can be input to the DV IN jack on this recorder. Do not connect a MICRO MV format digital video camera even if it has an i.LINK jack.
- Recording may be limited if the images on the tape contain copyright protection signals.

→continued

Hookups



 : Signal flow

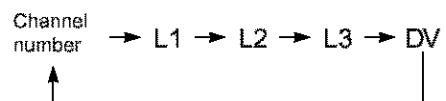


- 1** Turn on your TV and this recorder, then set the TV to the connected channel (“VIDEO” etc.).
- 2** Press **▲ OPEN/CLOSE**, and place a recordable disc on the tray. Make sure that the disc has enough free space to record the contents of your tape.

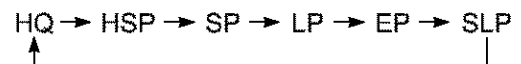
- 3** Press **▲ OPEN/CLOSE** to close the disc tray. Wait until “LOAD” disappears from the front panel display. If you use an unused DVD, formatting starts automatically. When using an unused DVD-RW, select the recording format, VR or Video.

- 4** Insert the source DV/Digital8 format tape into the digital video camera. For the recorder to record or edit, the digital video camera must be set to video playback mode.

- 5** Press **INPUT SELECT** on the remote repeatedly to select “DV.” The front panel display changes as follows.



- 6** Press **REC MODE** on the remote repeatedly to select the recording mode. The recording mode changes as follows:



- 7** Select the audio input for the digital video camera using the **TOOLS** menu.

- 1** Press **TOOLS**.
- 2** Press **▲/▼** to select “DV/D8 Audio Input,” then press **ENTER**.
- 3** Press **▲/▼** to select the item, then press **ENTER**.
 - Stereo1 (default)
 - Mix (both stereo 1 and stereo 2)
 - Stereo2

You are ready to start recording.

Hints

- You can adjust the settings for the recording picture before recording. See “Adjusting the Recording Picture Quality and Size” (page 46).
- If you plan to re-edit the “program” (page 77), insert a DVD-RW and format it in VR mode.

Notes

- You cannot connect more than two pieces of digital video equipment to the recorder.
- Depending on the digital video equipment, you may not be able to control the equipment.
- You cannot control the recorder using another device or another recorder of the same model.
- You cannot record date, time or the contents of the cassette memory onto the disc.
- If you record from a DV/Digital8 format tape with a sound track that is recorded in multiple sampling frequencies (48 kHz, 44.1 kHz, or 32 kHz), no sound will be output when playing back the switched point on the disc.
- In order to use this recorder’s Auto Scene Chaptering feature, be sure to correctly set the clock on your digital video camera before shooting.
- The recorded picture may be momentarily affected if the picture size of the source image changes, or if there is nothing recorded on the tape.

Available DV Dubbing Functions

◆One Touch Dub (page 78)

Records the entire contents of a DV/Digital8 format tape to a disc of your choice with a single touch of the ONE TOUCH DUB button.

◆Program Edit (page 79)

Allows you to select scenes from a DV/Digital8 format tape, and then record the selected scenes to a disc of your choice. As you select the scenes, you will create a "program" (see below), which will then be used to dub the selected scenes to a disc. Before you dub the scenes, you can rearrange the order and make other changes using the "Scene List" (see below).

◆Advanced Program Edit (page 81)

Allows you to select scenes from a DV/Digital8 format tape by first recording the entire contents of the tape to a DVD-RW (VR mode), whereupon you can easily create a "program" (see below). By first copying the entire contents of the tape to a disc, the start and stop points on the tape automatically become scenes (you can also select scenes manually). These scenes are displayed in a "scene list" (see below). You can then delete, rearrange, or select new scenes to create a "program." Once the "program" is complete, you will use it to copy the scenes to a disc of your choice from the "DV/D8 Edit List" (see below). Furthermore, you can also automatically create a Playlist of the edited scenes and save it on the DVD-RW (VR mode) you used to originally record the entire contents of the tape.

◆Re-editing the "program" in the DV/D8 Edit List (DVD-RW in VR mode only) (page 84)

Allows you to select the "program" (see below) created during One Touch Dub or Advanced Program Edit from the "DV/D8 Edit List" (see below), and make further edits before copying the contents to a disc. You can delete or create new scenes, or rearrange the order of existing scenes.

◆Copy Dubbing (page 86)

Allows you to make duplicate copies of the "programs" (see below) in the "DV/D8 Edit List" (see below) to a disc of your choice. When making copies, you will need the original DV/Digital8 format tapes used to create the "program."

About "programs"

"Programs" are automatically created whenever you make a One Touch Dub, Program Edit, or Advanced Program Edit. These programs are stored in the "DV/D8 Edit List" (see below) and contain editing information such as which scenes have been selected, moved, or deleted.

Programs are useful when you want to make duplicates of the edited contents because you do not have to select the same scenes again from the tape — just select the program. You can also re-edit the program to create different variations of the original program. Note that programs contain only the start and stop points of the scenes; they do not contain the actual scenes themselves so you need to use the original DV/Digital8 format tapes to copy a program to a disc.

◆About the "DV/D8 Edit List"

The "DV/D8 Edit List" contains the "programs." If you re-edit the program, the re-edited program is stored in the DV/D8 Edit List, but the original program is lost. You can store up to 20 programs in the DV/D8 Edit List.

1	2	3	4
Disc icon	DV/D8 EDIT LIST		
	DV12/11/02	1:00PM - 12/11/02	7:05PM 1H10M 6/10
	DV12/24/02	11:34AM - 12/23/02	1:24PM 1H24M 6/18

- 1 Disc mark
- 2 Program name
- 3 Total playing time
- 4 Date of editing or recording

◆About the "Scene List"

The contents of the programs are contained in the "Scene List." A thumbnail of each scene, as well as the length of the scene is displayed in the list. You can add or delete scenes, or change the order of the scenes. 50 scenes can be made for each program.

1	2	3	4
	SCENE LIST	Total 1:23:30	Scenes 20
1		0:00:30-0:00:52 Duration 0:00:22	OK Quit
2		0:01:40-0:06:29 Duration 0:08:49	
3		0:07:07-0:10:51 Duration 0:03:44	
4		0:11:40-0:16:18 Duration 0:04:38	

- 1 Thumbnail picture
- 2 Time information
- 3 Total duration of the program
- 4 Total number of scenes

Note

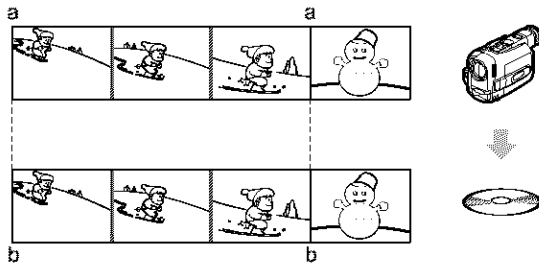
After you make a dubbing, do not throw away or record over your tapes. You will need them later to make additional edits or copies.

Recording an Entire DV/ Digital8 Format Tape (ONE TOUCH DUB)

-RW VR **-RW VIDEO** **+RW** **-R**

You can record the entire contents of a DV/Digital8 format tape onto a disc with a single press of the ONE TOUCH DUB button. The recorder controls the digital video camera for the whole process, and completes the recording.

Example for all disc types



When using a DVD-RW (VR mode), chapter marks [b] are marked where the recordings start on the tape [a] (Auto Scene Chaptering).

For other discs, the recorder marks chapters either in 6 or 15 minute intervals depending on the setting in "Auto Chapter" in Features Setup (page 97).

Follow steps 1 to 7 of "Preparing for recording using the DV IN jack" (page 75), then press ONE TOUCH DUB on the front panel of the recorder.

The recorder rewinds the tape and then starts recording the tape contents.

When the recording is finished, the recorder rewinds the tape in the digital video camera, and turns off.

To stop during recording

Press ■ REC STOP.

Hints

- The date and time of the recording made with your digital video camera is assigned as the program name in the DV/D8 Edit List (page 84) (example: DV 10/25/03 10:00PM – 10/31/03 11:30PM).
- If you set "Finalize Disc" to "Auto" in Features Setup (page 98), the recorded disc will automatically be finalized after recording is finished.

Notes

- The recorder does not start One Touch Dub when you set "Add to Edit List" to "On" (default) in Features Setup (page 98) and there are already twenty programs on the recorder. In this case, the recorder beeps and the front panel display lights up. Delete unnecessary programs from the DV/D8 Edit List menu (page 84) and repeat the steps above.
- When a blank space on the tape continues for more than five minutes, One Touch Dub ends automatically.
- This function may not work with certain digital video cameras. In this case, follow the instructions of "Recording From Equipment Connected to the LINE IN Jacks" (page 88).
- In order for a One Touch Dub recording to be added to the DV/D8 Edit List, "Add to Edit List" in Features Setup must be set to "On" (default) (page 98).

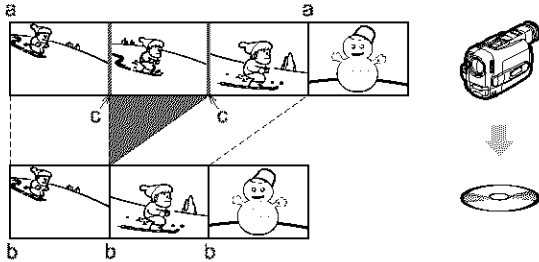
- The recorder automatically records a blank for five minutes before it stops dubbing. When you press ■ REC STOP, the recorder stops recording, rewinds the tape, and turns off.

Program Edit

-RW VR **-RW VIDEO** **+RW** **-R**

You can select scenes from a DV/Digital8 format tape, and then automatically record selected scenes to a disc of your choice.

Example for DVD-RWs (VR mode)



When using a DVD-RW (VR mode), chapter marks [b] are marked where the recordings start on the tape [a] (Auto Scene Chaptering). Chapter marks are also inserted at the IN points of the selected scenes [c].

For other discs, the recorder marks chapters either in 6 or 15 minute intervals depending on the setting in "Auto Chapter" in Features Setup (page 97).

To use this function, you will do the following:

Connect your digital video camera and prepare for recording



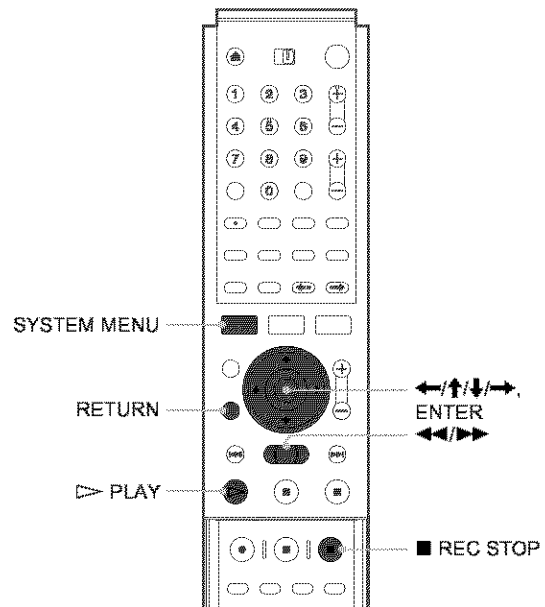
Select and edit the scenes you want to dub

Using the recorder's remote control, you will fast forward or rewind the tape to select the scenes. At this point, the selected scenes are not copied to the disc. The recorder only remembers the IN and OUT points of the scenes that you selected for dubbing. You can also reset, erase, or change the order of the scenes.



Dub the selected scenes to a disc

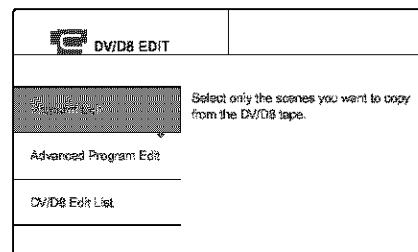
After you have selected the scenes, the recorder will fast forward and rewind the tape automatically and record the scenes to a disc of your choice.



1 Follow steps 1 to 7 of "Preparing for recording using the DV IN jack" (page 75), then press **SYSTEM MENU**.

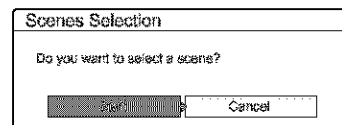
2 Press **↑/↓** to select "DV/D8 EDIT," then press **ENTER**.

The DV/D8 Edit menu appears.



3 Press **↑/↓** to select "Program Edit," then press **ENTER**.

The display asks whether to start selecting scenes.



◆ **If you have previously saved a program**

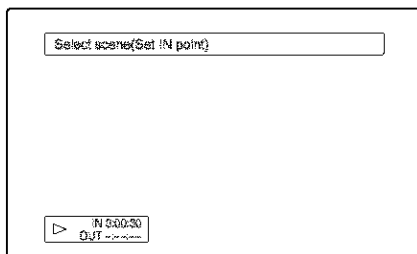
The display asks whether to edit an existing program or to create a new program. To resume editing the existing program, select "Saved Data."

4 Press **←/→** to select "Start," then press **ENTER**.

The display for setting the IN point (start of the scene on the tape) appears.

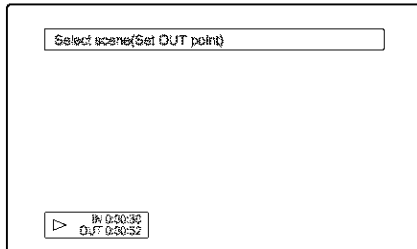
5 Press **▷ PLAY** to start playback of the tape in your digital video camera.

The scene starts to play in the background.



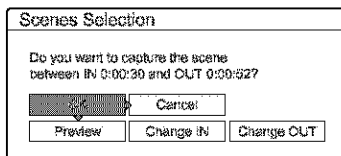
- 6** While watching the playback picture, search for the IN point by pressing ◀◀ or ▶▶, then press ENTER.

The display for setting the OUT point (end of the scene on the tape) appears. The scene starts to play in the background from the IN point.



- 7** While watching the playback picture, search for the OUT point by pressing ◀◀ or ▶▶, then press ENTER.

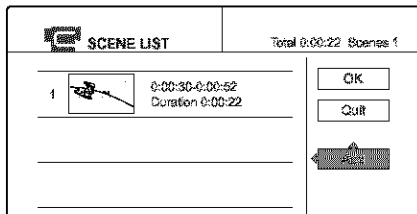
The display asks whether to add the selected scene to the Scene List menu.



To preview the scene, select "Preview." To reset either the IN or OUT point, select "Change IN" or "Change OUT." Repeat from step 5.

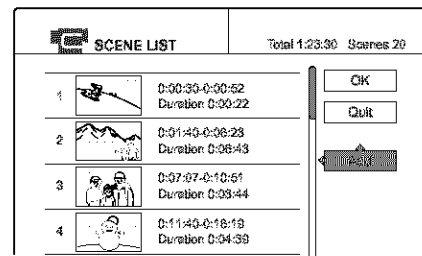
- 8** Press ◀/↑/↓/▶ to select "OK," then press ENTER.

A new Scene List menu appears with the selected scene.



- 9** Press ◀/↑/↓/▶ to select "Add" and press ENTER. Then repeat steps 5 to 9 to select all the scenes you want to include.

You can add up to 50 scenes to a title.



To edit the Scene List, select a scene by pressing ◀/↑/↓/▶, and then press ENTER. When the sub-menu appears, select an edit option you want to apply to the scene.

◆ To erase the scene

- Press ↑/↓ to select "Erase," then press ENTER.
- When the display asks for confirmation, press ◀/▶ to select "OK," then press ENTER.

◆ To move the scene

- Press ↑/↓ to select "Move," then press ENTER. The display for selecting the scene insertion point appears.
- Press ↑/↓ to select the point, then press ENTER. The scene moves to the selected location.

◆ To reset the start or end of the scene

Press ↑/↓ to select "Change IN" or "Change OUT," then press ENTER.

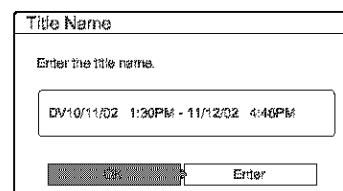
◆ To preview the scene

Press ↑/↓ to select "Preview," then press ENTER.

To cancel, press ◀/↑/↓/▶ to select "Quit" in the Scene List menu, then press ENTER.

- 10** When you finish editing the Scene List, press ◀/↑/↓/▶ to select "OK," then press ENTER.

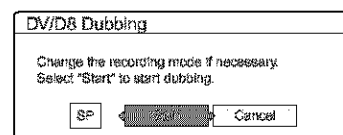
The display for entering a title name appears.



To enter a new name, select "Enter," and follow the explanations on page 34.

- 11** To use the default name, press ◀/▶ to select "OK," then press ENTER.

The default title name is fixed, and the display asks whether to start recording. If you want to change the recording mode, press ◀/▶ to move the cursor, then press ↑/↓ to select the mode.



- 12** Press **←/→** to select “Start,” then press **ENTER**.
The recorder starts recording the tape contents as programmed.
To quit recording, press **■ REC STOP**.

- 13** When the recording is finished, press **ENTER** to select “Close.”
The display returns to the DV/D8 Edit menu.

- 14** Press **RETURN** repeatedly to turn off the display.

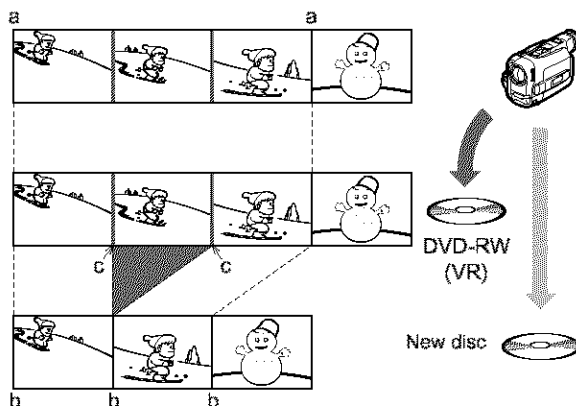
Notes

- The disc may not be recorded as programmed if the tape’s time code is not sequential or there are blanks between the recordings on the tape. In this case, follow the instructions of “Recording From Equipment Connected to the LINE IN Jacks” (page 88).
- The start and end points of a program may be different from what you have set if the source DV/Digital8 format tape is in any of the following conditions:
 - Recording mode was changed during the recording.
 - There is a blank space in the recorded portion of the tape.
- If you set the beginning of the tape as the IN point and the end point as the OUT point, the IN and OUT points may change slightly during dubbing.
- You cannot set a scene shorter than one second.
- This function may not work with certain digital video cameras. In this case, follow the instructions of “Recording From Equipment Connected to the LINE IN Jacks” (page 88).

Advanced Program Edit

-RW VR

You can quickly edit a DV/Digital8 format tape by first copying the entire contents of the tape to a DVD-RW (VR mode) and then select the scenes you want from the disc. After you select the scenes, you can change discs and record the scenes to another disc of your choice. If necessary, you can also create a Playlist title of the selected scenes in the DVD-RW (VR mode).



When dubbing to a DVD-RW (VR mode), chapter marks [b] are marked where the recordings start on the tape [a] (Auto Scene Chaptering). Chapter marks are also inserted at the IN points of the selected scenes [c].

To use this function, you will do the following:

Connect your digital video camera and prepare for recording



Record the entire contents of the DV/Digital8 tape to a DVD-RW (VR mode)



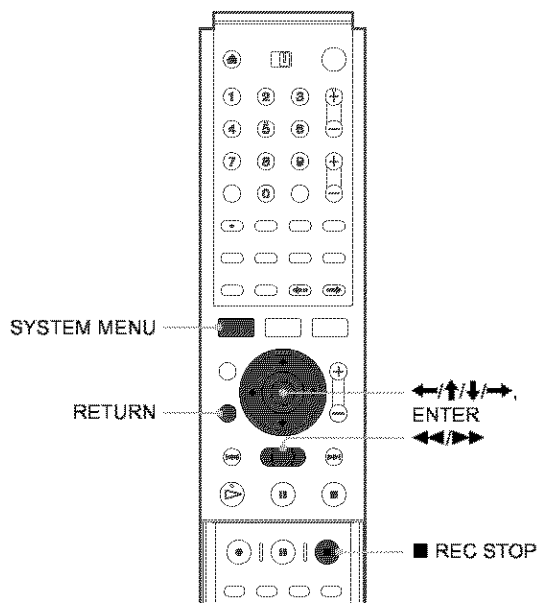
Select and edit the scenes you want to dub

Taking advantage of the disc’s quick accessibility, you will select the scenes you want from the recorded DVD-RW. You do not have to fast forward or rewind the tape as explained in “Program Edit” (page 79). You can also reset, erase, or change the order of the scenes.



Dub the scenes to another disc

After you have selected the scenes, you can dub the selected scenes to another disc of your choice. Or, you can create a Playlist of the selected scenes.

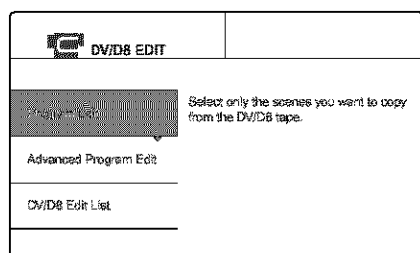


- 1 Follow steps 1 to 7 of “Preparing for recording using the DV IN jack” (page 75), then press **SYSTEM MENU**.

Insert a DVD-RW (VR mode) into the recorder. Make sure that the disc has enough free space to record the contents of your tape.

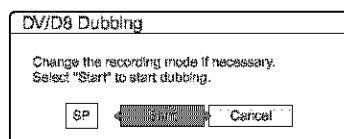
- 2 Press **↑/↓** to select “DV/D8 EDIT,” then press **ENTER**.

The DV/D8 Edit menu appears.



- 3 Press **↑/↓** to select “Advanced Program Edit,” then press **ENTER**.

The display asks whether to start recording.

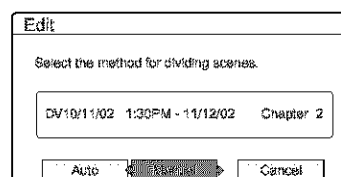


If you want to change the recording mode, press **←/→** to move the cursor, then press **↑/↓** to select the mode.

- 4 Press **←/→** to select “Start,” then press **ENTER**.

The recorder starts recording the tape contents. To quit recording, press **■ REC STOP**.

When recording is finished, the display asks if you want to create scenes within the generated program automatically or manually, or quit editing.



- ◆ To create scenes automatically

Press **←/→** to select “Auto,” then press **ENTER**. The recorder divides the generated program into scenes, and the Scene List menu appears.

- ◆ To create scenes manually

- 1 Press **←/→** to select “Manual,” then press **ENTER**.

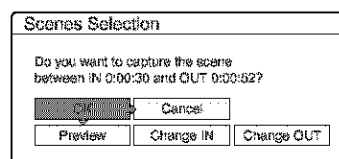
The display for setting the IN point appears. The scene starts to play in the background.

- 2 While watching the playback picture, press **◀◀** or **▶▶** to search for the IN point, then press **ENTER**.

The IN point is set, and the display for setting the OUT point (end of the scene) appears.

- 3 While watching the playback picture, press **◀◀** or **▶▶** to search for the OUT point, then press **ENTER**.

The OUT point is set, and the display asks whether to add the selected scene to the Scene List menu.



- To preview the scene, select “Preview.”
- To reset either the IN or OUT point, select “Change IN” or “Change OUT.”

- 4 Press **←/↑/↓/→** to select “OK,” then press **ENTER**.

A new Scene List menu appears with the selected scene.

- 5 Press **←/↑/↓/→** to select “Add,” then press **ENTER**.

The display for selecting the scene insertion point appears.

- 6 Press **↑/↓** to select the insertion point in the Scene List, then press **ENTER**.

The display for setting the IN point (start of the scene) appears.

- 7 Repeat steps 2 to 6 to create all the scenes you want to add to the Scene List.

You can add up to 50 scenes.

- ◆ To quit editing

Press **←/→** to select “Cancel,” then press **ENTER**.

- 5 To edit the Scene List, press **←/↑/↓/→** to select a scene in the Scene List menu and press **ENTER**.

When the sub-menu appears, select an edit option you want to apply to the scene.

◆ To erase the scene

- ① Press **↑/↓** to select “Erase,” then press **ENTER**.
- ② When the display asks for confirmation, press **←/→** to select “OK,” then press **ENTER**.

◆ To move the scene

- ① Press **↑/↓** to select “Move,” then press **ENTER**.
The display for selecting the scene insertion point appears.
- ② Press **↑/↓** to select the point, then press **ENTER**.
The scene moves to the selected location.

◆ To reset the start or end of the scene

Press **↑/↓** to select “Change IN” or “Change OUT,” then press **ENTER**.

◆ To preview the scene

Press **↑/↓** to select “Preview,” then press **ENTER**.

To cancel, press **←/↑/↓/→** to select “Quit” in the Scene List menu, then press **ENTER**.

- 6** When you finish creating the Scene List, press **←/↑/↓/→** to select “OK,” then press **ENTER**.

The edited program is saved, and the display asks if you want to create a Playlist title.

If you select “No,” the display returns to the DV/D8 Edit menu. Go to step 9.

- 7** Press **←/→** to select “Yes,” then press **ENTER**.

The display for entering a Playlist title name appears. To enter a new name, select “Enter,” and follow the explanations on *page 34*.

- 8** To use the default name, press **←/→** to select “OK,” then press **ENTER**.

A Playlist title of the default title name is created on the same disc, and the display returns to the DV/D8 Edit menu.

You now have a disc containing both the entire contents of the DV/Digital8 format tape and a Playlist of the selected scenes.

To edit the Playlist title, see “Advanced Editing (Playlist Edit)” (*page 67*).

- 9** Dub the selected scenes to a disc.

Make copies of the selected scenes to a disc of your choice. Go to step 3 of “Creating a Copy of the Edited Contents (Copy Dubbing)” (*page 86*).

Notes

- The disc may not be recorded as programmed if the tape’s time code is not sequential or there are blanks between the recordings on the tape. In this case, follow the instructions of “Recording From Equipment Connected to the LINE IN Jacks” (*page 88*).
- You cannot set a scene to be shorter than one second.
- The start and end point of a program may be different from what you have set if the source DV/Digital8 format tape is in any of the following conditions:
 - Recording mode was changed during the recording.
 - There is a blank space in the recorded portion.
- This function may not work with certain digital video cameras. In this case, follow the instructions of “Recording From Equipment Connected to the LINE IN Jacks” (*page 88*).
- In step 4, the recorder automatically records a blank for five minutes before it stops dubbing. When you press **■ REC STOP**, the recorder stops recording.

Re-editing the "program" in the DV/D8 Edit List

-RW VR

Each time you dub a DV/Digital8 format tape, the start and stop points of the selected scenes (called a "program") are saved in a DV/D8 Edit List. You can make additional changes to these "programs" if they were created by One Touch Dub or Advanced Program Edit on a DVD-RW (VR mode). You can reset, erase, or change the order of the scenes and then dub the re-edited program to a disc of your choice.

To use this function, you will do the following:

Connect your digital video camera and prepare for editing

Be sure to use the original DV/Digital8 format tape and the DVD-RW (VR mode) that corresponds to the program in the DV/D8 Edit List.



Select a program from the DV/D8 Edit List

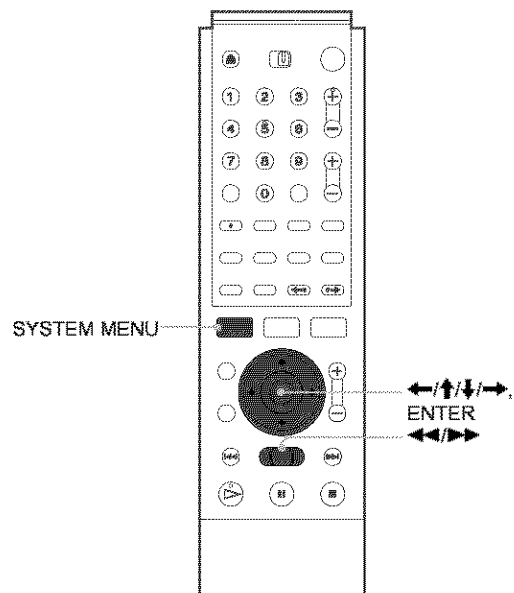


Edit the program in the DV/D8 Edit List



Dub the selected scenes to a disc

The recorder will fast forward and rewind the tape automatically and record the scenes to a disc of your choice.

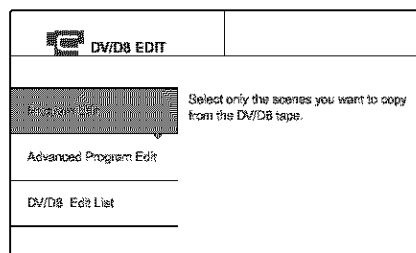


- 1 Follow steps 1 to 4 of "Preparing for recording using the DV IN jack" (page 75), then press **SYSTEM MENU**.

Be sure to use the original DV/Digital8 format tape and the DVD-RW (VR mode) that corresponds to the program in the DV/D8 Edit List.

- 2 Press **↑/↓** to select "DV/D8 EDIT," then press **ENTER**.

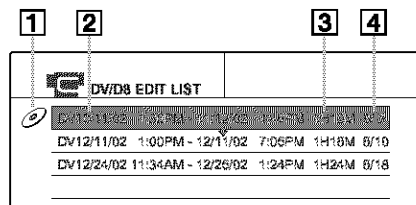
The DV/D8 Edit menu appears.



- 3 Press **↑/↓** to select "DV/D8 Edit List," then press **ENTER**.

The DV/D8 Edit List menu appears.

A disc mark will appear next to the program that corresponds to the inserted disc. You can only edit the programs that display a disc mark (1).



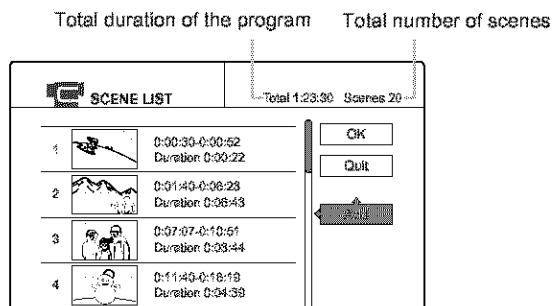
- 1 Disc mark
- 2 Program name
- 3 Total playing time
- 4 Date of editing or recording

- 4 Press **↑/↓** to select the program you want to edit, then press **ENTER**.

The sub-menu appears.

- 5 Press **↑/↓** to select "Edit," then press **ENTER**.

The Scene List menu appears with all the scenes the program contains.



◆ To add a new scene to the Scene List

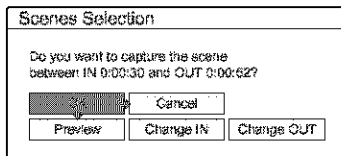
- 1 Press **←/↑/↓/→** to select "Add," then press **ENTER**.

The display for selecting the scene insertion point appears.

- 2 Press **↑/↓** to select the insertion point in the Scene List, then press **ENTER**.

The display for setting the IN point (start of the scene) appears.

- ③ While watching the playback picture, press ◀ or ▶ to search for the IN point, then press ENTER.
The IN point is set, and the display for setting the OUT point (end of the scene) appears.
- ④ While watching the playback picture, press ◀ or ▶ to search for the OUT point, then press ENTER.
The OUT point is set, and the display asks whether to add the selected scene to the Scene List menu.



- To preview the scene, select "Preview."
 - To reset either the IN or OUT point, select "Change IN" or "Change OUT."
- ⑤ Press ◀/↑/↓/▶ to select "OK," then press ENTER.
A new Scene List menu appears with the selected scene. To add another scene, repeat from step ①.
- ◆ If you select a program that contains no scenes
The display asks whether to generate scenes within the selected program.
To generate scenes automatically, press ◀/▶ to select "Auto," then press ENTER.
Scenes are generated and a new Scene List menu appears.
To capture scenes manually, select "Manual," then press ENTER. The display for adding a scene appears. Follow steps ③ to ⑤ above. You can add a maximum of 50 scenes.
- ⑥ Press ↑/↓ to select the scene you want to edit, then press ENTER.
The sub-menu appears.
- ⑦ Press ↑/↓ to select the edit option you want to apply to the scene, then press ENTER.
- ◆ To erase the scene
 - ① Press ↑/↓ to select "Erase," then press ENTER.
 - ② When the display asks for confirmation, press ◀/▶ to select "OK," then press ENTER.
 - ◆ To move the scene
 - ① Press ↑/↓ to select "Move," then press ENTER.
The display for selecting the scene insertion point appears.
 - ② Press ↑/↓ to select the point, then press ENTER.
The scene moves to the selected location.

- ◆ To reset the start or end of the scene
Press ↑/↓ to select "Change IN" or "Change OUT," then press ENTER.
 - ◆ To preview the scene
Press ↑/↓ to select "Preview," then press ENTER.
- To cancel, press ◀/↑/↓/▶ to select "Quit" in the Scene List menu, then press ENTER.

- ⑧ When you finish editing the Scene List, press ◀/↑/↓/▶ to select "OK," then press ENTER.
The display asks if you want to make a Playlist title. If you select "No," the edited program is saved, and the display returns to the DV/D8 Edit List. Note that the original program will be rewritten.
To dub the selected scenes to a disc, go to step 4 of "Creating a Copy of the Edited Contents (Copy Dubbing)" (page 86).

- ⑨ Press ◀/▶ to select "Yes," then press ENTER.
The display for entering a Playlist title name appears. To enter a new name, select "Enter," and follow the explanations on page 34.
- ⑩ To use the default name, press ◀/▶ to select "OK," then press ENTER.
A Playlist title of the default title name is created on the same disc, and the display returns to the DV/D8 Edit List.
You now have a disc containing both the entire contents of the DV/Digital8 format tape and a Playlist of the selected scenes.
To edit the Playlist title, see "Advanced Editing (Playlist Edit)" (page 67).

- ⑪ Dub the selected scenes to a disc.
Make copies of the selected scenes to a disc of your choice. Go to step 4 of "Creating a Copy of the Edited Contents (Copy Dubbing)" (page 86).

To preview a program

After you edit a program, you can preview the changes you made.

- 1 While the DV/D8 Edit List is displayed, press ↑/↓ to select the program, then press ENTER.
- 2 Press ↑/↓ to select "Preview," from the sub-menu, then press ENTER.

To create a Playlist title of the program

After you edit a program, you can create a Playlist title of the edited program. The Playlist will be created on the inserted DVD-RWs (VR mode).

- 1 While the DV/D8 Edit List is displayed, press ↑/↓ to select the program, then press ENTER.
- 2 Press ↑/↓ to select "Make a Playlist," from the sub-menu, then press ENTER.
The display for entering a Playlist title name appears. To enter a new name, select "Enter," and follow the explanations on page 34.

→continued

- 3** To use the default name, press **←/→** to select “OK,” then press **ENTER**.

Notes

- You cannot set a scene to be shorter than one second.
- In order for a One Touch Dub recording to be added to the DV/D8 Edit List, “Add to Edit List” in Features Setup must be set to “On” (page 98).

Creating a Copy of the Edited Contents (Copy Dubbing)

-RW VR **-RW VIDEO** **+RW** **-R**

You can make copies of the programs in the DV/D8 Edit List. Each time you dub a DV/Digital8 format tape, the start and stop points of the selected scenes (called a “program”) are saved in a DV/D8 Edit List. You can select a program from the DV/D8 Edit List and use this information to copy the same contents onto another disc of your choice.

To use this function, you will do the following:

Connect your digital video camera and prepare for recording

Be sure to insert the original DV/Digital8 format tape that corresponds to the program in the DV/D8 Edit List.

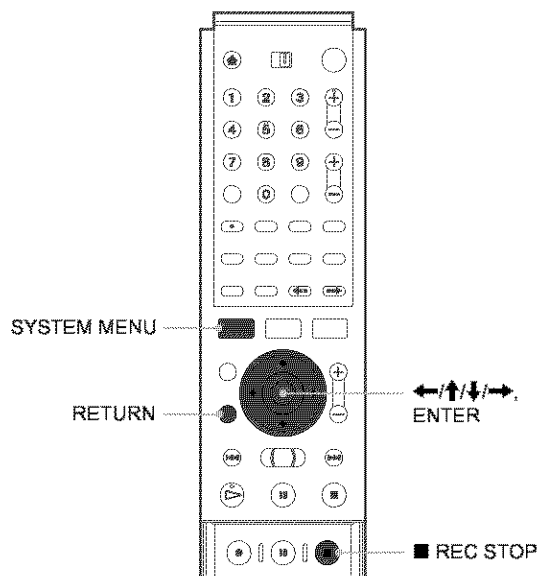


Select a program from the DV/D8 Edit List



Dub the selected scenes to a disc

The recorder will fast forward and rewind the tape automatically and record the scenes to a disc of your choice. On a DVD-RW (VR mode), chapter marks are inserted at the start of each scene and where the recordings start on the tape. For other discs, the recorder marks chapters either in 6 or 15 minute intervals depending on the setting in “Auto Chapter” in Features Setup (page 97).



- 1** Follow steps 1 to 7 of “Preparing for recording using the DV IN jack” (page 75), then press **SYSTEM MENU**.

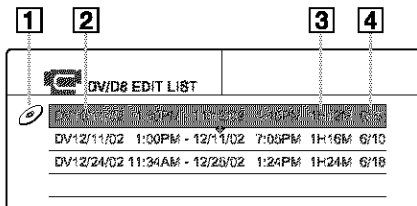
Be sure to insert the original DV/Digital8 format tape that corresponds to the program in the DV/D8 Edit List.

- 2** Press **↑/↓** to select “DV/D8 EDIT,” then press **ENTER**.

The DV/D8 Edit menu appears.

- 3** Press **↑/↓** to select “DV/D8 Edit List,” then press **ENTER**.

The DV/D8 Edit List menu appears.



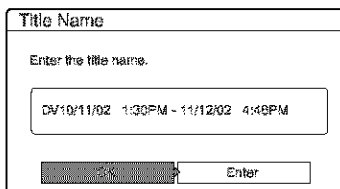
- 1** Disc mark
2 Program name
3 Total playing time
4 Date of editing or recording

- 4** Press **↑/↓** to select the program you want to record on a disc, then press **ENTER**.

The sub-menu appears.

- 5** Press **↑/↓** to select “DV Dubbing,” then press **ENTER**.

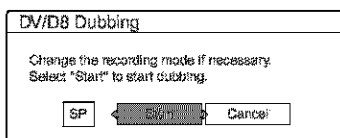
The display for entering a title name appears.



To enter a new name, select “Enter,” and follow the explanations on *page 34*.

- 6** To use the default name, press **←/→** to select “OK,” then press **ENTER**.

The default title name is fixed, and the display asks whether to start recording. If you want to change the recording mode, press **←/→** to move the cursor then press **↑/↓** to select the mode.



- 7** Press **←/→** to select “Start,” then press **ENTER**.

The recorder starts recording the tape contents as programmed.

To stop during recording, press **■ REC STOP**.

- 8** When the recording is finished, press **ENTER** to select “Close.”

The display returns to the DV/D8 Edit menu.

- 9** Press **RETURN** repeatedly to turn off the display.

To change the name of a program

- 1 While the DV/D8 Edit List is displayed, press **↑/↓** to select the program name you want to change, then press **ENTER**.
- 2 Press **↑/↓** to select “Rename” from the sub-menu, then press **ENTER**.
The display for entering the program name appears.
- 3 Enter a name by following the explanations on *page 34*.

To erase a program

- 1 While the DV/D8 Edit List is displayed, press **↑/↓** to select the program you want to erase, then press **ENTER**.
- 2 Press **↑/↓** to select “Erase” from the sub-menu, then press **ENTER**.
- 3 Press **←/→** to select “OK,” then press **ENTER**.

Hints

- You can preview the scenes within the program title by selecting “Preview” in step 5.
- On a DVD-RW (VR mode), chapter marks are inserted at the start of each scene and where the recordings start on the tape. For other discs, the recorder marks chapters either in 6 or 15 minute intervals depending on the setting in “Auto Chapter” in Features Setup (*page 97*).

Notes

- If you want to play the disc on other DVD equipment, finalize the disc (*page 73*).
- In order for a One Touch Dub recording to be added to the DV/D8 Edit List, “Add to Edit List” in Features Setup must be set to “On” (*page 98*).
- Copy dubbing may not work if you have edited sections that do not contain any recorded material.
- This function may not work with certain digital video cameras. In this case, follow the instructions of “Recording From Equipment Connected to the LINE IN Jacks” (*page 88*).

Recording From Equipment Connected to the LINE IN Jacks

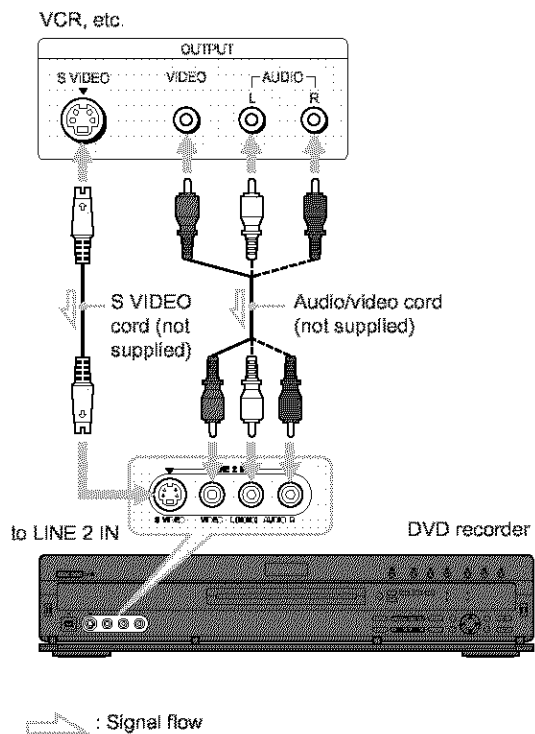
-RW VR **-RW VIDEO** **+RW** **-R**

You can connect other equipment (e.g. a VCR or video camera), and output the audio/video signals to the recorder for recording. Use the DV IN jack on the front panel if the equipment has a DV output jack (i.LINK jack).

See also the instruction manual supplied with the connected equipment.

Connecting other equipment to the LINE 2 IN jacks

You can monitor the recorded picture with a TV connected to the recording equipment.



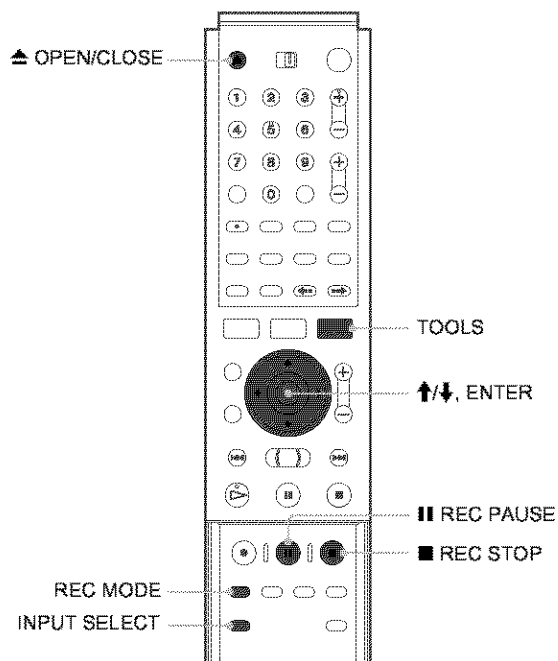
Hint

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

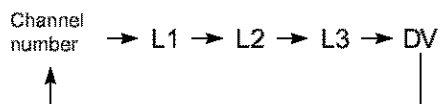
Notes

- Do not connect the yellow LINE IN (VIDEO) jack when using an S VIDEO cord (not supplied).
- 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.

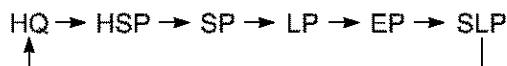
Recording from connected equipment



- 1 Turn on your TV and this recorder, then set it to the connected channel ("VIDEO," etc.).
- 2 Press **OPEN/CLOSE**, and place a recordable disc on the tray.
- 3 Press **OPEN/CLOSE** to close the disc tray. Wait until "LOAD" disappears from the front panel display.
- 4 Press **INPUT SELECT** to select a input source according to the connection you made. The front panel display changes as follows:



- 5 Press **REC MODE** repeatedly to select the recording mode. The recording mode changes as follows:



- 6** Select the audio input using the **TOOLS** menu.
- ① Press **TOOLS**.
 - ② Press **↑/↓** to select “Line Audio Input,” then press **ENTER**.
 - ③ Press **↑/↓** to select the item, then press **ENTER**.
 - Stereo (default)
 - Main/Sub*
- * When “Main/Sub” is selected, the two different types of sounds are recorded. You can select either sound when playing a disc. Select “Main/Sub” only when using a DVD-RW (VR mode). For other discs, select “Stereo.” Only stereo sound is recorded.
- 7** Press **|| REC PAUSE** to set this recorder to record pause.
- 8** Insert the source tape into the connected equipment and set to playback pause.
- 9** At the same, press **|| REC PAUSE** on this recorder and the pause or play button on the connected equipment.
Recording starts.
- 10** To stop recording, press **■ REC STOP** on this recorder.

◆ If you connect a digital video camera with a DV IN jack (without using the DV Edit functions)

- Select “DV” in step 4.
- Select “Stereo1,” “Mix,” or “Stereo2” from “DV/D8 Audio Input” in step 6.

💡 **Hint**

You can adjust the settings for the recording picture before recording. See “Adjusting the Recording Picture Quality and Size” (page 46).

Note

When recording a video game image, the screen may not be clear.

Settings and Adjustments

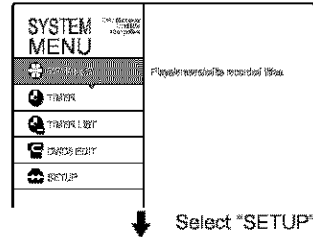
The Setup Displays allow you to adjust the recorder to suit your preferences. This section first lists the types of Setup Displays, and then explains how to use the Setup Displays (*Using the Setup Displays*).

- *About the Setup Display Structure* page 90
- *Using the Setup Displays* page 91
- *Settings (Basic Settings)* page 92
- *Video Settings* page 94
- *Audio Settings* page 95
- *Features Settings* page 97
- *Options Settings* page 99
- *Easy Setup (Resetting the Recorder)* page 100

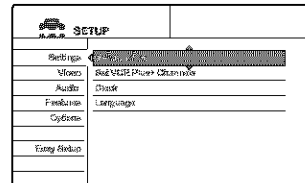
About the Setup Display Structure

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.

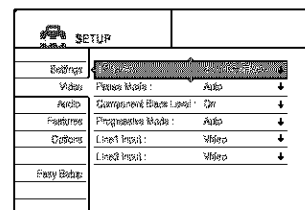
System Menu



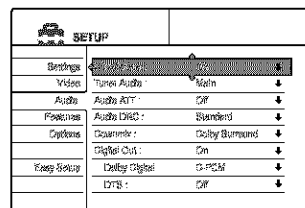
Setup Displays



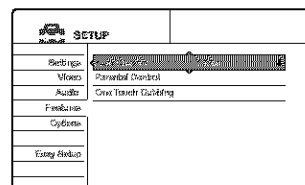
1. "Settings"
(page 92)



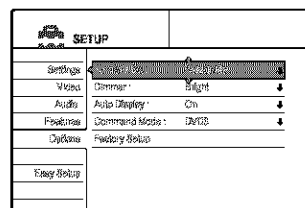
2. "Video"
(page 94)



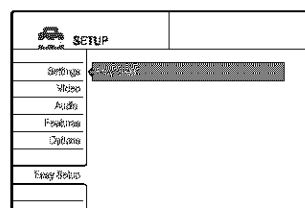
3. "Audio"
(page 95)



4. "Features"
(page 97)



5. "Options"
(page 99)



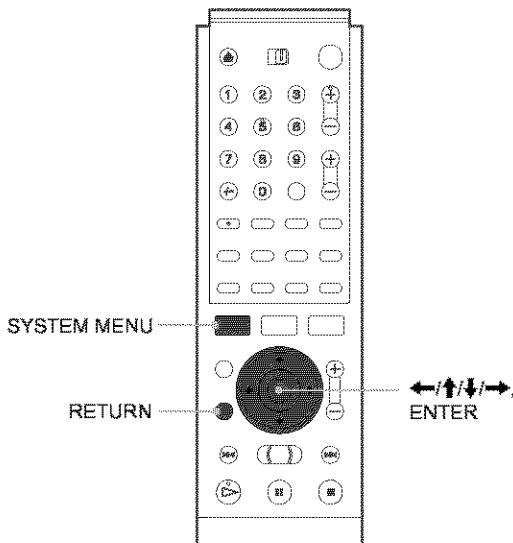
6. "Easy Setup"
(page 100)

Using the Setup Displays

The Setup Displays are used in the following way.

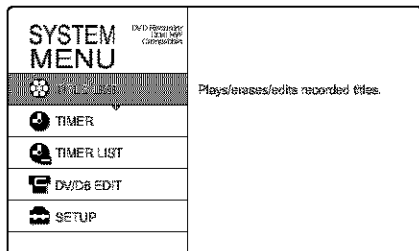
Note

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



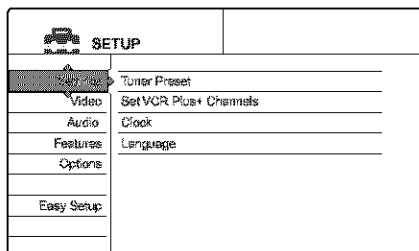
- 1 Press **SYSTEM MENU** while the recorder is stopped.

The System Menu appears.



- 2 Press **↑/↓** to select "SETUP," then press **ENTER**.

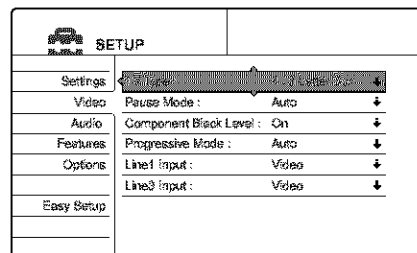
The Setup Display appears.



- 3 Press **↑/↓** to select "Settings," "Video," "Audio," "Features," "Options," or "Easy Setup," then press **ENTER**.

The selected Setup Display appears.

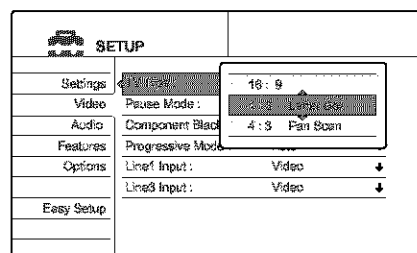
Example: "Video"



- 4 Press **↑/↓** to select the item you want to set up, then press **ENTER**.

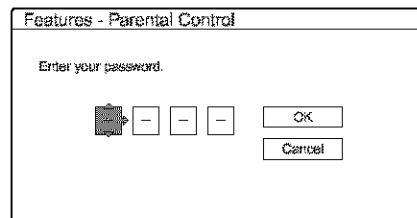
Available options for the item appear.

Example: "TV Type"



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

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

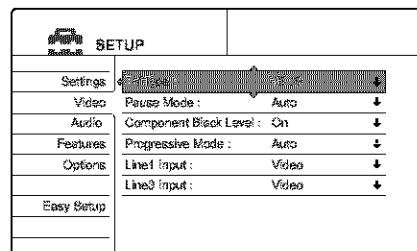


In this case, see "Parental Control" in "Features Settings" (page 97).

- 5 Press **↑/↓** to select an option, then press **ENTER**.

The set option is displayed next to the setup item.

Example: when "16:9" is set.



To turn off the display

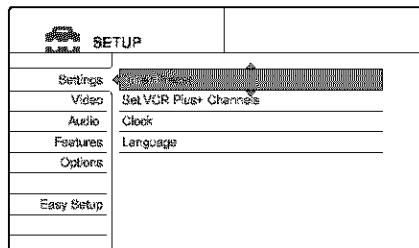
Press **SYSTEM MENU** repeatedly.

Settings (Basic Settings)

The Settings Setup helps you to make fundamental settings for the recorder.

Select "Video" in the Setup Display. To use the display, see "Using the Setup Displays" (page 91).

The default settings are underlined.

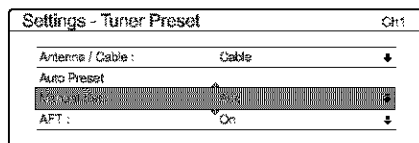


Tuner Preset

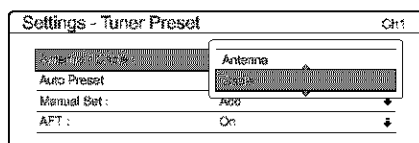
◆Auto Preset

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 91) to select "Settings" in the Setup Display.
- 2 Press \uparrow/\downarrow to select "Tuner Preset," then press ENTER.

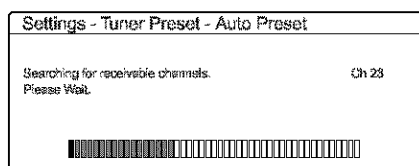


- 3 Press \uparrow/\downarrow to select "Antenna/Cable," then press ENTER.



- ◆ To preset cable TV channels
Press \uparrow/\downarrow to select "Cable," then press ENTER.
- ◆ To preset VHF and UHF channels
Press \uparrow/\downarrow to select "Antenna," then press ENTER.

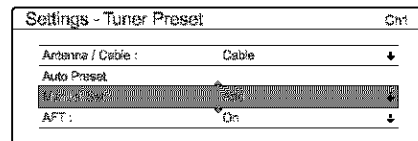
- 4 Press \uparrow/\downarrow to select "Auto Preset," then press ENTER.
All receivable channels are preset in numerical sequence.



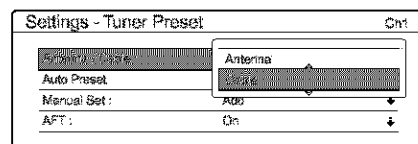
◆Manual Set

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. If there is no sound or if the picture is distorted, the tuner system may not have been preset correctly or completely during Auto Preset or Easy Setup. Set the correct tuner system manually by the steps below.

- 1 Follow steps 1 to 3 of "Using the Setup Displays" (page 91) to select "Settings" in the Setup Display.
- 2 Press \uparrow/\downarrow to select "Tuner Preset," then press ENTER.

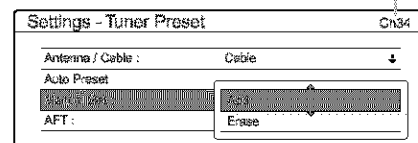


- 3 Press \uparrow/\downarrow to select "Antenna/Cable," then press ENTER.



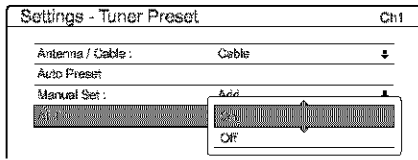
- ◆ To preset cable TV channels
Press \uparrow/\downarrow to select "Cable," then press ENTER.
 - ◆ To preset VHF and UHF channels
Press \uparrow/\downarrow to select "Antenna," then press ENTER.
- 4 Select the channel you want to preset or disable.

Channel to be preset/disabled



- ◆ To preset a channel
 - ① Enter the channel number using the number button(s), then press SET.
 - ② Press \uparrow/\downarrow to select "Manual Set," then press ENTER.
 - ③ Press \uparrow/\downarrow to select "Add," then press ENTER.
- ◆ To disable a channel
 - ① Press CH +/- to select the channel number.
 - ② Press \uparrow/\downarrow to select "Manual Set," then press ENTER.
 - ③ Press \uparrow/\downarrow to select "Erase," then press ENTER.

5 Press **↑/↓** to select “AFT,” then press **ENTER**.



6 Press **↑/↓** to select “On,” then press **ENTER**.

On	Normally select this.
Off	Allows you to adjust the pictures manually. Select this if the Auto Fine Tuning function does not work effectively.

◆ If the picture is not clear

① Press **↑/↓** to select “Off,” then press **ENTER**. The fine tuning bar appears.



② Press **←/→** to obtain a clearer picture, then press **ENTER**.

7 To preset or disable another channel, repeat steps 3 and 6.

Set VCR Plus+ Channels

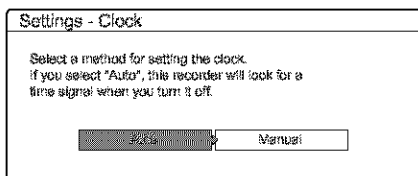
Sets up the guide channel number assigned to each channel. You need to set this correctly when you set the timer recording using the VCR Plus+ function. For details, see page 25.

Clock

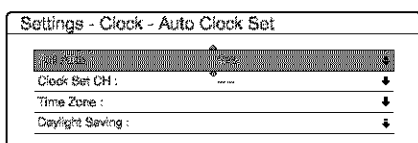
◆Auto (Auto Clock Set)

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

- Follow steps 1 to 3 of “Using the Setup Displays” (page 91) to select “Settings” in the Setup Display.
- Press **↑/↓** to select “Clock,” then press **ENTER**.



3 Press **←/→** to select “Auto,” then press **ENTER**.



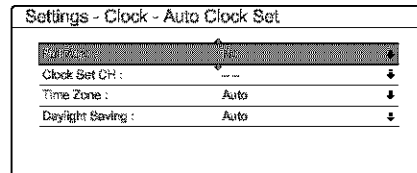
4 Press **↑/↓** to select “Full Auto,” then press **ENTER**.

5 Press **↑/↓** to select “Yes,” then 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

If your clock is set to the wrong time zone or Daylight Saving Time, you can adjust these settings without turning off the Auto Clock Set function.

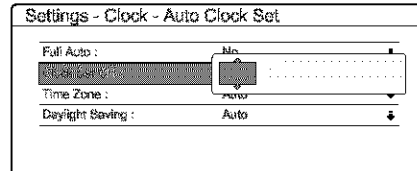
- Follow steps 1 to 3 of “Using the Setup Displays” (page 91) to select “Settings” in the Setup Display.
- Press **↑/↓** to select “Clock,” then press **ENTER**.
- Press **←/→** to select “Auto,” then press **ENTER**.
- Press **↑/↓** to select “Full Auto,” then press **ENTER**.
- Press **↑/↓** to select “No,” then press **ENTER**.



6 Press **↑/↓** to select the item you want to set and press **ENTER**. Then press **↑/↓** to make the setting and press **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 of your area, or select “Auto” to have the recorder automatically set your time zone. The options are:
 Auto ↔ Atlantic ↔ Eastern ↔ Central ↔ Mountain ↔ Pacific ↔ Alaska ↔ Hawaii ↔ 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.

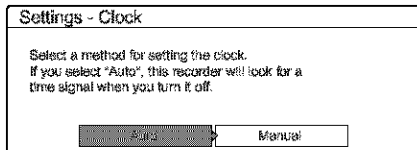
◆Manual (Manual Clock Set)

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

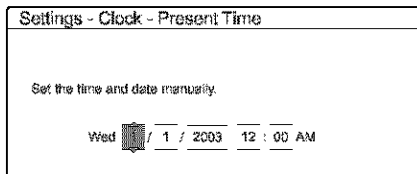
- Follow steps 1 to 3 of “Using the Setup Displays” (page 91) to select “Settings” in the Setup Display.

→continued

2 Press ↑/↓ to select “Clock,” then press ENTER.



3 Press ←/→ to select “Manual,” then press ENTER.



4 Press ↑/↓ to set the month, then press →.
Set the day, year, hour, and minutes in sequence.
Press ←/→ to select the item to be set, then press ↑/↓ 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 3, press ← to return to the item to be changed, and select the numbers by pressing ↑/↓.

Language

◆OSD (On-Screen Display)

Switches the display language on the screen.

◆DVD Menu

Switches the language for the DVD menu.

◆Audio

Switches the language of the sound track.

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

◆Subtitle

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 108) using the number buttons.

Note

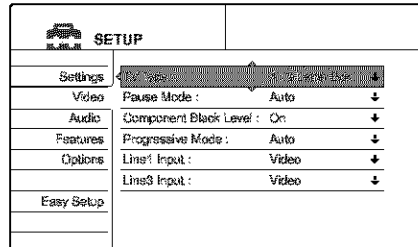
If you select a language in “DVD Menu,” “Subtitle,” or “Audio” that is not recorded on the DVD VIDEO, one of the recorded languages will be automatically selected.

Video Settings

Choose the settings according to the TV, tuner, or decoder to be connected.

Select “Video” in the Setup Display. To use the display, see “Using the Setup Displays” (page 91).

The default settings are underlined.

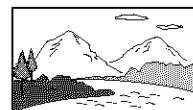


TV Type

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 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.

Component Black Level

Selects the black level (setup level) for the video signals output from the COMPONENT VIDEO OUT jacks (page 51).

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

<u>On</u>	Sets the black level of the output signal to the standard level.
Off	Select this when connecting equipment for which the black level (setup level) is set to "0."

Progressive Mode

Selects the conversion mode of software when the recorder is set to output video signals in progressive format (page 51).

<u>Auto</u>	Automatically detects if you are playing Film based or Video based software and convert the signal to the appropriate conversion mode. Normally select this.
Video	Selects the conversion mode for Video based software, regardless of the software type that you are playing.

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.

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

Audio Settings

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

Select "Audio" in the Setup Display. To use the display, see "Using the Setup Displays" (page 91).

The default settings are underlined.

Settings	Value	Arrow
Tuner Audio :	<u>Main</u>	↓
Audio ATT :	<u>OFF</u>	↓
Audio DRG :	<u>Standard</u>	↓
Downmix :	<u>Dolby Surround</u>	↓
Digital Out :	<u>On</u>	↓
Dolby Digital :	<u>D-PCM</u>	↓
DTS :	<u>OFF</u>	↓

Auto Stereo

This function affects 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 main sound.
SAP	Records only the SAP (Second Audio Program) sound.

Notes

- If no SAP sound is received, the main sound is recorded regardless of the setting.
- When "Tuner Audio" is set to "SAP," set "Auto Stereo" to "On."

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

<u>On</u>	Select this when the playback sound from the speakers is distorted.
Off	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 96).

<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 audio signal format" (page 58). 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 96).

<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) or MD deck with a digital input jack.

For connection details, see "Connecting the Audio Cords" (page 19).

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 ↓
	Dolby Digital : D-PCM ↓
Easy Setup	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 96).
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.

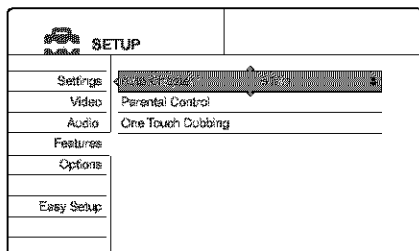
On	Select this when the recorder is connected to an audio component with a built-in DTS decoder.
<u>Off</u>	Select this when the recorder is connected to an audio component without a built-in DTS decoder.

Features Settings

The Features Setup provides entries to the following features.

Select "Audio" in the Setup Display. To use the display, see "Using the Setup Displays" (page 91).

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 made during recording.

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

Notes

- 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.
- This function is not available when using DVD-RWs in VR mode with the DV Edit function. Chapter marks are automatically entered where the recordings start on the tape (page 78, 79, 81).

Parental Control (DVD VIDEO only)

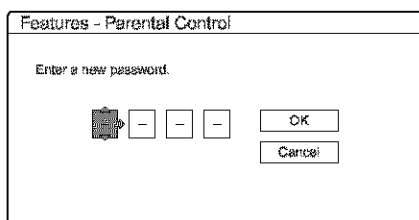
Playback of some DVD VIDEOS can be limited according to a predetermined level, such as the age of the users. Scenes may be blocked or replaced with different scenes.

1 Follow steps 1 to 3 of "Using the Setup Displays" (page 91) to select "Features" in the Setup Display.

2 Press \uparrow/\downarrow to select "Parental Control," then press ENTER.

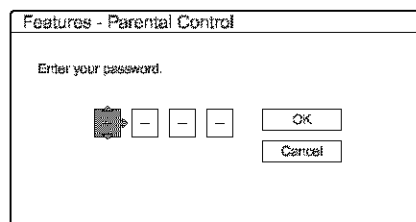
◆ If you have not entered a password

The display for registering a new password appears.

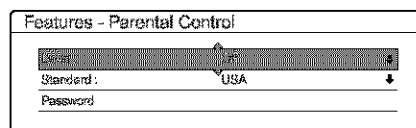


◆ When you have already registered a password

The display for entering the password appears.

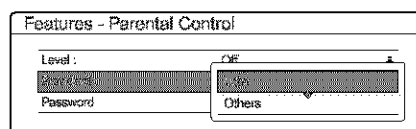


3 Enter your four digit password using the number buttons, then select "OK" and press ENTER.



4 Press \uparrow/\downarrow to select "Standard," then press \rightarrow or ENTER.

The selection items for "Standard" are displayed.



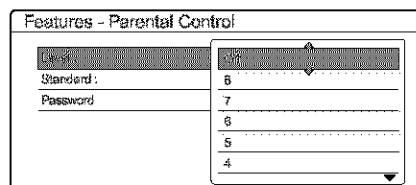
5 Press \uparrow/\downarrow to select a geographic area as the playback limitation level, then press ENTER.

The area is selected.

When you select "Others," press the number buttons to select and enter an area code in the table on page 98. Then select "OK" and press ENTER.

6 Press \uparrow/\downarrow to select "Level," then press ENTER.

The selection items for "Level" are displayed.



7 Select the level you want using \uparrow/\downarrow , then press ENTER.

Parental Control setting is complete.

The lower the value, the stricter the limitation.

- To cancel the Parental Control setting for the disc Set "Level" to "Off" in step 7.
- To change the password

① In step 4, select "Password," then press ENTER. The display for registering a password appears.

② 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 99).
- 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. If the Resume Play mode is canceled, the level returns to the previous level.

→continued

• **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

One Touch Dubbing

Displays the following items.

◆**Finalize Disc**

Selects whether or not to finalize the disc automatically following One Touch Dub (*page 78*).

<u>Auto</u>	Automatically finalizes the disc following One Touch Dub.
<u>Manual</u>	Allows you to finalize the disc manually.

◆**Add to Edit List**

Automatically generates a program in the DV/D8 Edit List during One Touch Dub of DV/Digital8 format tapes. You can use the created program for further editing. For details, see *page 78*.

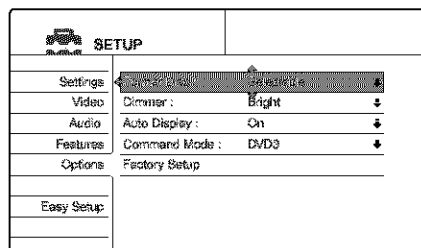
<u>On</u>	Automatically generates a program during One Touch Dub of DV/Digital8 format tapes.
<u>Off</u>	No program is generated.

Options Settings

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

Select "Options" in the Setup Display. To use the display, see "Using the Setup Displays" (page 91).

The default settings are underlined.



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 Follow steps 1 to 3 of "Using the Setup Displays" (page 91) to select "Options" in the Setup Display.
- 2 Press **↑/↓** to select "Factory Setup," then press **→** or **ENTER**.
The display for selecting the group of settings appears.
- 3 Press **↑/↓** to select the group of settings you want to return to default from "Settings," "Video," "Audio," "Features," "Options" "Parental Control," and "All," then press **→** or **ENTER**.
The dialogue box appears.
- 4 Press **←/→** to select "Start," then press **ENTER**.
The selected settings return to the default settings.
- 5 Press **ENTER** when "Finish" appears.

Format Disc (DVD-RW only)

Selects the recording format when formatting a DVD-RW.

<u>VR</u>	Automatically formats the disc in VR mode.
Video	Automatically formats the disc in Video mode.
<u>Selectable</u>	Allows you to select the format before formatting.

Dimmer

Adjusts the lighting of the front panel display.

<u>Bright</u>	Bright lighting.
Dark	Low lighting.
Display Off	Turns off the lighting.

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

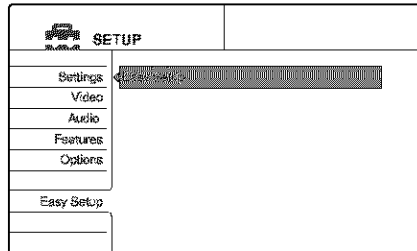
Changes the Command Mode of the recorder if other DVD equipment is assigned the same Command Mode. Be sure to match the Command Mode switch on the remote to the setting made here. For details, see "Preparing the Remote" on page 22.

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.

Easy Setup (Resetting the Recorder)

Select this to restart Easy Setup mode for basic setup.

Select “Easy Setup” in the Setup Display. To use the display, see “Using the Setup Displays” (page 91).



Easy Setup

- 1** Follow steps 1 to 3 of “Using the Setup Displays” (page 91) to select “Easy Setup” in the Setup Display.
- 2** Press **←/→** to select “Start,” then press ENTER.
- 3** Follow the Easy Setup explanation from step 5 on page 22.

Additional Information

- Troubleshooting page 101
- Self diagnosis Function (When letters/numbers appear in the display) page 104
- Specifications page 105
- About i.Link page 105
- Glossary page 107
- Language Code List page 108

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 the connecting cord securely.
- ➔ The connecting cords are damaged.
- ➔ The Setup Display appears. Press RETURN to turn off the display.
- ➔ Check the connection to your TV (page 16).
- ➔ 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.

- ➔ The disc is dirty or flawed.
- ➔ 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 the PROGRESSIVE button on the front panel 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 the PROGRESSIVE button 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 92).
- ➔ Select the correct source using the INPUT SELECT button, or select a channel of any TV program using the CH +/- buttons.

➔continued

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.

TV channels cannot be changed.

- ➔ Switch the input selector to TV.
- ➔ Connect the antenna cable correctly (page 16).

The picture from equipment connected to the recorder's input jack does not fill 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 2 IN 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.
If the equipment is connected to the DV IN jack, (this is usually for a digital video camera connection), select "DV" in the front panel display by pressing CH +/- or INPUT SELECT.

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, 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.

- ➔ The disc is dirty or flawed.
- ➔ Re-connect all connections securely.
- ➔ The connecting cord is damaged.
- ➔ Check the connections to the amplifier input.
- ➔ The input source setting on the amplifier is incorrect.
- ➔ The recorder is in pause mode or in Slow-motion Play mode.
- ➔ The recorder is in fast forward or fast reverse mode.
- ➔ If the audio signal does not come through the DIGITAL OUT (OPTICAL or COAXIAL) jacks, check the Audio Setup settings (page 95).

Sound distortion occurs.

- ➔ Set "Audio ATT" in Audio Setup to "On" (page 95).

Sound is noisy.

- ➔ The disc is dirty or flawed.
- ➔ When playing a CD with DTS sound tracks, noise will come from the LINE OUT (AUDIO L/R) 1/2 jacks (page 50).

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 96).
- ➔ Set "Audio ATT" in Audio Setup to "Off" (page 95).

An alternate audio track cannot be recorded.

- ➔ Second Audio Program (SAP) is not available for all programs. A program you are recording does not have a second audio program.
- ➔ You have set "Tuner Audio" in Audio Settings to "Main" (page 95). Select "SAP" to record alternate audio programs.

Playback

The disc does not play.

- ➔ No disc is inserted.
- ➔ A blank disc is inserted.
- ➔ The disc is upside down.
Insert the disc with the labeled side facing up.
- ➔ The disc is not correctly inserted.
- ➔ The recorder cannot play certain discs (such as a CD-ROM) (page 50).
- ➔ The region code on the DVD VIDEO does not match the recorder (page 49).
- ➔ Moisture has condensed inside the recorder. Remove the disc and leave the recorder turned on for about half an hour until the moisture evaporates (page 2).
- ➔ If the disc was recorded on another recorder, the recorder cannot play the disc if it was not finalized (page 73).

The disc does not start playback from the beginning.

- ➔ Resume play was activated (page 53). During stop, select "Reset Resume" in the TOOLS menu, then press ENTER.
- ➔ You have inserted a disc whose Title menu or DVD menu automatically appears on the TV screen when it is first inserted.

The recorder starts playing the disc automatically.

- ➔ The DVD VIDEO features an auto playback function.

Playback stops automatically.

- ➔ While playing discs with 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 DVD VIDEO, DVD-R, DVD+R, DVD+RW, or DVD-RW 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 angles cannot be changed.

- Multi-angles are not recorded on the DVD VIDEO being played.
- You are trying to change the angles when "ANGLE" does not appear on the TV screen (page 59).
- The DVD VIDEO prohibits changing angles.
- Try changing the angle using the DVD VIDEO's menu.

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 the ● REC button.

- An unused DVD-RW was inserted. It takes a while for the recorder to automatically format a DVD-RW (VR mode).

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 93).
- The channel was disabled after the timer recording is set. (See "Manual Set" on page 92.)
- Disconnect the AC power cord from the AC outlet, and connect it again.
- The program contains copy protection signals that restricts copying.
- The timer setting overlapped with another setting that was set later or has priority (page 43).

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

- 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.

- 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 during the time a timer recording is set, the recorder resumes recording. Should the power failure continue for more than 1 hour, reset the clock (page 93).
- The timer setting overlapped with another setting that was set later or has priority (page 43).
- 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.

Recording from the equipment with a timer

Nothing was recorded even though you set the Synchro-Rec setting correctly.

- You forgot to turn off the connected equipment. Turn off the connected equipment and set the recorder to Synchro-Rec standby mode (page 47).
- The recorder was not set to the Synchro-Recording standby mode. Press SYNCHRO REC to have the recorder stand by for recording. Make sure the SYNCHRO REC indicator lights up on the front panel (page 47).
- The recorder is connected to the TV output jack of the connected equipment.

Synchro-Recording does not complete.

- The timer setting for the connected equipment overlapped the recorder's timer setting (page 47).
- There was a power failure during the recording.

The recorder automatically starts recording when the satellite receiver is turned on.

- The Synchro-Rec function was activated. Turn off the satellite receiver and cancel the Synchro-Rec function (page 47).

Display

The clock has stopped.

- Set the clock again (page 93).
- The clock stopped due to a power failure that lasted for more than 1 hour. Reset the clock (page 93).

The TIMER REC indicator is flashing.

- The disc does not have enough space or there are more than 99 titles in the disc. Insert a recordable disc.
- There is no recordable disc inside the recorder.

The recording mode indication is incorrect.

- If you make a recording that is less than three minutes long, the recording mode indication shown during playback may not match the recording mode you selected during recording. Note that the actual recording mode will always match the mode you selected, not the indication during playback.

Remote commander

The remote does not function.

- ➔ Batteries are weak.
- ➔ There are obstacles between the remote and the recorder.
- ➔ The remote is too far from the recorder.
- ➔ There are no batteries in the remote.
- ➔ The remote's manufacturer code returned to the default setting when you replaced the batteries. Reset the code (page 26).
- ➔ 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 28).

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 28).

Others

The recorder does not operate properly.

- ➔ When static electricity, etc., causes the recorder to operate abnormally, unplug the recorder and then plug it in again.

Nothing appears in the front panel display.

- ➔ "Dimmer" in Options Setup is set to "Display Off" (page 99).

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

- ➔ The self-diagnosis function was activated (see the table on page 104).

The disc tray does not open when you press the **▲ OPEN/CLOSE** button.

- ➔ 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.

Mechanical sound is heard when the recorder is off.

- ➔ When the recorder's clock is being adjusted, operational noises (such as the internal fan) may be heard, even when the power is off. This is not malfunction.

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 (page 3).
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

Specifications

System

- Laser
 - Semiconductor laser
- Format
 - NTSC
- Channel coverage
 - 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

Audio characteristics (Playback)

- Frequency response
 - DVD (PCM 96 kHz): 4 Hz to 44 kHz (± 1.0 dB)/DVD (PCM 48 kHz): 4 Hz to 22 kHz (± 0.5 dB)/CD: 4 Hz to 20 kHz (± 0.5 dB)
- Signal-to-noise ratio (S/N ratio)
 - DVD: 115 dB (LINE OUT (AUDIO L/R) 2 jacks only)
- Harmonic distortion
 - DVD: 0.002 %
- Dynamic range
 - DVD: 110 dB/CD: 100 dB
- Wow and flutter
 - DVD: Less than detected value (0.001% W PEAK)

Audio characteristics (Recording/Playback)

- Frequency response
 - DVD (Dolby Digital 48 kHz): 10 Hz-20 kHz (± 1.0 dB)
- Signal-to-noise ratio
 - DVD: 96 dB
- Harmonic distortion
 - DVD: 0.004 %
- Dynamic range
 - DVD: 96 dB

The signals from LINE OUT (AUDIO L/R) jack are measured. 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 and outputs

- LINE OUT 1/2 (AUDIO)
 - Phono jack
 - Output level: 2 Vrms
 - Load impedance: 10 kilohms
- (VIDEO)
 - Phono jack
 - Output level: 1.0 Vp-p
- (S VIDEO)
 - 4-pin mini DIN
 - Output level: Y:1.0 Vp-p, C: 0.286 Vp-p (NTSC)
- LINE IN 1/2/3 (AUDIO)
 - Phono jack
 - Input level: 2 Vrms
 - Input impedance: more than 22 kilohms
- (VIDEO)
 - Phono jack
 - Input level: 1.0 Vp-p
- (S VIDEO)
 - 4-pin mini DIN
 - Input level: Y:1.0 Vp-p, C: 0.286 Vp-p (NTSC)
- DV IN
 - 4-pin i.LINK S100
- DIGITAL OUT (OPTICAL)
 - Optical output jack
 - Output level: -18 dBm (wave length: 660 nm)
- DIGITAL OUT (COAXIAL)
 - Phono jack
 - Output level: 0.5 Vp-p
 - Load impedance: 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
 - * Component Black Level is On
 - ** Component Black Level is Off
- CONTROL S IN
 - Mini jack

General

- Power requirements
 - 120 V AC, 60 Hz
- Power consumption
 - 43 W
- Dimensions (approx.)
 - 430 × 89 × 381 mm (17 × 3 ⁵/₈ × 15 in.) (width/height/depth) incl. projecting parts
- Mass (approx.)
 - 5.6 kg (11.16 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)
 - Remote commander (remote) (1)
 - Size AA(R6) batteries (2)

Specifications and design are subject to change without notice.

About i.LINK

The DV IN jack on this recorder is an i.LINK-compliant DV IN jack. This section describes the i.LINK standard and its features.

What is i.LINK?

i.LINK is a digital serial interface for handling digital video, digital audio and other data in two directions between equipment having the i.LINK jack, and for controlling other equipment. i.LINK-compatible equipment can be connected by a single i.LINK cable. Possible applications are operations and data transactions with various digital AV equipment. When two or more i.LINK-compatible equipment are connected to this recorder in a daisy chain, operations and data transactions are possible with not only the equipment that this recorder is connected to but also with other devices via the directly connected equipment.

Note, however, that the method of operation sometimes varies according to the characteristics and specifications of the equipment to be connected, and that operations and data transactions are sometimes not possible on some connected equipment.

Note

Normally, only one piece of equipment can be connected to this recorder by the i.LINK cable (DV connecting cable). When connecting this recorder to i.LINK-compatible equipment having two or more i.LINK jacks (DV jacks), see the instruction manual of the equipment to be connected.

About the Name "i.LINK"

i.LINK is a more familiar term for IEEE 1394 data transport bus proposed by SONY, and is a trademark approved by many corporations.

IEEE 1394 is an international standard standardized by the Institute of Electrical and Electronics Engineers.

i.LINK Baud rate

i.LINK's maximum baud rate varies according to the equipment. Three maximum baud rates are defined:

S100 (approx. 100 Mbps*)

S200 (approx. 200 Mbps)

S400 (approx. 400 Mbps)

The baud rate is listed under "Specifications" in the instruction manual of each equipment. It is also indicated near the i.LINK jack on some equipment.

The maximum baud rate of equipment on which it is not indicated such as this unit is "S100."

When units are connected to equipment having a different maximum baud rate, the baud rate sometimes differs from the indicated baud rate.

* What is Mbps?

Mbps stands for megabits per second, or the amount of data that can be sent or received in one second. For example, a baud rate of 100 Mbps means that 100 megabits of data can be sent in one second.

i.LINK functions on this recorder

For details on how to dub when this recorder is connected to other video equipment having DV jacks, see page 75.

The DV jack on this recorder can only input DVC-SD signals. It cannot output signals. The DV jack will not accept MICRO MV signals from equipment such as a MICRO MV digital video camera with an i.LINK jack.

For further precautions, see the notes on page 75.

For details on precautions when connecting this recorder, also see the instruction manuals for the equipment to be connected.

Required i.LINK Cable

Use the Sony i.LINK 4-pin-to-4-pin cable (during DV dubbing).

i.LINK and  are trademarks.

Glossary

Chapter (page 55)

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.

CPRM (page 35)

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

Dolby Digital (page 96)

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.

Dolby Surround (Pro Logic) (page 96)

Audio signal processing technology that Dolby Laboratories developed for surround sound. When the input signal contains a surround component, the Pro Logic process outputs the front, center and rear signals. The rear channel is monaural.

DTS (page 96)

Digital audio compression technology that Digital Theater Systems, Inc. developed. 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 VIDEO (page 49)

A disc that contains up to eight hours of moving pictures even though its diameter is the same 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 17GB.

The picture data uses the MPEG 2 format, one of the worldwide standards 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 with the DVD.

DVD-R (page 35)

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-RW (page 35)

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+RW (page 35)

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

Film based software, Video based software (page 51)

DVDs can be classified as Film based or Video based software. Film based DVDs contain the same images (24 frames per second) that are shown at movie theaters. Video based DVDs, such as television dramas or sit-coms, display images at 30 frames (or 60 fields) per second.

Index (page 57)

A number that divides a track into sections to easily locate the point you want on a CD. Depending on the disc, no index may be recorded.

Interlace format (page 51)

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.

Progressive format (page 51)

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 55)

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 55)

Sections of a music feature on a CD (the length of a song).

Language Code List

For details, see pages 57, 60, 94.
The language spellings conform to the ISO 639: 1988 (E/F) standard.

Code	Language
1027	Afar
1028	Abkhazian
1032	Afrikaans
1039	Amharic
1044	Arabic
1045	Assamese
1051	Aymara
1052	Azerbaijani
1053	Bashkir
1057	Byelorussian
1059	Bulgarian
1060	Bihari
1061	Bislama
1066	Bengali; Bangla
1067	Tibetan
1070	Breton
1079	Catalan
1093	Corsican
1097	Czech
1103	Welsh
1105	Danish
1109	German
1130	Bhutani
1142	Greek
1144	English
1145	Esperanto
1149	Spanish
1150	Estonian
1151	Basque
1157	Persian
1165	Finnish
1166	Fiji
1171	Faroese
1174	French
1181	Frisian
1183	Irish
1186	Scots Gaelic
1194	Galician
1196	Guarani
1203	Gujarati
1209	Hausa
1217	Hindi
1226	Croatian
1229	Hungarian
1233	Armenian

Code	Language
1235	Interlingua
1239	Interlingue
1245	Irupiak
1248	Indonesian
1253	Icelandic
1254	Italian
1257	Hebrew
1261	Japanese
1269	Yiddish
1283	Javanese
1287	Georgian
1297	Kazakh
1298	Greenlandic
1299	Cambodian
1300	Kannada
1301	Korean
1305	Kashmiri
1307	Kurdish
1311	Kirghiz
1313	Latin
1326	Lingala
1327	Laotian
1332	Lithuanian
1334	Latvian; Lettish
1345	Malagasy
1347	Maori
1349	Macedonian
1350	Malayalam
1352	Mongolian
1353	Moldavian
1356	Marathi
1357	Malay
1358	Maltese
1363	Burmese
1365	Nauru
1369	Nepali
1376	Dutch
1379	Norwegian
1393	Occitan
1403	(Afan)Oromo
1408	Oriya
1417	Punjabi
1428	Polish
1435	Pashto; Pushto
1436	Portuguese
1463	Quechua
1481	Rhaeto-Romance
1482	Kirundi
1483	Romanian
1489	Russian
1491	Kinyarwanda
1495	Sanskrit
1498	Sindhi
1501	Sangho

Code	Language
1502	Serbo-Croatian
1503	Singhalese
1505	Slovak
1506	Slovenian
1507	Samoaan
1508	Shona
1509	Somali
1511	Albanian
1512	Serbian
1513	Siswati
1514	Sesotho
1515	Sundanese
1516	Swedish
1517	Swahili
1521	Tamil
1525	Telugu
1527	Tajik
1528	Thai
1529	Tigrinya
1531	Turkmen
1532	Tagalog
1534	Setswana
1535	Tonga
1538	Turkish
1539	Tsonga
1540	Tatar
1543	Twi
1557	Ukrainian
1564	Urdu
1572	Uzbek
1581	Vietnamese
1587	Volapük
1613	Wolof
1632	Xhosa
1665	Yoruba
1684	Chinese
1697	Zulu
1703	Not specified

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Words in quotations appear in the on-screen displays.

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Quick Guide to DVD Disc Types

☆☆☆ : Most suitable.
 ☆☆☆ : Can be used.
 ☆ : Some functions are limited.
 — : Cannot be used.

Refer to the following when selecting a disc (DVD-RW, DVD+RW, or DVD-R) and a recording format (VR mode or Video mode for DVD-RW discs). Each disc can record for up to six hours.

You want to...	-RW VR	-RW VIDEO	+RW	-R
Record TV programs	☆☆☆	☆☆☆	☆☆☆	☆☆
Reuse by deleting unwanted contents	☆☆☆	☆☆	☆☆	—
Edit recorded contents	☆☆☆	☆	☆	☆
Edit/Record from connected equipment	☆☆☆	☆☆☆	☆☆☆	☆☆☆
Copy discs for distribution	☆☆ ^{*1}	☆☆☆	☆☆☆	☆☆☆
Play on other DVD equipment	☆☆ ^{*1}	☆☆☆	☆☆☆	☆☆☆

Features	-RW VR	-RW VIDEO	+RW	-R
Recording				
Rewritable?	Yes	Yes	Yes	No
Can create chapters at fixed intervals (auto.)	Yes	Yes	Yes	Yes
Can create chapters wherever you like (manual)	Yes	No	No	No
Can record 16:9 size pictures	Yes	Yes ^{*2}	No	Yes ^{*2}
Can record Copy-Once programs	Yes	No	No	No
Editing				
Can perform basic edit functions	Yes	Yes	Yes	Yes ^{*3}
Can perform advanced edit functions (Playlist edit)	Yes	No	No	No
DV editing				
One Touch Dub	Yes	Yes	Yes	Yes
Program Edit	Yes	Yes	Yes	Yes
Advanced Program Edit	Yes	Yes ^{*4}	Yes ^{*4}	Yes ^{*4}
Auto Scene Chaptering	Yes	No	No	No
Compatibility with other DVD equipment				
Finalization required?	No ^{*5}	Yes	No ^{*5}	Yes
Can generate a Title Menu (DVD Menu)	No	Yes	Yes	Yes

^{*1} DVD-RWs (VR mode) can only be played on DVD equipment that is VR compatible.

^{*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.

^{*4} You will need another blank DVD-RW.

^{*5} For certain DVD equipment, finalization may be required.

Note

For details of the above functions and implied restrictions, see the explanations inside the manual.



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