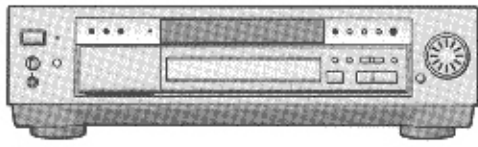


Panasonic



DVD Video Recorder Operating Instructions

Model. No. **DMR-E10**



Before attempting to connect, operate or adjust this product, please read these instructions completely.

Table of Contents

Dear Customers

Thank you for purchasing this Panasonic DVD Video Recorder. We strongly recommend that you carefully study the Operating Instructions before attempting to operate the recorder and that you note the listed precautions.

The model number and serial number of this recorder can be found on either the back or the bottom of the recorder. Please note them in the space provided below and retain this booklet as a permanent record of your purchase to aid identification in the event of theft.

MODEL NUMBER:
SERIAL NUMBER:

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Safety information

Note:

This unit can be used only where the power supply is AC 120V, 60Hz. It cannot be used elsewhere.

CAUTION:

UNIT IS A CLASS I LASER PRODUCT. HOWEVER THIS RECORDER USES A VISIBLE LASER BEAM WHICH COULD CAUSE HAZARDOUS RADIATION EXPOSURE IF DIRECTED. BE SURE TO OPERATE THE RECORDER CORRECTLY AS INSTRUCTED.

WHEN THIS RECORDER IS PLUGGED TO THE WALL OUTLET, DO NOT PLACE YOUR EYES CLOSE TO THE OPENING OF THE DISC TRAY AND OTHER OPENINGS TO LOOK INTO THE INSIDE OF THIS RECORDER.

USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

DO NOT OPEN COVERS AND DO NOT REPAIR YOURSELF. REFER SERVICING TO QUALIFIED PERSONNEL.

WARNING:

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, AND ANNOYING INTERFERENCE, USE THE RECOMMENDED ACCESSORIES ONLY.

THIS DEVICE IS INTENDED FOR CONTINUOUS OPERATION!

CAUTION:

NO EQUIPMENT GROUNDING IS PROVIDED. DO NOT USE THIS CORD SET FOR OTHER EQUIPMENT. USE PROVIDED EQUIPMENT ONLY. TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

DO NOT PLACE THIS APPARATUS INTO AN AUDIO RACK, BOOK SHELF OR SIMILAR LOCATION BECAUSE OF HEAT FROM THIS APPARATUS.

DO NOT BLOCK ANY OF THE VENTILATION OPENINGS. INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

**CAUTION****RISK OF ELECTRIC SHOCK
DO NOT OPEN**

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



The lightning flash with arrowhead symbol, within an equilateral triangle, 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.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

FCC NOTE: (U.S.A Only)

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.

FCC Caution: To assure continued compliance, follow the attached installation instructions and use only shielded cables when connecting to other devices. Also, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

**CAUTION -LASER RADIATION WHEN OPEN.
DO NOT STARE INTO BEAM.**

(Inside of Recorder)

Precautions

This unit contains precision components which are readily affected by ambient conditions (temperature, humidity, dust, etc.). To ensure continued enjoyment of pictures and sound, please observe the following precautions.

Before audio/video recording or editing important material

- **Before recording an important event or editing an important recording, do a trial recording or trial editing to check that the audio and/or video will be recorded properly or the recording will be edited properly.**

The manufacturer cannot offer any compensation for any failure of the pictures and/or sound to be recorded owing to problems which have developed in the unit and discs during their use.

Copyrights

- Copyright laws prohibit the use of any video and audio material which you have recorded without the permission of the copyright holders, except in cases where that material is to be used for your own personal enjoyment or entertainment.
- The duplication, broadcasting, public presentation or rental of discs without permission is prohibited by law.
- This product employs copyright protection technology which itself is protected by U.S. patents held by MacroVision Development, Inc. and other copyright holders as well as by other intellectual property rights. Use of this technology requires permission from MacroVision Development and, insofar as special permission has not been granted by MacroVision Development, the technology is limited to use in home applications and to certain restricted entertainment applications. Disassembly and remodeling are also prohibited by law.

When installing and operating the unit

- **Turn off the power of all the equipment before proceeding with the connections.**
- **Use the unit on a flat surface.**
Do not use the unit while it is tilted to one side by placing magazines, etc. underneath it.
- **Do not insert objects other than discs in the tray.**
- **Keep objects with a strong magnetic field or items which generate a strong electromagnetic field (such as cell phones) away from the unit as they may adversely affect the picture and sound and/or impair the recording quality.**
- **Keep volatile insecticide sprays away from the unit.**
These may deform the cabinet or cause the paint to peel off.
- **Do not use the unit when condensation has formed.**
Bringing the unit from a cold location into a warm room causes condensation to form, which may result in malfunctioning and failure. At such times, remove the disc, and leave the unit standing for 1 to 2 hours with its power on.

When moving or transporting the unit

- **Do not drop the unit or knock it against other objects.**
- **Remove the disc, and disconnect the power cable and other cords and cables.**
When transporting the unit to another location it is recommended to put the unit back inside its original carton box.

When maintaining the unit

- **When the cabinet is dirty**
Disconnect the power plug from the power outlet, and use a soft, dry cloth to wipe the cabinet.
- **When removing stubborn dirt**
Dilute some kitchen detergent with water, dip a cloth into the solution, wring it out thoroughly, and wipe away the dirt. Then remove any remaining moisture using a dry cloth.
 - If a chemical cleaning cloth is to be used, heed the instructions which accompany it.

- Do not use benzine, paint thinners or other solvent since they will mar the cabinet finish and cause the paint to peel off.

■ When the recording/playback lens is dirty

The recording/playback lens may become dirty with prolonged use, making it impossible for the unit to record or play back discs properly.

It is recommended that the lens be cleaned every one to four months using the DVD-RAM/PD lens cleaner (optional accessory) although this frequency will depend on the operating environment and how often the unit is used. For details on the cleaning method, refer to the instructions which accompany the cleaning kit.

When the unit is not going to be used for an extended period

- **When the unit will not be used for about a month or more**

First remove the disc and turn the power off, and then disconnect the power plug from the power outlet.

- If the unit is left connected to the power outlet, it will consume about 6 watts of power even with its power turned off.
- In order to maintain its functions, operate the unit about once a month by playing back one or more discs.

Manufactured under licence from Dolby Laboratories. "Dolby" and the double-D symbol are trademarks of Dolby Laboratories. Confidential Unpublished Works. © 1992-1997 Dolby Laboratories, Inc. All rights reserved.


This product was manufactured under license from DTS of the U.S. "DTS digital surround" is a trademark of DTS. Copyright (C) DTS 1996. All rights reserved.

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

Disc information and care


*DVD-RAM discs recorded using this unit cannot be played on other DVD players (including units made by Panasonic except specific players having DVD-RAM playback capability). (As of July 2000)


Discs which the unit can record on and play back


	4.7 GB DVD-RAM discs 5" (12 cm) Video system: NTSC	RAM
---	---	------------

*This product employs a copyright protection technology defined for recordable media. Video contents allowed for "Once-copy" determined by content provider can be recorded on the DY-HB47 DVD-RAM discs, or equivalent, with this product.

Discs which the unit can play back

	DVD-Video discs 5" (12 cm) or 3" (8 cm) Region numbers: "1" or "ALL" Video system: NTSC	DVD-V
---	---	--------------

	Video CDs 5" (12 cm) or 3" (8 cm) Video system: NTSC	VCD
--	---	------------

	CDs 5" (12 cm) or 3" (8 cm)	CD
---	---------------------------------------	-----------

Discs which the unit cannot play back

- DVD-Video discs except for region numbers "1" and "ALL"
- DVD/Video CDs recorded using the PAL system
- DVD-RAM discs (2.6 GB)
- Photo CDs •DVD-RW •DVD-AUDIO •CD-ROM •CD-G
- SVCD •PD •DVD-R •MVDISC •CD-RW •CVD •SACD
- MD •DVD-ROM •+RW •CDV •VSD •MO •CD-R

•Any files on the disc which were recorded based on recording standards cannot be played back by this unit, even with a 4.7GB DVD-RAM disc.

Region numbers

A region number is a number which has been allocated to DVD-Video software and equipment in each marketing region. The region number for this unit is "1."

This unit can play only those discs marked with (or including) "1," numbers which include a digit that is "1" or "ALL."

Examples include the following: [1] [ALL] [1 2 6]



Jacket logos

- Audio number
- Number of subtitle
- Number of angles



(The number indicated refers to the number recorded)

•Picture sizes (width by height)

- [4:3]**: Indicates that pictures have been recorded in the standard size with a width-to-height ratio (aspect ratio) of 4:3.

[LB]: Indicates that pictures have been recorded in the letter-box size (with the aspect ratio of 4:3 and black bands at the top and bottom of the screen).

[16:9 LB]: Indicates that pictures have been recorded in the wide-screen size with the aspect ratio of 16:9 and that, on a standard size (4:3) TV screen, the disc is instructed to ensure playback using the letter-box size.

[16:9 PS]: Indicates that pictures have been recorded in the wide-screen size with the aspect ratio of 16:9 and that, on a standard size (4:3) TV screen, the disc is instructed to ensure playback using panning and scanning (so that the picture is cut off at one side or both sides of the screen).

The pictures which appear on a TV set differ according to the size (aspect ratio) of the TV screen and TV screen mode.

Restrictions during playback

On some DVDs and Video CDs, the playback modes are intentionally fixed by the software producer. This unit will play back these discs in accordance with the intention of the software producer so that the disc's operations may not accurately reflect the operations performed in the unit. Refer to the instructions accompanying the discs to be played.

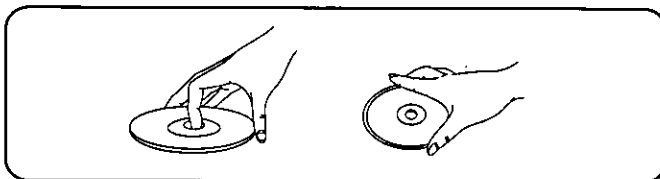
Example:

- During the menu playback of an interactive DVD or Video CD with playback control, continued playback, memory or repeat playback, markers and other functions may not work, etc.

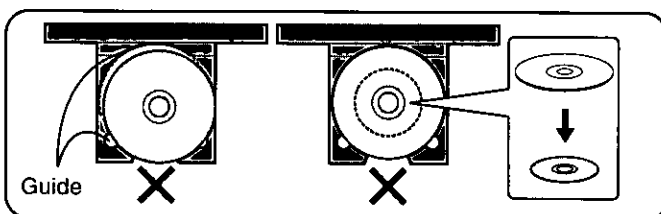
Handling precautions

Observe the following precautions: otherwise, disc or equipment failure may result.

- Do not use heart-shaped, octagonally-shaped and other specially shaped discs even if they come with the logos shown on the left. (They will cause the unit to malfunction.)
- Do not use significantly warped or cracked discs.
- Do not allow the discs to become dirty, and do not scratch or mark them.
- Do not drop or bend discs.
- Do not write on discs using marker pens or ball-point pens.
- Do not adhere pieces of paper or stickers onto discs.
- Do not use single disc (8 cm disc) adapters or CD stabilizers.
- Except for discs with a cartridge, do not touch their signal surfaces.



- Do not close the tray while the disc is not positioned correctly in the guide. Do not touch any disc on their signal surface.
- Do not stack two or more discs on the tray.

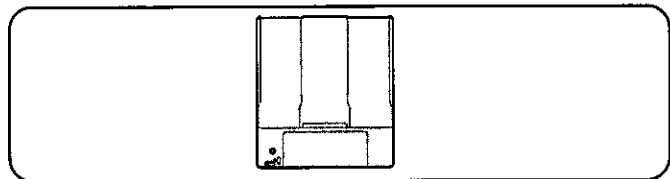


Disc information and care (continued)

DVD-RAM discs

■ It is recommended that Type 2 cartridge 4.7GB DVD-RAM discs (optional accessories/available from stores) be used with this unit.

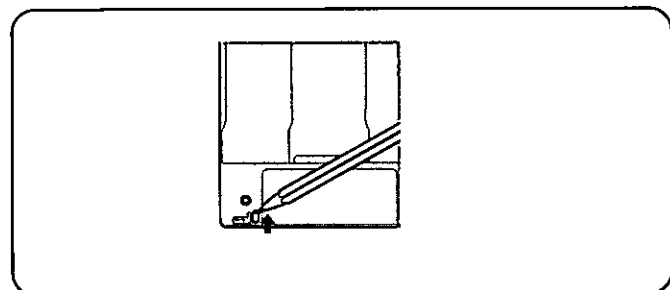
- Some DVD-RAM discs come with a cartridge and some come without. Use of discs that come with a cartridge are recommended, however both types of discs can be used with the unit. Panasonic's DY-HB47 Type 2 cartridge DVD-RAM discs (optional accessories) have a cartridge.



- DVD-RAM discs require that extremely precise information be recorded. As such, touching a disc or exposing it to even small amounts of dust may make it impossible for the disc to record or be played or edited properly. The type that comes with a cartridge is better able to withstand fingerprints and dust, and it thereby enables more stable recording, playback and editing.
- Do not open the cartridge shutter with your fingers. Touching the disc inside or allowing even small amounts of dust to enter may make it impossible for information to be recorded, played or edited properly.
- Some discs that come with a cartridge allow the inside disc to be removed, and others do not allow this. Even if the inside disc can be removed, it is recommended that the disc be kept in its cartridge. If the disc is to be removed for some important reason, read the instructions that accompany the disc before doing so.
- When some types of discs available on the market are removed from their cartridges, they are no longer capable of recording video.
- Panasonic will not be held liable if audio and/or video recording or editing was not accomplished or if content was lost.

■ To prevent recordings from being accidentally erased

- Use a ball-point pen or other pointed implement to set the write protect tab (for preventing accidental erasure) on the disc to the PROTECT position. The disc can still be played back but video recording, erasure, play list editing etc. and disc formatting (initializing) using the direct navigator can no longer be performed. Read the instructions accompanying the discs as well.

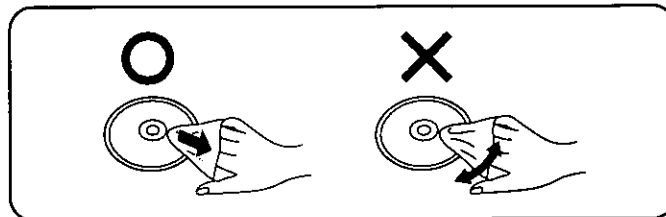


- Compatibility with other DVD recorders or DVD disc drives is not guaranteed.

Disc maintenance and storage

■ When fingerprints or dust has been left on a disc DVD-Video discs, Video CDs and CDs

- Use a soft cloth and wipe the disc in the direction shown in the figure.



- Do not use record cleaners, paint thinners, benzine or alcohol to wipe the discs clean.

DVD-RAM discs

- Be absolutely sure to use the dedicated LF-K200DCA1 DVD-RAM/PD disc cleaner (optional accessory) and wipe the discs well. This cleaner can also be used with discs that do not come with a cartridge. For further details on how to use this disc cleaner, refer to the instructions accompanying the cleaner.

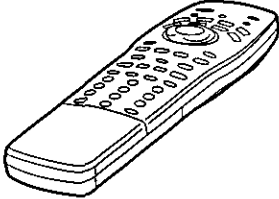
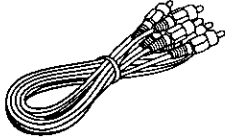
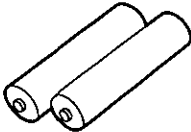
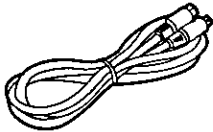
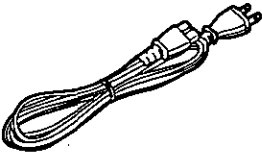
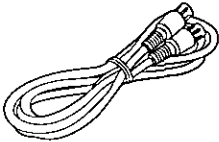
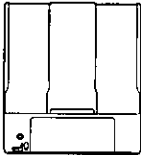
■ When storing discs

- Put the discs back in their cases.
- Do not store discs where they will be exposed to direct sunlight, where there are high levels of moisture or concentrations of dust or where they will be directly exposed to the heat from heaters.

Accessories

Check that you have the accessories shown below .



<input type="checkbox"/> Remote control ... 1 (Part No. EUR511161) 	<input type="checkbox"/> Audio/video cable ... 1 (Part No. VJA1062 or VJA0788) 	
<input type="checkbox"/> Batteries (size "AA") for remote control ... 2 	<input type="checkbox"/> S-video cable ... 1 (Part No. VJA0658-A) 	
<input type="checkbox"/> AC cord ... 1 (Part No. RJA0065-A) 	<input type="checkbox"/> 75-ohm coaxial cable ... 1 (Part No. VJA1013) 	<input type="checkbox"/> DVD-RAM blank disc ... 1 (Part No. DY-HB47) 

(U.S.A. only)

Product Registration Card

Please complete and return the included product registration card, or register via the Internet at:
<http://www.panasonic.com/host/consumer.html>

Optional accessories

- Optical digital audio cable
- DVD-RAM/PD Lens cleaner (LF-K123LCA1)
- DVD-RAM/PD Disc cleaner (LF-K200DCA1)

(U.S.A. only)

To order accessories, call PASC Accessory Dept.
1-800-332-5368 or visit www.panasonic.com/store

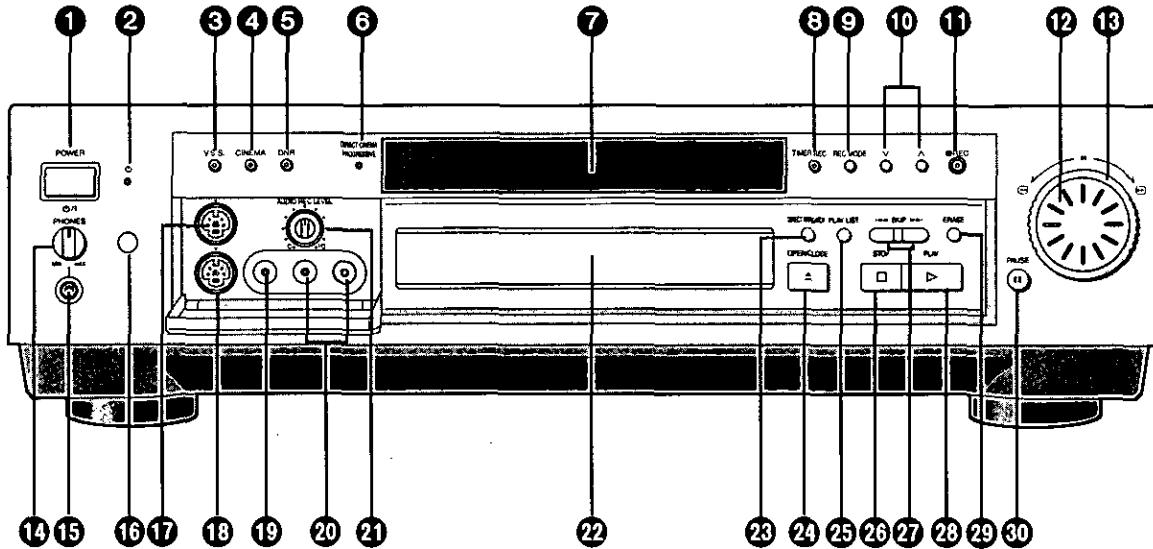
(Canada only)

To order accessories, call the dealer where you purchased the unit.

Front panel controls and functions

For further details, refer to the pages indicated. (These instructions mainly describe the operations that involve the use of the remote control.)

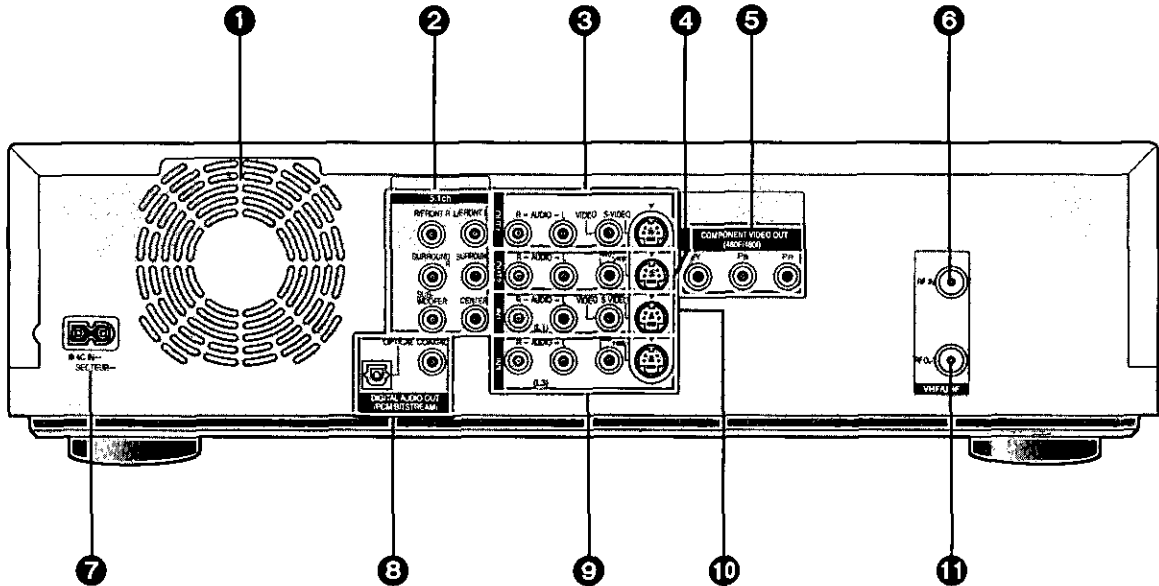
[Front Panel]



- ❶ [POWER] button (⏻) (p. 17)
- ❷ Standby lamp (⏻)
This lights when the power is off. ("Standby" refers to the state in which the unit still consumes a small amount of power in order to retain the memory contents, etc. even after the power has been turned off.)
- ❸ [V.S.S.] (virtual surround sound) button/lamp (p. 88)
- ❹ [CINEMA] button/lamp (p. 88)
- ❺ [DNR] (digital noise reduction) button/lamp (p. 90)
- ❻ [DIRECT CINEMA PROGRESSIVE] lamp (p. 118)
- ❼ Main unit's display window (p. 11)
- ❽ [TIMER REC] (timer OFF/ON) button/lamp (p. 62, 64)
- ❾ [REC MODE] (recording mode) button (p. 52)
- ❿ [V] [^] (channel) buttons (p. 52)
- ⓫ [REC] (recording) button/lamp (p. 52)
- ⓬ Jog dial (p. 30)
- ⓭ Shuttle ring (p. 31)
- ⓮ PHONES (headphones) level control (p. 23)
- ⓯ Headphones jack (p. 23)
- ⓰ Remote control sensor (p. 14)
- ⓱ [VIDEO PRINTER OUT] (video printer output/S-video output) connector (p. 107)
- ⓲ [S-VIDEO IN (L2)] (S-video input) connector (p. 97)
- ⓳ [VIDEO IN (L2)] (video input) connector (p. 97)
- ⓴ [AUDIO IN (L2)] (audio input) connector (p. 97)
- ⓵ [AUDIO REC LEVEL] (recording level) control (p. 54)
- ⓶ Disc tray (p. 21)
- ⓷ [DIRECT NAVIGATOR] button (p. 68)
- ⓸ [OPEN/CLOSE] button (⏏) (p. 21)
- ⓹ [PLAY LIST] button (p. 80)
- ⓺ [STOP] button (⏏) (p. 23)
- ⓻ [SKIP] buttons (⏮ ⏭) (p. 32, 56)
- ⓼ [PLAY] button (⏪) (p. 22)
- ⓽ [ERASE] button (p. 56)
- ⓾ [PAUSE] (still/pause) button (⏸) (p. 30)

Rear panel connections

[Rear Panel]

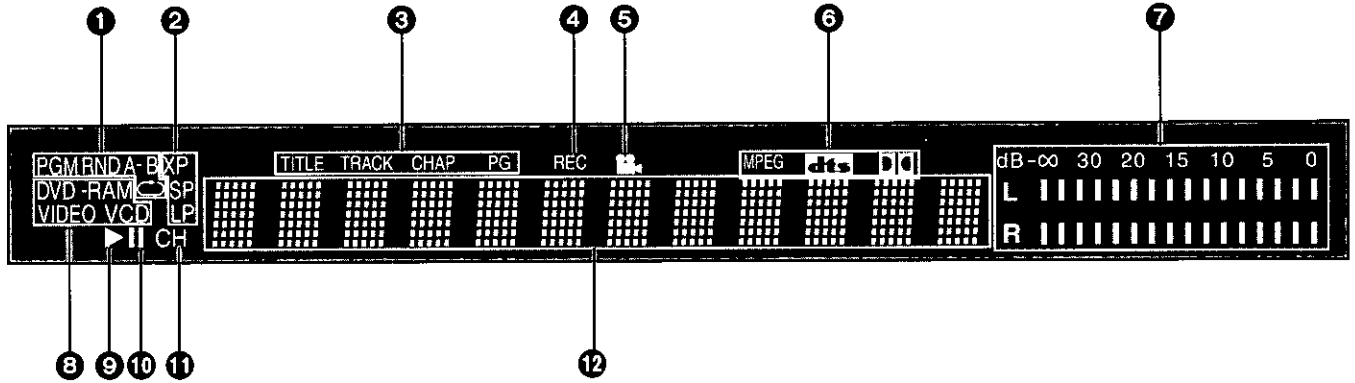


- ❶ **Internal cooling fan**
The fan runs continuously while the power is on. Do not block it.
- ❷ **5.1ch connectors (p. 104)**
(Front left and right, surround left and right, sub-woofer, center)
- ❸ **[OUT1] Output 1 connectors (p. 15)**
(Audio left and right, video, S1/S2 video)
- ❹ **[OUT2] Output 2 connectors (p. 106)**
(Audio left and right, video, S1/S2 video)
- ❺ **[COMPONENT VIDEO OUTPUT (480P/480I)] connectors**
(Y, Pb, Pr) (p. 101)
- ❻ **VHF/UHF RF-IN (antenna input) terminal (p. 15)**
- ❼ **Power socket (p. 15)**
- ❽ **[DIGITAL AUDIO OUTPUT (PCM/BIT STREAM)] connectors (optical, coaxial) (p. 105)**
- ❾ **[IN3] External input 3 (L3) connectors**
(audio left and right, video, S1/S2 video) (p. 97)
- ❿ **[IN1] External input 1 (L1) connectors**
(audio left and right, video, S1/S2 video) (p. 97)
- ⓫ **VHF/UHF RF-OUT (antenna output) terminal (p. 15)**

Display information

For further details, refer to the pages indicated.

[Main Unit Display Window]



1 Playback modes (p. 35, 49)

PGM: Programmed playback
RND: Random playback
A-B (A-B repeat playback)
Repeat (Repeat playback)
PGM (Programmed repeat playback)

2 Recording modes (p. 52, 63, 64)

XP: High-picture-quality play mode
SP: Standard play mode
LP: Long play mode
XP, SP, LP (all indicators light): FR (flexible recording mode (for programmed recording only)

3 Modes indicating what is shown on main display area

TITLE: Title display mode
TRACK: Track display mode
CHAP: Chapter display mode
PG: Program number display mode

4 Recording underway (p. 52)

5 Multi-angle (p. 51)

6 Audio signal types (p. 40)

MPEG: MPEG signals
dts : dts signals
Dolby Digital : Dolby Digital signals

7 Volume level meter (p. 54)

8 Discs used

DVD-RAM: DVD-RAM disc (for recording)
DVD VIDEO: DVD-Video disc
VCD: Video CD
CD: Music CD

9 Playback underway

Lighted: during playback (p. 22)
Flashing: When the resume playback memory function is working (p. 23)
Flashing: When one-shot playback is enabled (p. 67)

10 Still (pause) (p. 28)

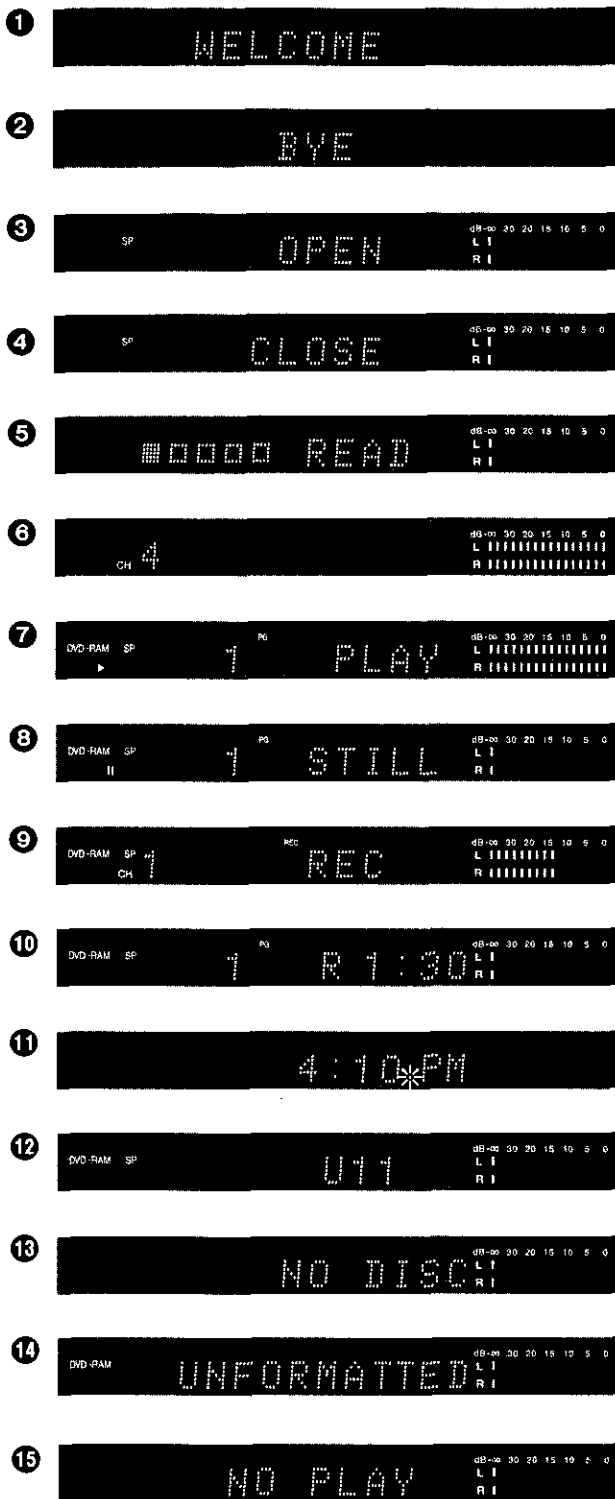
11 Channel (p. 52)

12 Main display area (p. 12)

Recording/playback time (counter)
Amount of disc remaining
Present time
Programmed recording
Title, chapter/track, program number
Messages

Display information (continued)

■ Display which appears (example)



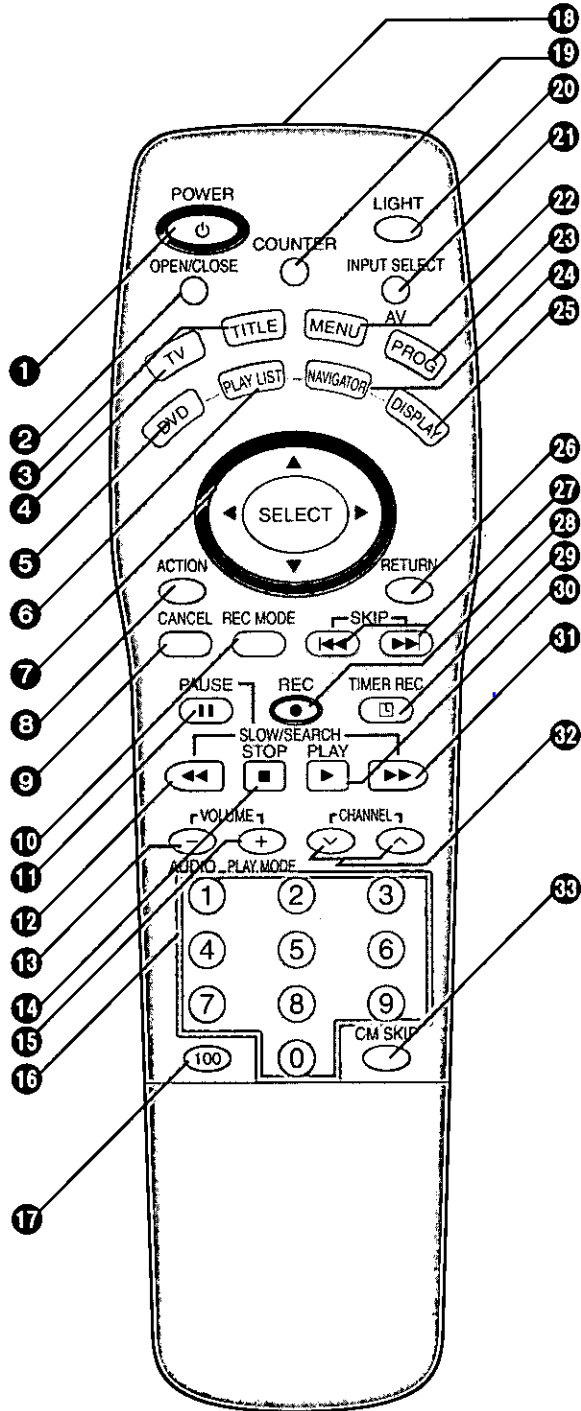
- 1 Illuminates immediately after the power is turned on
 - "TO DVD WORLD" is displayed after this.
- 2 Illuminates immediately after the power is turned off
 - After this, the power is turned off and the clock display appears.
- 3 Illuminates when the tray is opened
- 4 Illuminates when the tray is closed
- 5 Illuminates while the disc information is being read
 - While this display is shown, the only operations which can be performed are tray open and tray close.
- 6 Example: While channel 4 is being received
 - The figure on the left omits all displays except for the channel display.
- 7 Illuminates immediately after playback has commenced
 - After this, the counter display appears.
- 8 Illuminates during pause
- 9 Illuminates immediately after recording has commenced
 - After this, the counter display appears.
- 10 Example: 1 hour 30 minutes of disc remaining (in SP mode)
- 11 Present time
 - Example: 4:10 pm
- 12 Service number
 - For details, refer to p. 133.
- 13 When there is no disc loaded
When the disc cannot be played
- 14 When an unformatted disc (p. 128) is inserted
- 15 When there is no disc loaded
When the disc cannot be played
 - DVD with Region No. other than "1" or "ALL."
 - DVD for which playback is prohibited by the initial settings "1 Set Up" → "8 Ratings."
 - PAL system disc.
 - Incompatible disc. (p. 6)

Remote control functions

For further details, refer to the pages indicated.

Press [TV] when performing operations for the television, and [DVD] when performing operations for the DVD Video Recorder.

- ❶ [POWER] button (⏻) (p. 17)
- ❷ [OPEN/CLOSE] button (p. 21)
- ❸ [TITLE] button (p. 27)
- ❹ [TV] button (p. 54)
- ❺ [DVD] button (p. 18)
- ❻ [PLAY LIST] button (p. 80)
- ❼ [◀▲▶▷]/SELECT buttons (p. 18, 24, 58, 68, 80, 108)
◀▲▶▷: Used to move the cursor on the menu screen or move the selection item.
Select: Used to enter the item selected by [◀], [▲], [▼] and [▶]. When pressing this button, press its center firmly.
- ❽ [ACTION] button (p. 108)
- ❾ [CANCEL] button (p. 47)
- ❿ [REC MODE] button (p. 52)
- ⓫ [PAUSE] button (p. 30)
- ⓬ [REVERSE-SLOW/SEARCH] button (◀◀) (p. 28, 29)
- ⓭ [AUDIO/VOLUME(-)] button (p. 91)
- ⓮ [STOP] Button (■) (p. 23)
- ⓯ [PLAY MODE/VOLUME(+)] button (p. 35)
- ⓰ Numeric buttons (p. 24)
- ⓱ 100 button (p. 54)
- ⓲ Remote control transmitter (p. 14)
- ⓳ [COUNTER] button (p. 93)
- ⓴ [LIGHT] button
When [LIGHT] is pressed, buttons ❸, ❹, ❺, ❻ and ⓴, ⓵ light for approximately 2 seconds. Further, either the [TV] or [DVD] will flash, depending on the mode selected.
- ⓵ [INPUT SELECT /AV] button (p. 54)
- ⓶ [MENU] button (p. 26)
- ⓷ [PROG] button (p. 62)
- ⓸ [NAVIGATOR] button (p. 76)
- ⓹ [DISPLAY] button (p. 91)
- ⓺ [RETURN] button (p. 37)
- ⓻ [SKIP] button (◀◀▶▶) (p. 32, 56)
- ⓼ [REC] button (p. 52)
- ⓽ [TIMER REC] button (⏏) (p. 63)
- ⓾ [PLAY] button (▶) (p. 22)
- ⓿ [FORWARD-SLOW/SEARCH] button (▶▶) (p. 28, 29)
- ⓿ [CHANNEL] button (∨∧) (p. 52)
- ⓿ [CM SKIP] button (p. 34)



Remote control unit preparation

Battery installation

- 1 Slide off the battery cover.
- 2 Insert the batteries with the polarity (\oplus and \ominus) correctly aligned.
- 3 Replace the battery cover.

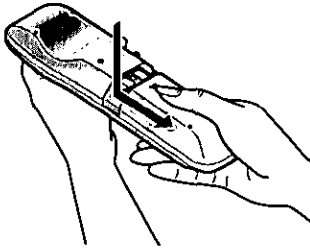
Service life of batteries

- The batteries normally last for about one year although this depends on how often and for what operations the remote control unit is used.
- If the remote control unit fails to work even when it is operated near the recorder, replace the batteries.
- Use size "AA" batteries.

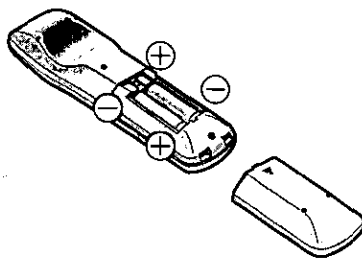
Notes:

- Do not use rechargeable (Ni-Cd) batteries.
- Do not mix old and new batteries.
- If the remote control unit is not going to be used for a long time, remove the batteries.

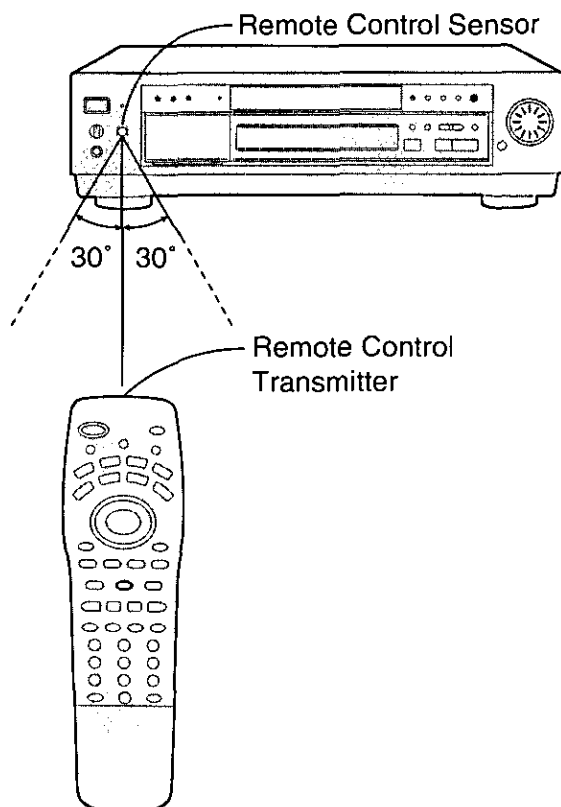
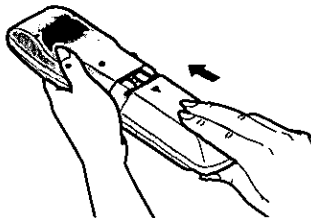
1



2



3



Remote control operation range

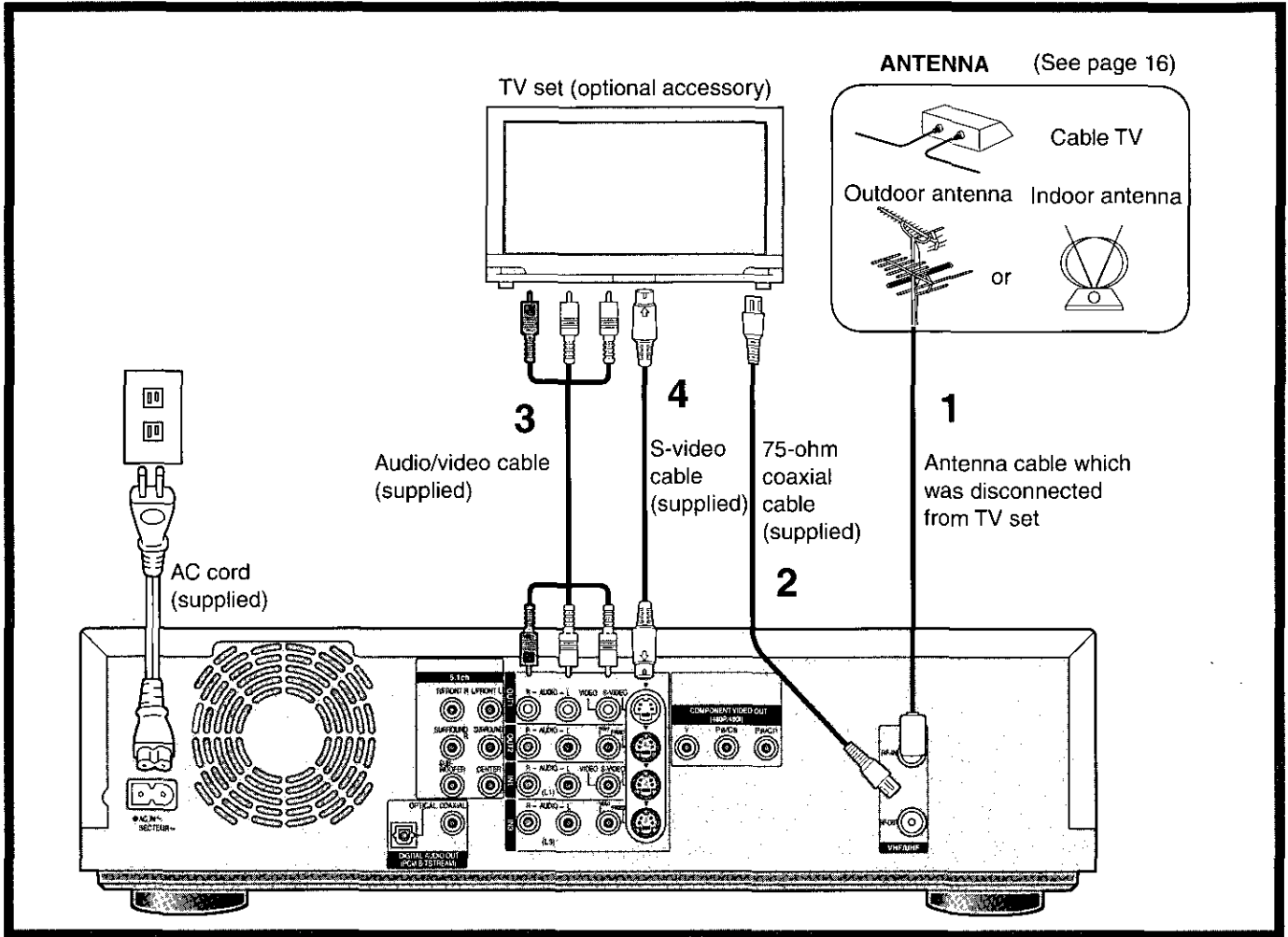
Point the remote control unit from no more than about 23 feet (7m) from the remote control sensor and within about 60° of the front of the recorder.

- The operating distance may vary according to the brightness of the room.

Notes:

- Do not point bright lights at the remote control sensor.
- Do not place objects between the remote control unit and the remote control sensor.
- Do not use this remote control unit while simultaneously operating the remote control unit of any other equipment.
- Panasonic's DVD recorders and DVD players use virtually the same type of remote control units. If a DVD recorder and a DVD player are located in the same area, it is necessary to change the remote control code. (p. 95-96)

Basic connections



- 1** Disconnect antenna or cable from TV and connect to DVD recorder.
- 2** Connect the DVD recorder to TV with RF coaxial cable.
- 3** Connect the DVD recorder to TV with supplied Audio/video cable.
- 4** If your TV is equipped with S-video input, connect the DVD recorder to TV with supplied S-video cable for improved video performance.
 - Audio cables in step 3 above must also be connected when using S-video cable connection.

Note:

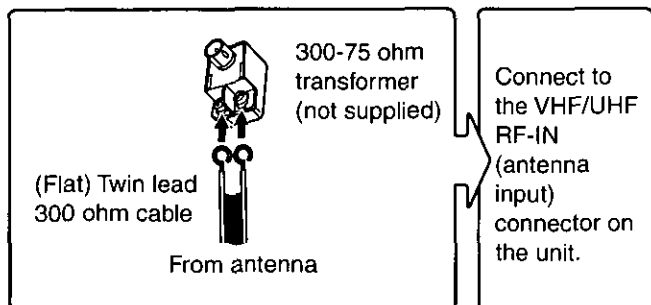
- TV sets that do not have video input (video+audio) connector can not be used with this unit.
- Use the "L" audio out jack for proper sound reproduction when connecting to a monaural TV.

Basic connections (continued)

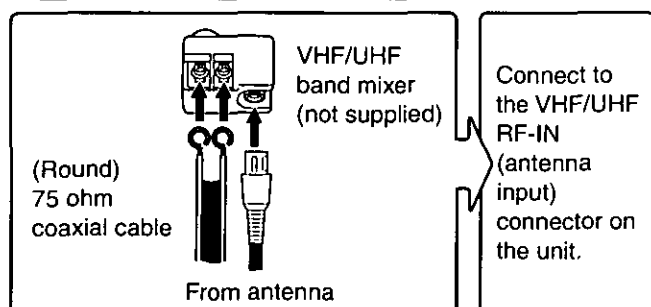
When the antenna cable needs to be reworked

Check the shape of the antenna cable end, and connect it as shown in the figures below.

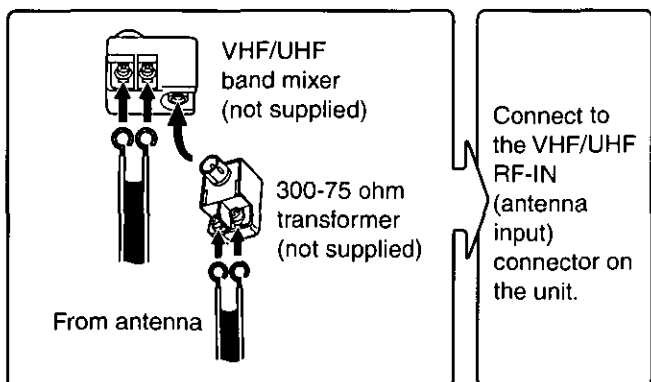
■ Case 1: Twin lead cable only



■ Case 2: Twin lead & coaxial cables



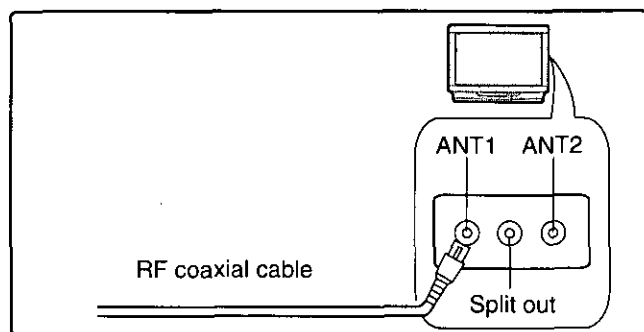
■ Case 3: Two twin lead cables



Connecting the RF Coaxial Cable with the TV

Check the shape of the TV set's VHF/UHF antenna input connectors, and rework the cable as shown in the figures below.

■ Case 1: Complex TV terminal



Auto Tuning

The DVD Video Recorder is fitted with its own tuner (just like a normal TV) and can be preset to receive TV broadcast stations.

Auto Tuning

Connect the antenna cable and the AC power cord

- 1 Press [POWER] on the unit.**
 - The Auto Tuning/Clock Setting display appears.
- 2 Press [SELECT].**

Auto Tuning searches for TV stations and memorizes every tuned program channel.

- If you turn the DVD Video Recorder off during Auto Tuning, Auto Tuning will stop halfway.

■ To cancel Auto Tuning Mid-Operation

Press [POWER] or [RETURN] during Auto Tuning. Auto Tuning is cancelled.

■ To restart plug in Auto Tuning

- 1 Press and hold [∇] and [∧] for 5 seconds with the power on.**
 - The DVD-Recorder unit will turn off.
 - “0:00” flashes in the clock display.
- 2 Press [POWER] to turn the unit on.**
- 3 Press [SELECT].**
 - Auto Tuning mode commences.

■ Automatic clock adjustment

Clock adjustment is performed automatically upon the completion of auto tuning.

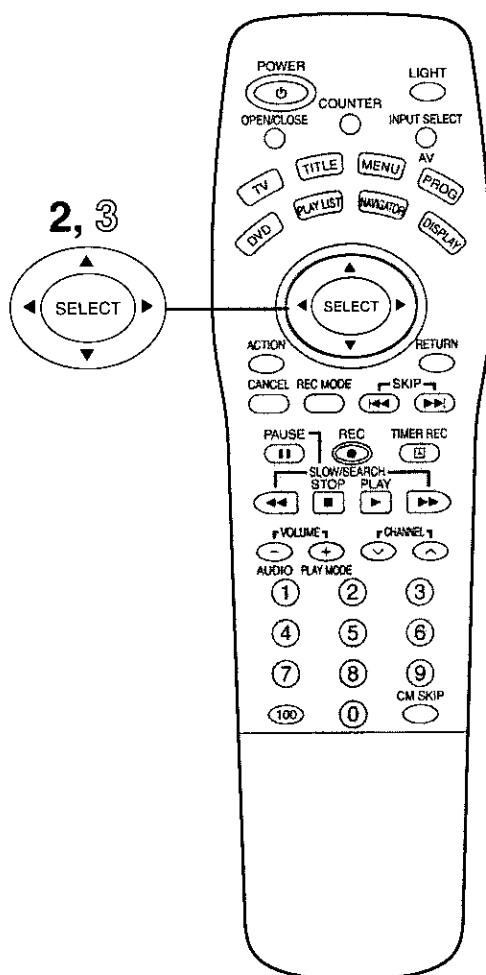
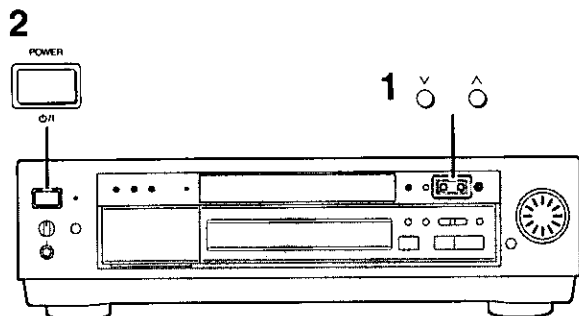
- The “Auto Clock Setting” screen is displayed.

■ If automatic clock adjustment was not possible

If “Auto Clock Setting is incomplete” appears on the screen, set clock manually (refer to page 130).

Note:

- The automatic time setting function checks and if necessary adjusts the time every day. Once the clock is adjusted manually, the time will not be checked and adjusted daily.



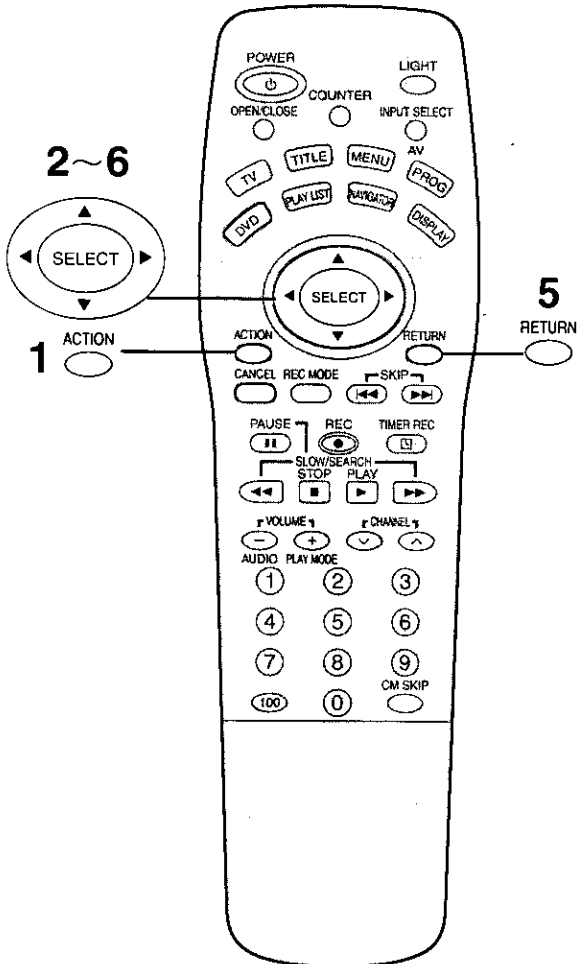
Channel settings

Auto Tuning Using the Menu Display

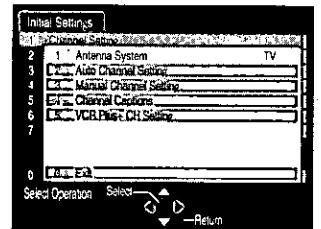
Broadcast stations should be tuned automatically by Plug in Auto Tuning. However, if auto tuning fails, follow the procedure below.

Preparation

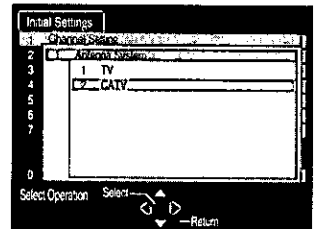
- Connect the antenna cable.
- Confirm that the TV is on and the DVD Video Recorder viewing channel is selected.
- Press [DVD].



- 1 Press [ACTION].
• The Initial Setting screen now appears.
- 2 Select "7 Channel Settings" using [▲] and [▼], and press [SELECT].
- 3 Select "1 Antenna System" using [▲] and [▼], and press [SELECT].

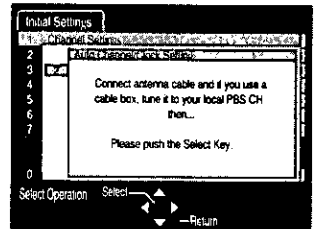


- 4 Select the desired system, and press [SELECT].



- 5 Select "2 Auto Channel Setting" using [▲] and [▼], and press [SELECT].

- When auto tuning is completed, the on-screen display disappears and the lowest channel position at which a broadcast can be tuned in is received.



Notes:

- Auto tuning searches for TV stations from VHF minimum to UHF maximum and memorizes every tuned program position. Other program positions are skipped.
- Auto tuning takes three or more minutes to complete its search.
- If the DVD Video Recorder is not correctly tuned by auto tuning, follow the procedure on the next page.

Automatic clock adjustment

If the clock adjustment is not set before performing the auto channel setting, it will be set automatically upon completion of auto channel setting.

- The "Auto Clock Setting" screen is displayed.

If automatic clock adjustment was not possible

If "Auto Clock Setting is incomplete" appears on the screen, set clock manually (refer to page 130).

To cancel auto tuning mid-operation

Auto tuning is cancelled by pressing [RETURN] at any time during auto tuning.

Manual Channel Setting

Follow steps 1 to 2 on p. 18.

- 3** Select "3 Manual Channel Setting" using [▲] and [▼], and press [SELECT].
- 4** Select the channel using [▲] and [▼], and press [▶].
 - To select the blanking of a program position, press [▲] and [▼] to "ADD" or "DELETE."

Channel Plan

TV mode

BAND	CHANNEL RECEIVED OFF THE AIR
VHF	2-13
UHF	14-69

CATV mode

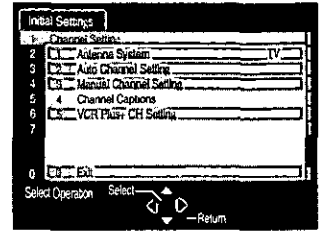
BAND	CHANNEL RECEIVED FROM CABLE
VHF	2-13
CATV LOW BAND	95-99
CATV MID/SUPER BANDS	14-36
CATV HYPER BAND	37-65
ULTRA BAND	66-94
	100-125
SPECIAL CATV CHANNEL	1

Channel Captions

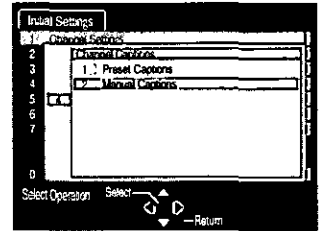
1 Preset Captions

Follow steps 1 to 2 on p. 18.

- 3** Select "4 Channel Captions" using [▲] and [▼], and press [SELECT].



- 4** Select "1 Preset Captions" using [▲] and [▼], and press [SELECT].



- 5** Select the broadcast station using [▲] and [▼], and press [▶].
- 6** Select the desired caption using [▲] and [▼].
 - It is possible to select from the following captions.

ABC, PBS, CBS, CNN, FOX, ESPN, NBC, HBO, A&E, AMC, FAM, MAX, MTV, SHOW, TBS, USA, TNT, CBC, UPN, CTV, WB, TSN, DSC, GLOB

■ To cancel the setting midway
Press [CANCEL].

2 Manual Captions

Follow steps 1 to 2 on p. 18.

- 3** Select "4 Channel Captions" using [▲] and [▼], and press [SELECT].
- 4** Select "2 Manual Captions" using [▲] and [▼], and press [SELECT].
- 5** Select the channel number using [▲] and [▼], and press [▶].
- 6** Input caption using [▲] [▼], and [▶].
 - Using [▲], any of the following characters can be input toward the right in sequence.

A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, -, &, !, /, (space)

■ To cancel the setting midway
Press [CANCEL].

Channel settings (continued)

VCR Plus+CH Setting

Follow steps 1 to 2 on p. 18.

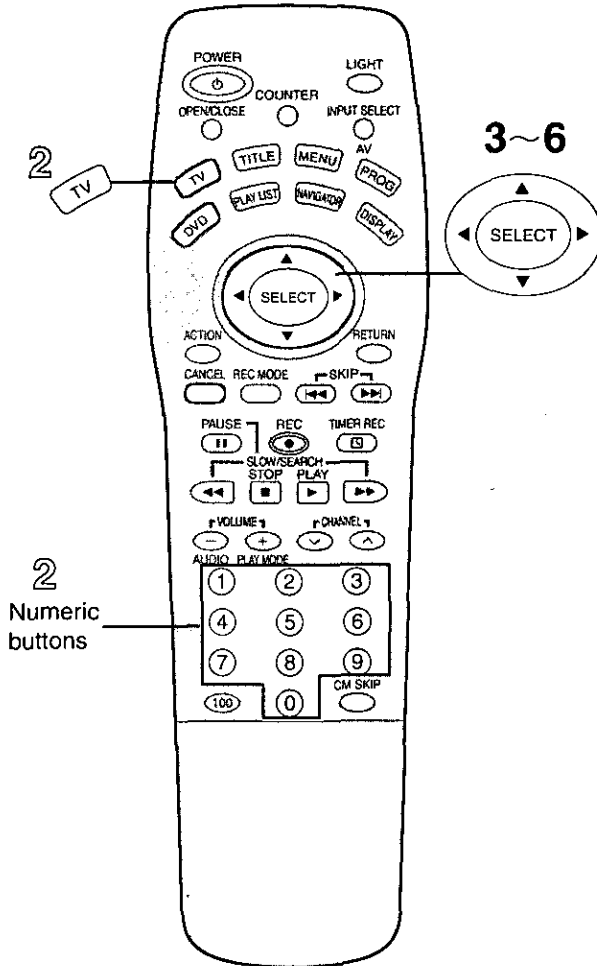
- 3 Select "5 VCR Plus+ CH Setting" using [▲] and [▼], and press [SELECT].
- 4 Select the "Guide Channel" number using [▲] and [▼].
- 5 Select "CATV Channel" or "TV Channel" using [▶] and change the channel number using [▲] and [▼].
- 6 Press [◀] to set and press [SELECT].

Note:

- You may leave lines blank if you don't receive that station, or if the Guide Channel number and Cable (or TV) Channel number are the same.

■ To cancel the setting midway

Press [CANCEL].



- | | | |
|----|--------------------|-------------------------|
| 01 | Panasonic/National | QUASAR |
| 02 | Panasonic/National | QUASAR |
| 03 | MAGNAVOX | SYLVANIA PHILIPS (RC-5) |
| 04 | ZENITH | |
| 05 | THOMSON | RCA GE |
| 06 | SHARP | |
| 07 | SHARP | |
| 08 | SONY | |
| 09 | TOSHIBA | |
| 10 | SANYO | FISHER |
| 11 | JVC | |
| 12 | HITACHI | PHILCO |
| 13 | MITSUBISHI | |
| 14 | SAMSUNG | |
| 15 | GOLDSTAR/LG | |
| 16 | GOLDSTAR/LG | |
| 17 | GOLDSTAR/LG | |
| 18 | SAMSUNG | |

Setting the remote control for TV operation

You can operate televisions from the manufacturers listed on the left with the remote control after performing the following settings.

Preparation

- Install the batteries in the remote control.

- 1 Refer to the table on the left to find the manufacturer's number for your TV set.
- 2 While holding down [TV], use the numeric buttons to enter the manufacturer number. This completes the settings.
 - Be sure to enter the number in two digits.
Example: 1 → 01
- 3 To confirm that the correct settings were made, check whether the TV can be operated properly.
 - If there is more than one code listed for the same manufacturer, try them all and select the code that works.

Notes:

- If you are using a Panasonic TV, this setting has already been made, so you do not need to perform the above setting procedure. However, this remote control may not work with some Panasonic TVs.
- Some TV models cannot be operated using this remote control (including all non-remote compatible TVs).

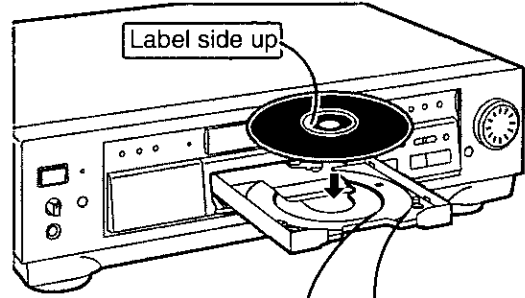
Inserting discs

1 Press [OPEN/CLOSE].

- The power is turned on automatically, and the tray slides out.

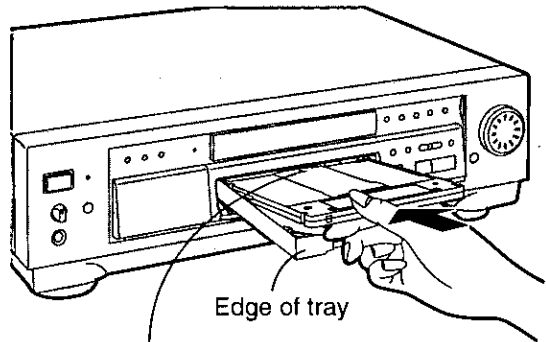
■ For **DVD-V** **VCD** **CD** and **RAM** without a cartridge

2 Place the disc on the tray with its label surface facing up.

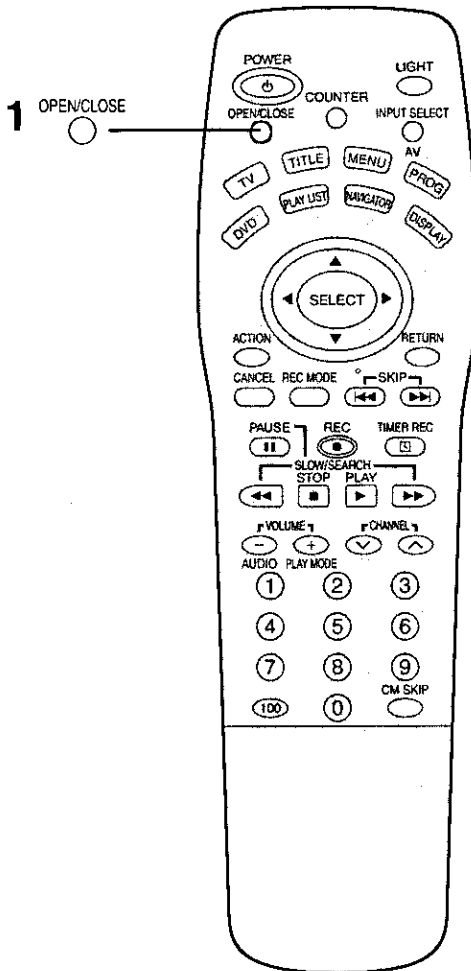
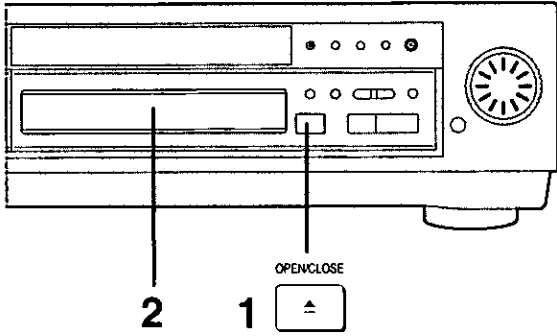


■ For a type 2 cartridge **RAM** disc

2 After checking the cartridge to see which is its top side and which is its reverse side, insert it in the ▲ direction, and place it in such a way that it fits into the outer frame of the disc tray.



Insert the disc in the [▲] direction with the label surface facing up.



Playing discs

Preparation

RAM

DVD-V

VCD

CD

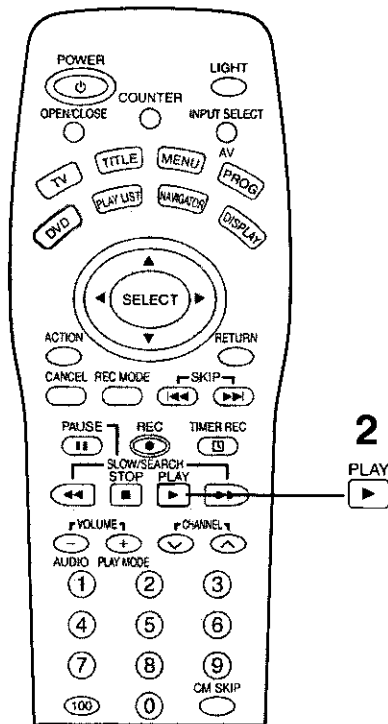
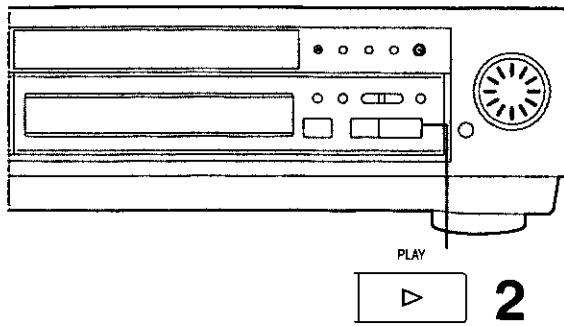
- Select the TV set's video input so that it matches the connection of the DVD Video recorder unit.
- Press [DVD] when the remote control is to be used for DVD Video Recorder's operations.

1 Insert the disc.

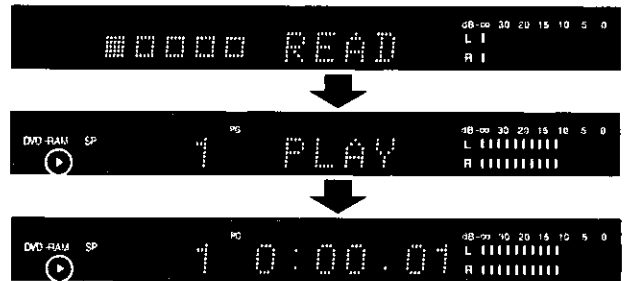
- Refer to the previous section.

2 Press [PLAY].

- Immediately after the disc is inserted, the "■□□□ READ" display appears. The only operations accepted at this time are power on/off and tray open/close.
- When all 5 squares are filled in, reading is completed, and play starts. (This takes about 20 to 30 seconds.)



Example of a DVD-RAM



"Now playing" display

■ Volume

DVD-V

- If the unit's sound is connected to a component such as a TV set, the DVD sound will generally be perceived as being lower than with other software media. If the volume is turned up for this reason at the TV set or amplifier, be absolutely sure to turn it back down after disc play.

■ When the menu screen has appeared

DVD-V VCD

The menu screen appears with most interactive DVD discs and video CDs with playback control. Refer to page 24.

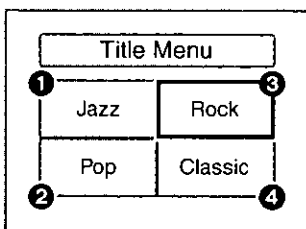
Notes:

- If the "⊘" (prohibited) mark appears on the TV screen while the buttons are being operated, it means that the unit or the disc is prohibited from performing the operation indicated.
- A blank (unrecorded) DVD-RAM disc cannot be played.

■ When play is completed

- Disc play stops automatically and, with some discs, the menu screen appears.

Example of the menu display



Stopping disc play

RAM

Press [STOP]. TV mode resumes.

- If "▶" is flashing on front panel LCD, it means that the "Resume function" (see below) is working.

DVD-V VCD CD

- The  mark appears on the TV screen when play is stopped.

When play is stopped, the screen shown on the left (middle) appears.

To clear this display and watch a TV program using the unit's tuner, press [STOP] again in the stop mode.

- When the menu has appeared while a DVD-Video or Video CD is playing, the disc will continue to rotate even if the screen is placed in the pause status. If the disc is not going to be played, press [STOP] again.
- "CD" appears even during play.

Removing the disc

Press [OPEN/CLOSE].

- Even if the power is off, it is automatically turned on, and the tray slides out.
- The disc cannot be removed in the following situations:
 - During recording
 - During programmed recording or during standby for programmed recording

Playing from the stopped position (Resume function)

RAM DVD-V VCD CD

Press [PLAY] while "▶" is flashing.

- Play resumes from the stopped position.
- The function is released when [STOP] or [OPEN/CLOSE] is pressed.
- The function does not work with discs whose elapsed time does not appear in the display window even when those discs are played.

Chapter Preview

DVD-V

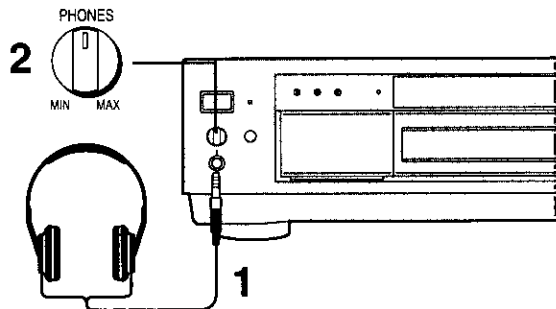
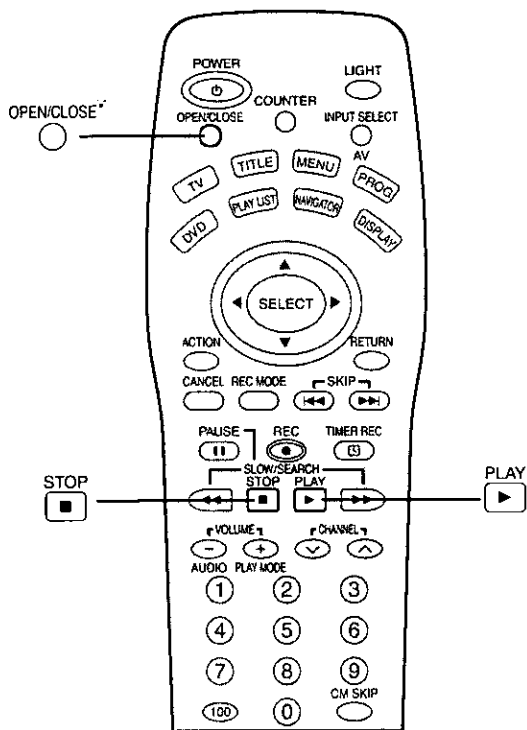
- When [PLAY] is pressed while the "Press PLAY to Preview Chapters." message is shown, Chapter Preview will be performed. This function plays the intro sections of each chapter in succession up to the position where disc play was stopped. Normal play starts from this position.
- Chapter Preview cannot be performed with some discs.

Listening through headphones

- 1 Connect the headphones (optional accessory).
- 2 Turn [PHONES] to adjust the headphone volume.

Notes:

- Prior to operation, turn down the volume level, and adjust it after operation has commenced.
- Avoid listening to sound through headphones for extended periods of time at a level of volume that is uncomfortably high for your ears.



Playing discs (continued)

When the menu screen has appeared

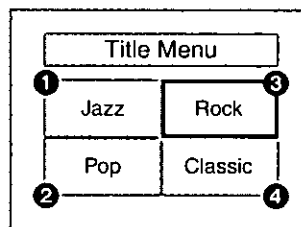
DVD-V

The menu screen may appear when play is started or when one title has finished playing.

Preparation

- Press [DVD].

- 1 Select the menu items using [◀], [▶], [▲] and [▼].
 - Example of selecting "3"



- Selection can sometimes be made using the numeric buttons on the remote control. In this case, step 2 below need not be performed.

- 2 Press [SELECT].

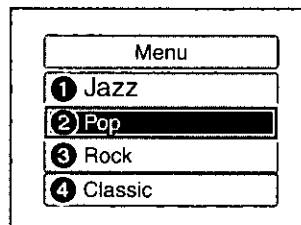
- The selected item is entered, and play starts.



VCD

With video CDs with playback control, the menu screen may appear when play is started. In this case, proceed with the selection as shown below.

Press the numeric buttons to select the menu item.



- The selected item is entered, and play starts.

Note:

- [◀], [▶], [▲] and [▼] or [SELECT] cannot be used with Video CDs. Use the numeric buttons to make the selections.

Examples:

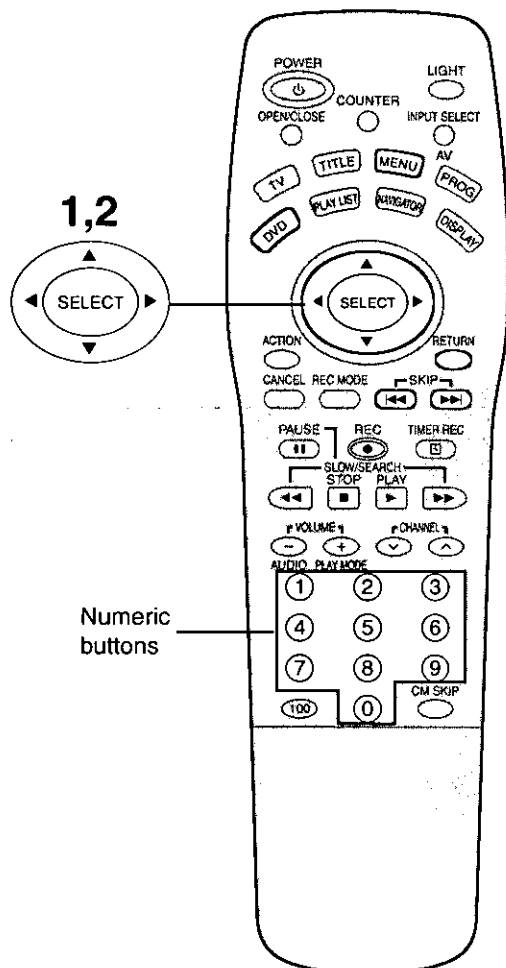
To select 5, press 0 followed by 5.

To select 10, press 1 followed by 0.

To select 25, press 2 followed by 5.

Other menu operation buttons

Differ from one disc to another so read the instructions that accompany them.



Play without using the menu

VCD

The menu function can be temporarily released, and continuous play can be performed from the beginning.

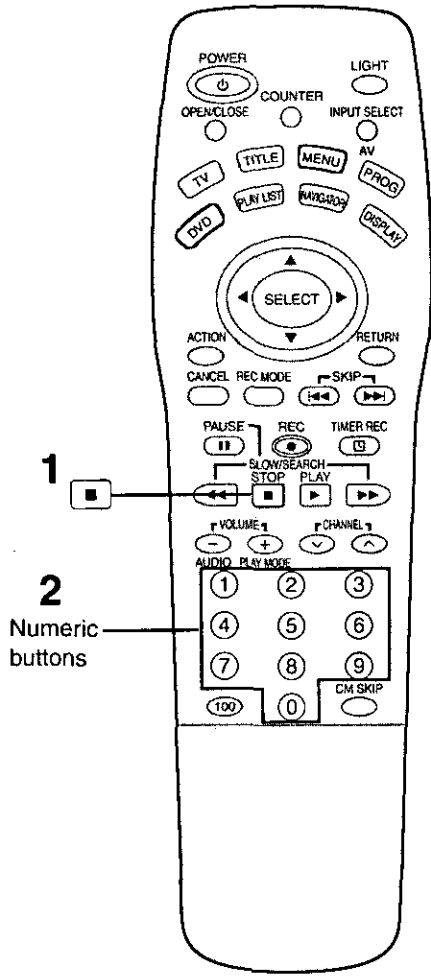
Preparation

- Press [DVD].

- 1 Press [STOP] while the menu is displayed.**
 - "PBC" (playback control) is cleared from the unit display window.
- 2 Press the numeric buttons to select the designated track number.**
 - Play starts from the selected track.
 - Refer to the disc jacket for the track numbers.
 - When playback is to be performed from the beginning, press "0" then "1."

To restore the menu screen

1. Press [STOP] to stop play.
 2. Press [MENU].
- "PBC" (playback control) lights up on the unit display window.



Playback

Using the menu

Operating the DVD menu

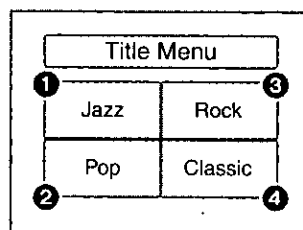
DVD-V

Many DVD discs come with a menu screen for selecting movie-making scenes and other shots in addition to the main title. Since displaying the menu screen and making the menu selections differ from one disc to another, the general procedure is described here.

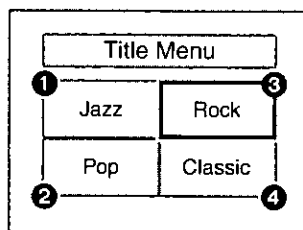
Preparation

- Press [DVD].

- 1 Press [MENU] during stop or play to display the menu.



- 2 Select the desired menu item using [◀], [▶], [▲] and [▼].



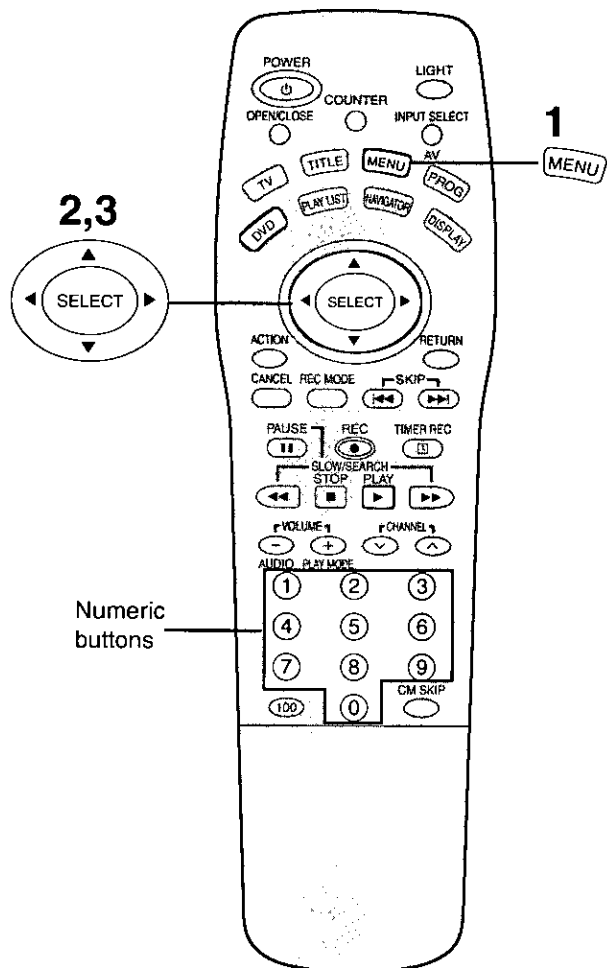
- 3 Press [SELECT] or [PLAY].



- The selected item is entered, and play begins.

Note:

- Menu items can also be selected using the numeric buttons.
- With DVD discs that do not have more than one menu, the same result may be produced regardless of whether [◀], [▶], [▲] or [▼] is pressed.



Selecting a title

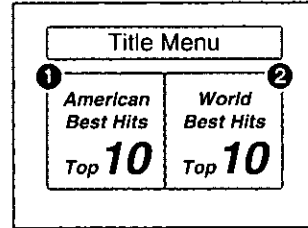
DVD-V

With DVD discs that have several movies or more than one title, titles can be selected from the top menu for playback.

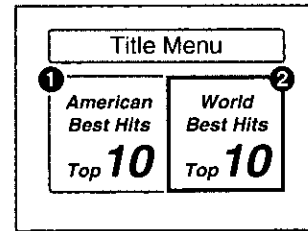
Preparation

- Press [DVD].

- 1 Press [TITLE] in the stop or playback mode to display the titles.



- 2 Select the titles using [◀], [▶], [▲] and [▼].



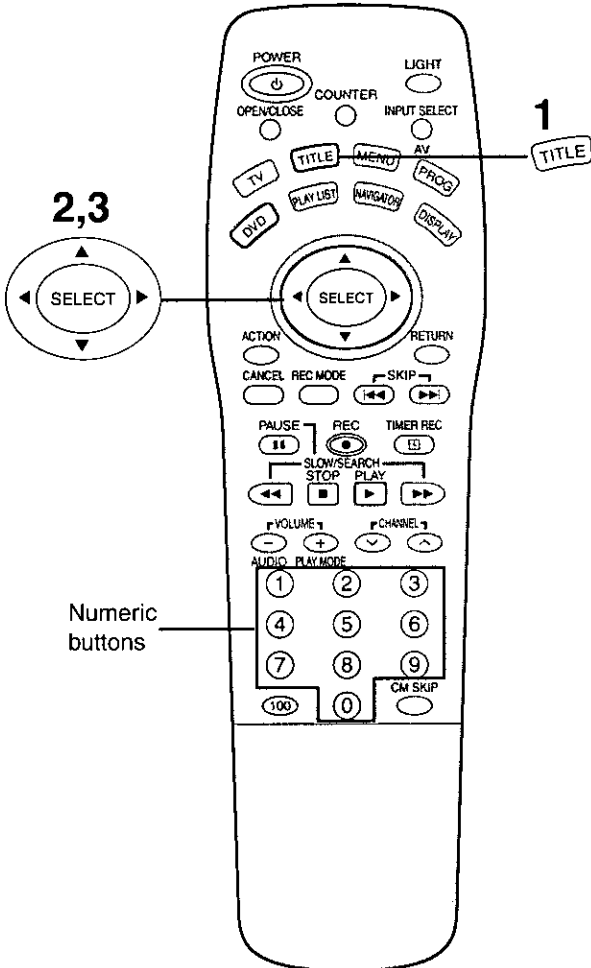
- 3 Press [SELECT] or [PLAY].



- The selected item is entered, and play begins.

Notes:

- Titles can also be selected using the numeric buttons. How the titles are selected differs from one disc to another so refer to the instructions provided with the DVD. (What is described above is the general procedure.)
- With DVD discs that do not have more than one title, the same result may be produced regardless of whether [◀], [▶], [▲] or [▼] is pressed.



Program playback

VCD

CD

A sequence of up to 100 tracks can be rearranged and played in the desired sequence.

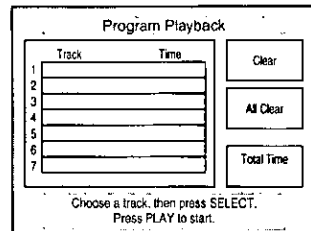
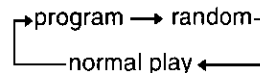
Preparation

- Press [DVD].

1 During stop:

Press [PLAY MODE] and the program playback screen is displayed.

- Each time this button is pressed, the selected mode changes in the following sequence:



2 Press [SELECT].

3 Select the track number using [▲] and [▼], and press [SELECT].

- The tracks can also be selected by pressing the numeric buttons.
Refer to the illustration on the left.

4 Repeat steps 2 and 3 to program additional tracks.

- Up to 100 tracks can be programmed.

5 Press [PLAY].

- Programmed playback starts.

■ When program playback ends

Playback stops, and the program playback screen appears.

■ Returning to normal playback

1. Press [STOP] twice during programmed playback.
2. Press [PLAY MODE] twice.

- The programming is retained. If play mode is pressed again, the current program input status is displayed.

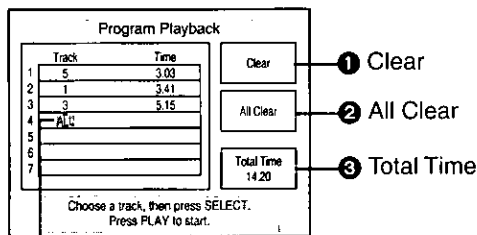
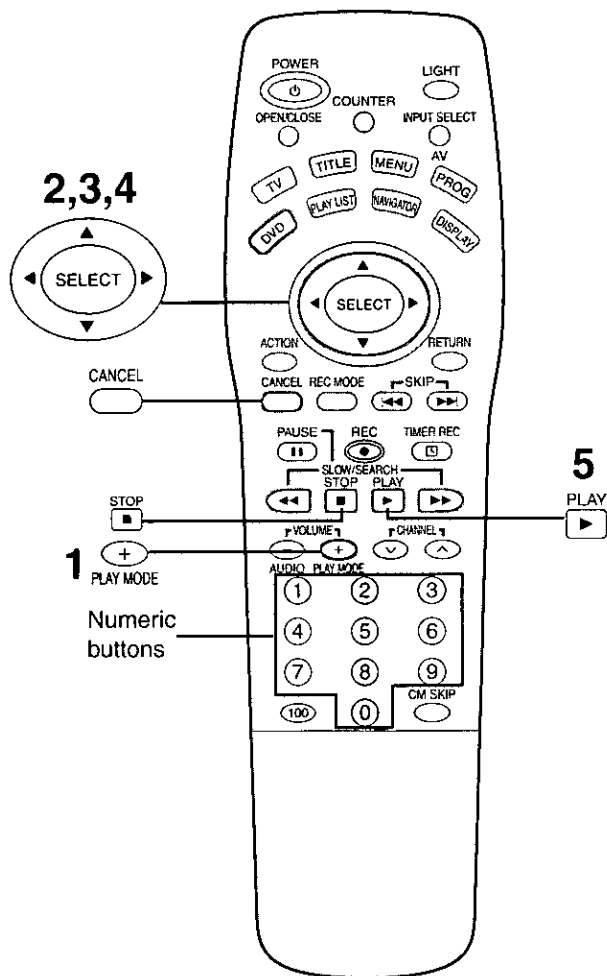
■ Playing the program tracks through again from the start during program playback

1. Press [STOP] twice. (The program playback screen appears.)
2. Press [PLAY].

■ Changing the program

On the program playback screen, select the numbers of the tracks to be changed using [◀], [▶], [▲] and [▼], and press [SELECT]. Then perform step 3 in the previous section to select the tracks to be changed.

- When [◀◀] or [▶▶] is pressed, you can toggle through the screens quickly. This function is useful when you have more than 7 tracks programmed.



When "ALL" is selected, all the tracks will be added from here.

- 1 After selecting the track to be cleared using [▲] and [▼], select this using [▶], and press [SELECT].
 - The track can also be erased by pressing [CANCEL].
- 2 To clear all the programs, select this using [▲], [▼],[▶] and press [SELECT].
- 3 The total time for program playback is displayed.
 - The total time for the selected tracks may not correspond exactly with the "Total Time." "Total Time" more accurately reflects the actual play time.

Playback

Playback modes

Play pause (still picture), frame advance (reverse), slow playback, fast forward and reverse search playback

Preparation

- Press [DVD].

Play Pause (Still Picture)

RAM DVD-V VCD CD

During playback: Press [PAUSE].



Display indicating still picture/pause

- Operation is automatically stopped and the TV screen is restored when the unit has been left standing in the still picture (pause) mode continuously for more than 5 minutes. (DVD-RAM)

Frame advance (reverse)

RAM DVD-V VCD

During play pause (still picture): Press [◀] or [▶].

[▶]: For advancing through the frames.

[◀]: For reversing through the frames (DVD-RAM, DVD-Video discs only).

- Each time one of these buttons is pressed, playback is advanced (reversed) one frame.
- When the button is held down, playback is continuously advanced (reversed).

Note:

- Frame still or field still can be selected by selecting "2 Video Settings" among the initial setting items and then selecting "7 Still Mode". (p. 121)

Slow playback

RAM DVD-V VCD

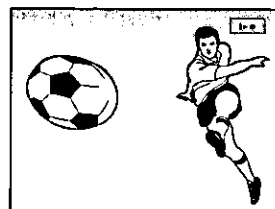
During still picture: Press [◀◀] or [▶▶].

[▶▶]: forward

[◀◀]: reverse

(DVD-RAM, DVD-Video discs only).

- The speed is increased (2-step setting) when either button is pressed again.



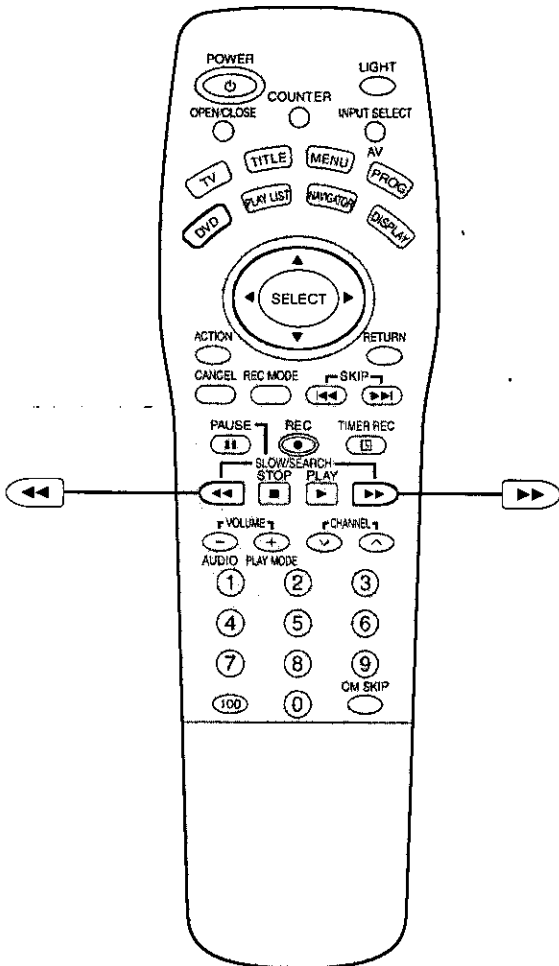
Display indicating slow reverse/slow playback

▶▶: Slow playback (at low speed)

▶▶: Slow playback (at high speed)

◀◀: Reverse direction slow playback (at low speed)

◀◀: Reverse direction slow playback (at high speed)



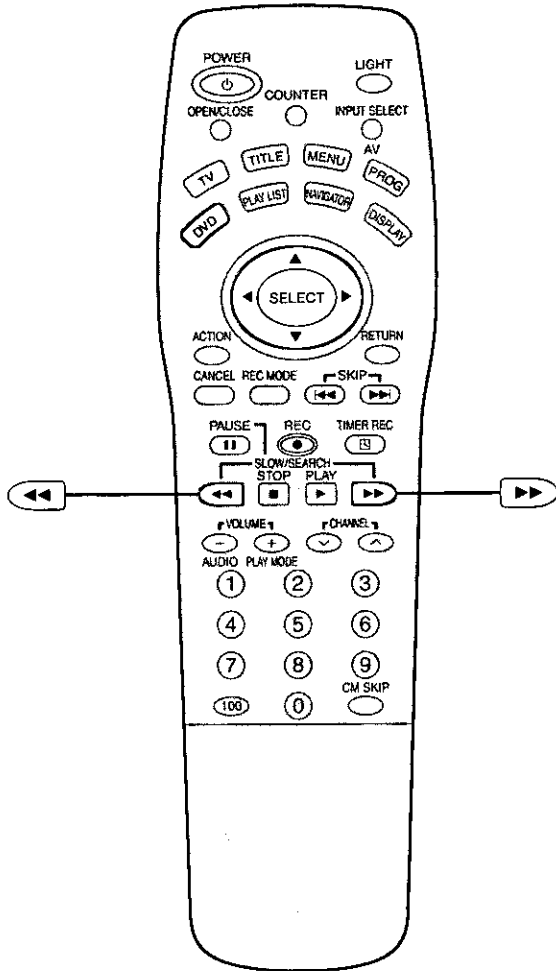
Fast forward and reverse search

RAM

DVD-V

VCD

CD



During playback:

[Remote Control]: Press [◀◀] or [▶▶].

[▶▶]: To fast forward playback

[◀◀]: To reverse search playback

- Each time [◀◀] or [▶▶] is pressed, search speed is increased.

[Unit]: Turn the Shuttle Ring and release.

Turn counterclockwise for reverse search; turn clockwise to fast forward search.

- Each time the ring is turned the search speed is increased (4 times).



- Display indicating forward/reverse search playback
- ▶▶●●●: Forward search 1 (lowest speed)
 - ▶▶▶●●: Forward search 2
 - ▶▶▶▶●: Forward search 3
 - ▶▶▶▶▶: Forward search 4 (highest speed)
 - ◀◀: Reverse search 1 (lowest speed)
 - ◀◀◀: Reverse search 2
 - ◀◀◀◀: Reverse search 3
 - ◀◀◀◀◀: Reverse search 4 (highest speed)

Playback

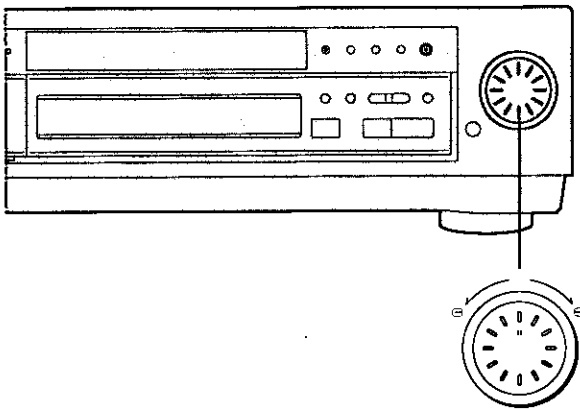
- At the forward (reverse) search 4 setting, the maximum speed is 100X for DVD-RAM discs and DVD-Video discs, 40X for Video CDs and 50X for CDs.

Note:

- The sound can be made audible at the forward search 1 setting. (Refer to "Audio during Search 1", page 125)

■ Restoring normal playback from still picture (pause), frame advance (reverse), slow playback or forward/reverse search

Press [PLAY].



Playback modes (continued)

Using the jog dial and shuttle ring

Use of the jog dial and shuttle ring enables play to be advanced frame by frame in the forward (or reverse) direction and the playback speed to be varied.

Preparation

- Press [DVD].

Advancing play frame by frame in the forward (or reverse) direction by turning the jog dial

RAM **DVD-V** **VCD**

1 [Unit]: Press [PAUSE] during play.

- The still-picture mode is established.

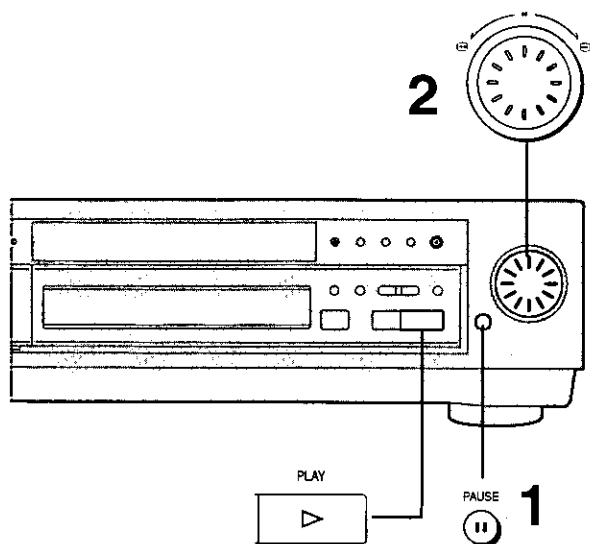
2 Turn the jog dial slowly.

Turn it counterclockwise to advance play in the reverse direction; turn it clockwise to advance it in the forward direction.

- When the dial is turned slowly play advances frame by frame. A "frame" refers to a single image of a moving picture. In this unit, a moving picture is seen by viewing about 30 frames a second succession.
- When the dial is turned quickly clockwise, frame-by-frame play in the forward direction enables slow-motion playback, and when it is turned even more quickly, regular playback is established.
- When the dial is turned quickly counterclockwise, frame-by-frame play in the reverse direction enables slow-motion reverse playback, and when it is turned even more quickly, reverse playback is established. (DVD-RAM and DVD-Video discs only)

■ To return to regular playback

Press [PLAY] or [PAUSE].



Changing the playback speed by turning the shuttle ring

RAM

DVD-V

VCD

CD

1 [Unit]: Press [PAUSE] during play.

2 Turn the shuttle ring.

Turn it counterclockwise to advance play in the reverse direction; turn it clockwise to advance it in the forward direction.

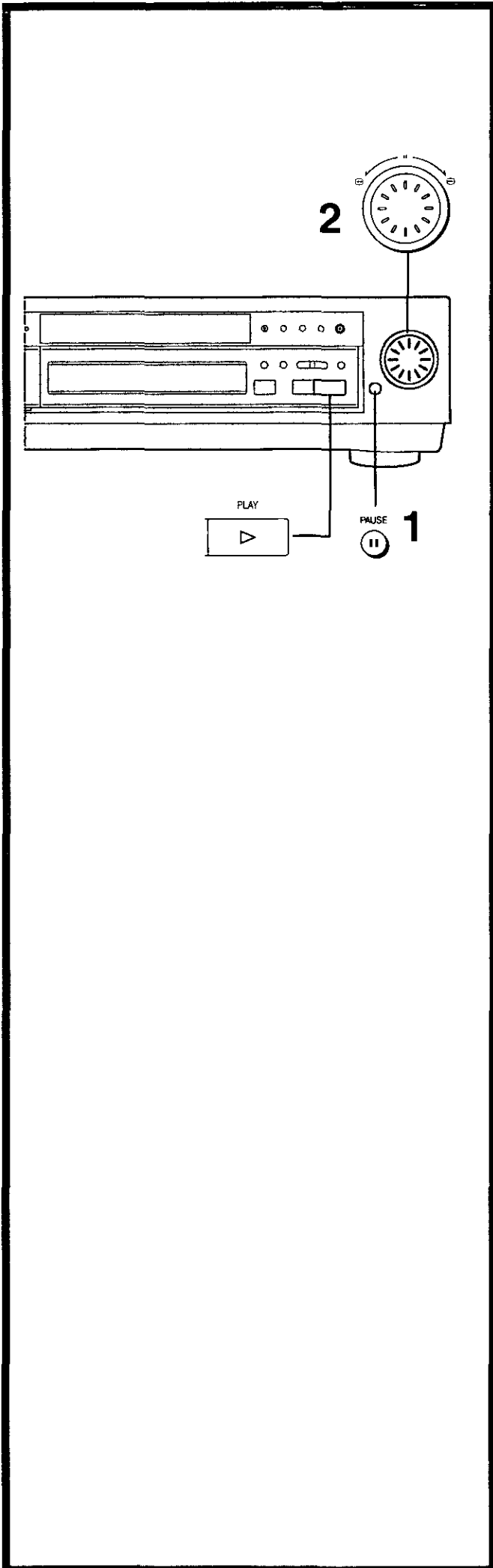
- The playback speed varies depending on the disc used and the angle to which the ring is turned.
- The speed of slow-motion playback changes in two steps. (This is not possible for CDs.)
- The speed of reverse slow-motion playback changes in two steps. (This is not possible for video CDs or CDs.)
- Reverse playback cannot be performed for video CDs and CDs.
- The speed of forward/reverse search playback play changes in four steps.
- The maximum speed during forward or reverse search is 100X for DVD-RAM discs and DVD-Video discs, 40X for video CDs and 50X for CDs.
- The sound can be made audible at the forward search 1 setting. (Refer to "Audio during Search 1", page 125.)

Note:

- If the inner jog dial is turned by mistake while the shuttle ring is turned, the playback speed may not be changed properly.

■ To return to regular playback

Press [PLAY] or [PAUSE].



Playback modes (continued)

Skipping chapters, tracks and programs

Skipping chapter and tracks

DVD-V **VCD** **CD**

Follow the steps below to skip to the start of a chapter on a DVD-Video disc or a track on a Video CD or CD, and then begin playback.

Preparation

- Press [DVD].

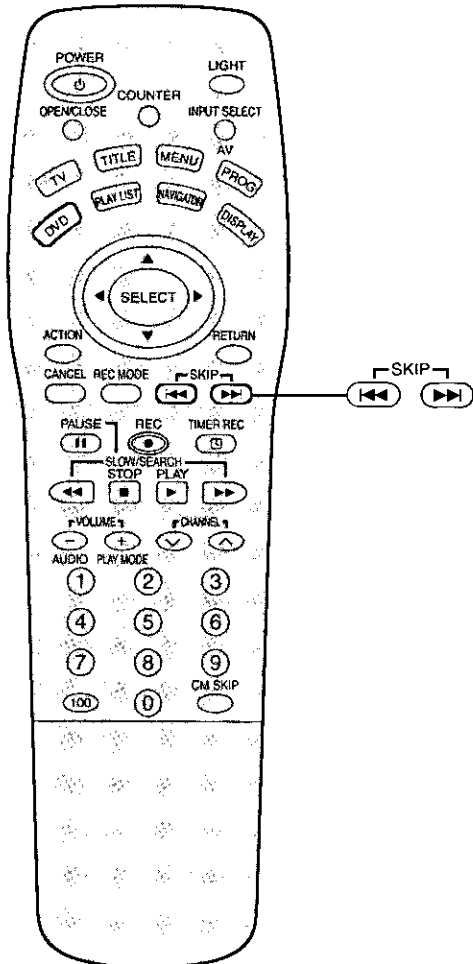
During playback or stop (pause):

Press [**⏮**] or [**⏭**].

[**⏭**]: forward

[**⏮**]: reverse

- How many chapters or tracks are skipped corresponds to the number of times the button is pressed.
- When [**⏮**] is pressed once, play will return to the start of the chapter or title playing.
However, if play is positioned at the start of a chapter or track, it will skip to the start of the previous chapter or track.



Locating recorded programs

RAM

When this unit is used to record, the material is automatically recorded as a program.

When markers (p. 45) are placed, specific locations on the disc can be accessed.

Follow the steps below to skip to the start of a program or marker position, and then begin playback.

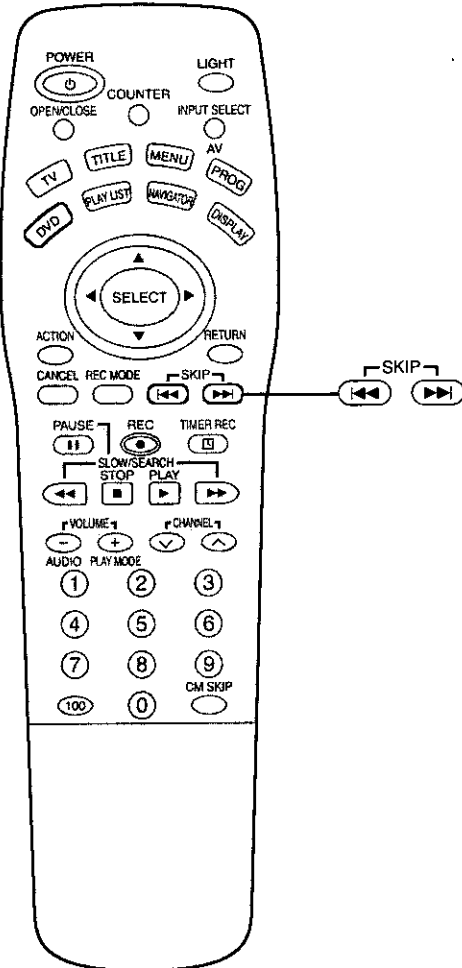
During playback or stop (pause):

Press [**◀◀**] or [**▶▶**].

[**▶▶**]: forward.

[**◀◀**]: reverse.

- Play is continued if the button is pressed during play. Pause remains in effect if the button is pressed while paused.
- When [**◀◀**] is pressed once, play will start automatically from the start of the program now playing or from the marker position immediately before. However, if play is positioned at the start of a program (or marker position), it will skip to the start of the previous program (or marker position).



Example where [**▶▶**] was pressed twice



Playback modes (continued)

One-minute skip

RAM

Press [CM SKIP] to skip commercials or other short sections.

Preparation

- Press [DVD].

During playback: Press [CM SKIP].

- Play skips about 1 minute ahead of the current play position, and then resumes playback.

Playing back selected chapters or tracks by designating numbers (direct search)

DVD-V VCD CD

Preparation

- Press [DVD].


During play or stop (while  is shown on the TV screen):

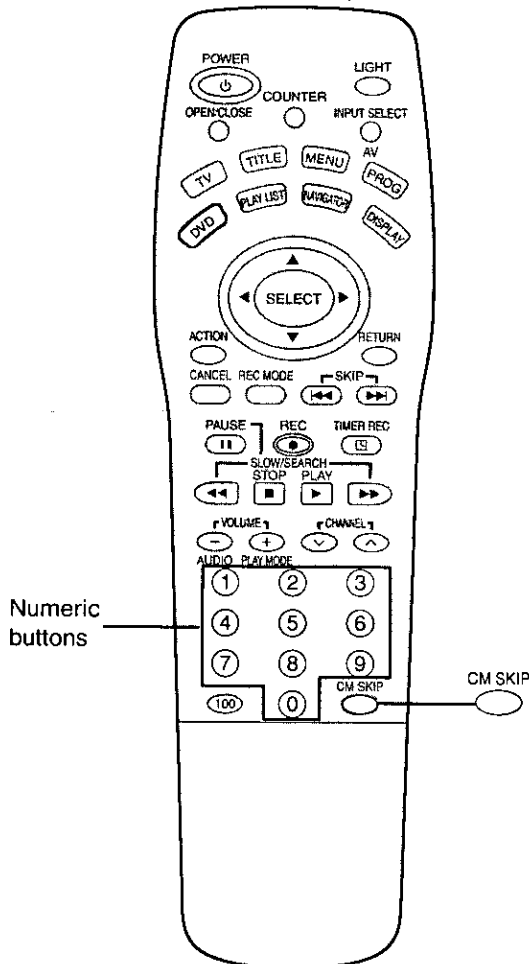
Press the numeric buttons.

Examples:

- To play chapter or track #5: press 0 followed by 5.
- To play chapter or track #10: press 1 followed by 0.
- To play chapter or track #25: press 2 followed by 5.

Notes:

- Play will start from the chapter or track selected.
- It may not be possible to perform these steps with some discs.
- To play without using the menu of a video CD with playback control, press the numeric buttons during stop (while  is shown on the TV screen).



Random playback

VCD

CD

Tracks can be automatically played in a random sequence .

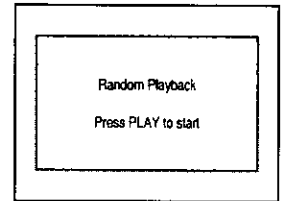
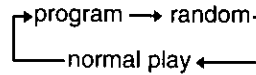
Preparation

- Press [DVD].

1 During stop:

Press [PLAY MODE] twice.

- Each time this button is pressed, the selected mode changes in the following sequence:



2 Press [PLAY].

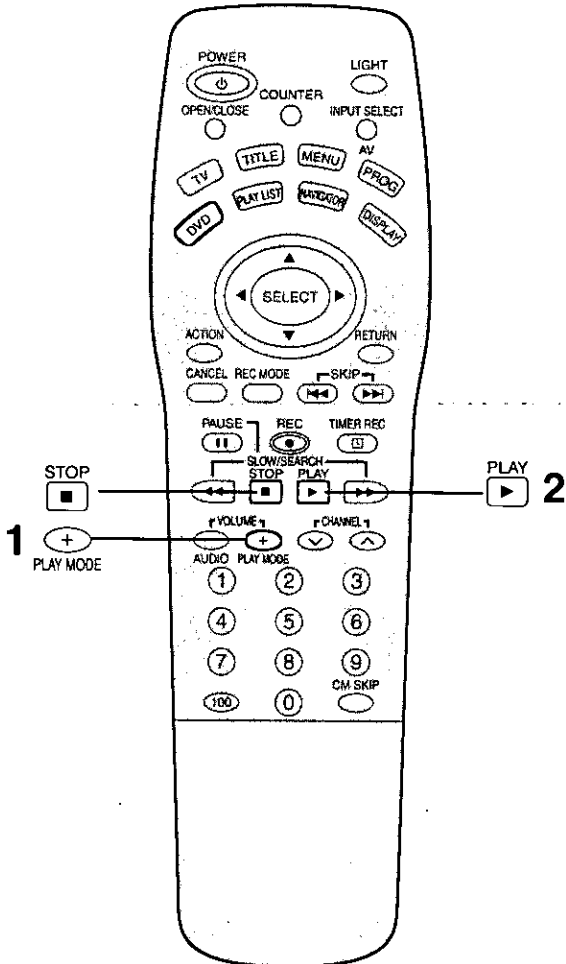
- Random play now starts.

■ When random playback ends

Playback stops, and the random playback screen is restored.

■ To release random playback

1. Press [STOP] twice during random playback.
2. Press [PLAY MODE].



Operations using the menu bar (overview)

Menu bar basic operations

RAM

DVD-V

VCD

CD

A number of different operations can be performed using the menu bar by changing the settings and checking the display information.

Preparation

- Press [DVD].

1 During playback or stop:

Press [DISPLAY] several times to display the menu bar that is to be operated.

- Each time [DISPLAY] is pressed, the screens are changed as shown on the next page.

2 Select the operation item using [◀] or [▶].

3 Depending on the item that is to be set by [▲] and [▼], press the numeric buttons or [SELECT].

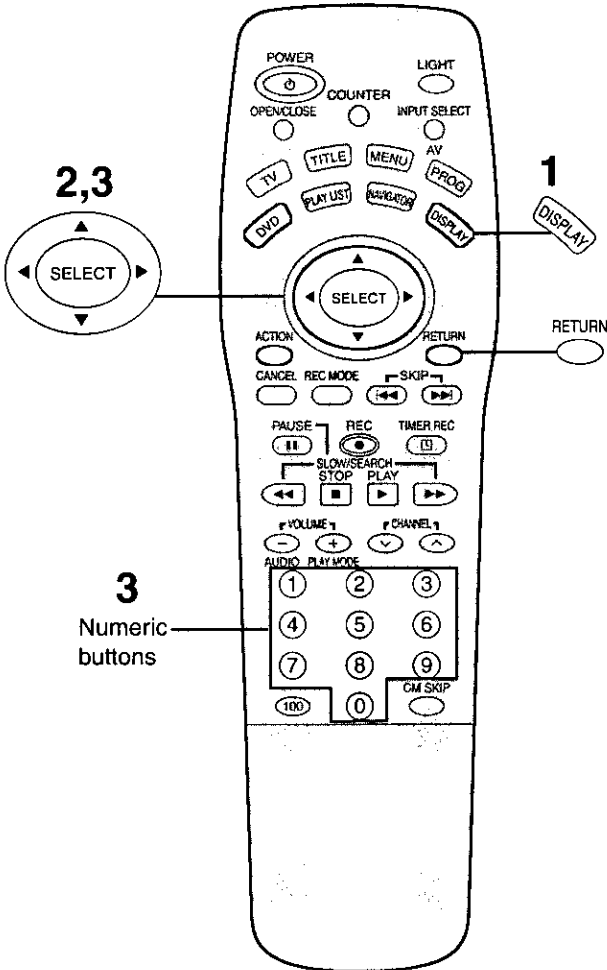
- For details on the operations of each item, refer to p. 40 to p. 51.

■ To clear the menu bar

Press [DISPLAY] several times to clear the display, or press [RETURN].

Notes:

- When [DISPLAY] is pressed during stop, playback begins and the menu bar is displayed.
- Some items are not changed until [SELECT] is pressed.
- The Menu bar may not be displayed when playing some kinds of DVD software, or if the television's automatic picture zoom function is on. Change the position of the Menu bar in the initial settings if this occurs (p. 110).
- The color (blue, violet or green) of the Menu bar can be changed (p. 110).



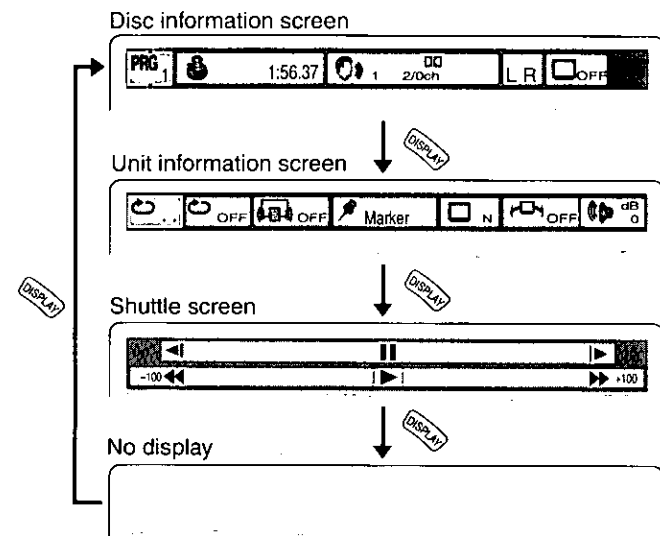
Operations using the menu bar (overview) (continued)

DVD-V

Screen displays

RAM

Each time [DISPLAY] is pressed, the following screens appear in sequence:

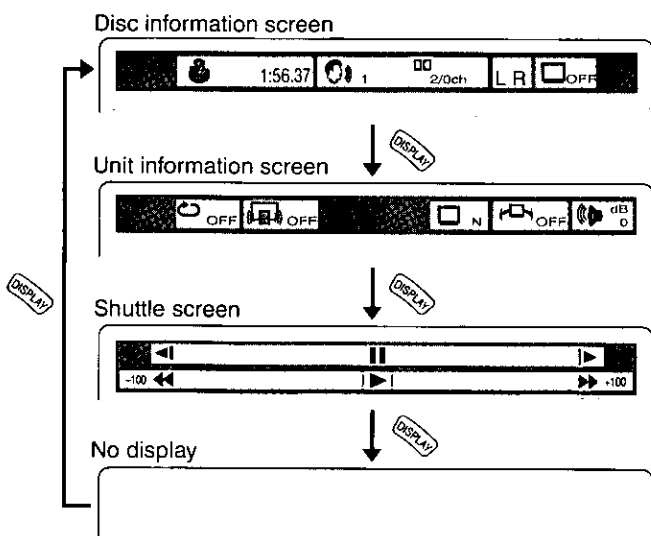


Disc information screen: The user can select programs, designate the playback start time position for each program, switch the audio information, select the left and/or right audio channel sound, and turn the subtitles on or off.

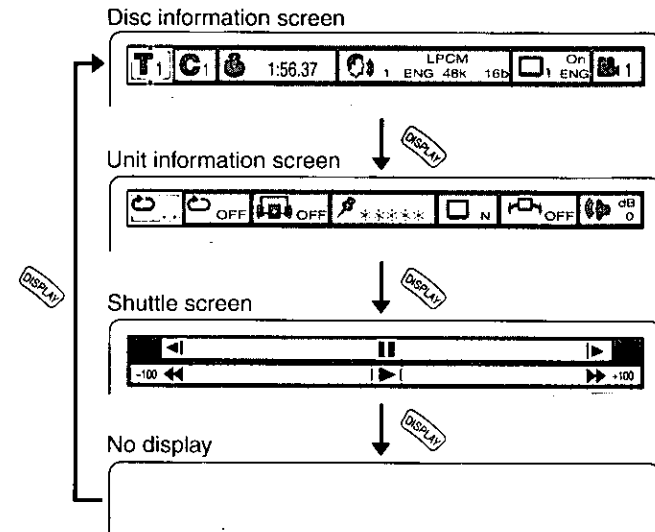
Unit information screen: The user can perform A-B repeat or repeat playback, select the Dialogue Enhancer, place markers wherever desired, and adjust the picture quality, V.S.S. effect and master volume level.

Shuttle screen: The user can perform forward/reverse search, pause and slow playback.

- During play list playback, it is not possible to select programs, perform A-B playback or place markers. (Refer to the figure below for play list menu bar operations.)



Each time [DISPLAY] is pressed, the following screens appear in sequence:



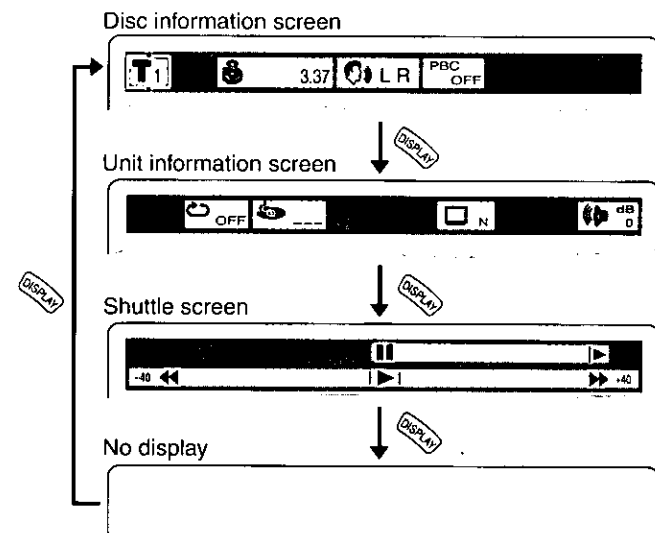
Disc information screen: The user can select titles or chapters, designate the playback start time position for each of them, switch the audio information, turn the subtitles on or off, and change the viewing angle.

Unit information screen: The user can perform A-B repeat or repeat playback, select the Dialogue Enhancer, place markers wherever desired, and adjust the picture quality, V.S.S. effect and master volume level.

Shuttle screen: The user can perform forward/reverse search, pause and slow playback.

VCD

Each time [DISPLAY] is pressed, the following screens appear in sequence:

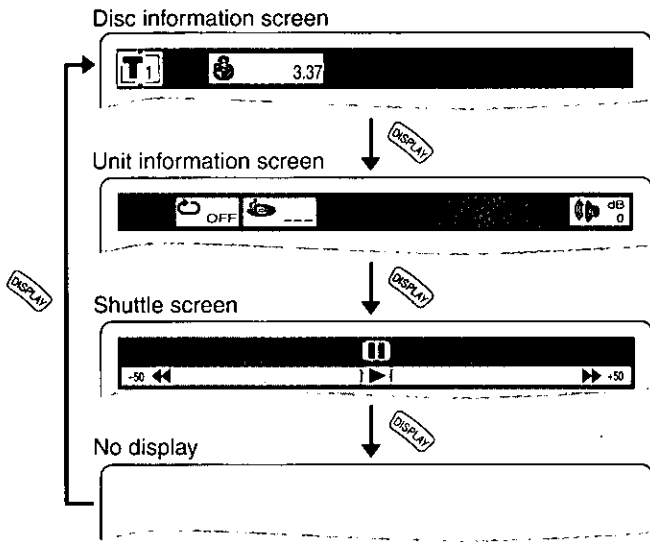


Disc information screen: The user can select tracks, switch between the elapsed track time display, remaining track time display and remaining disc time display, and select the left and/or right audio channel sound.

Unit information screen: The user can perform repeat playback, and adjust the picture quality and master volume level.

Shuttle screen: The user can perform forward/reverse search, pause and slow playback (in the forward direction only).

Each time [DISPLAY] is pressed, the following screens appear in sequence:



Disc information screen: The user can select tracks and switch between the elapsed track time display, remaining track time display and remaining disc time display.

Unit information screen: The user can perform repeat playback, and adjust the master volume level.

Shuttle screen: The user can perform forward/reverse search, and pause.

Notes:

- The item selected by [◀] or [▶] is indicated with a yellow frame.
- “▲, ▼” on the frame denotes that a change can be made using [▲] and [▼].

Example



- Some menu bar items can be operated by using other buttons provided separately whereas other functions can be operated only using the menu bar.






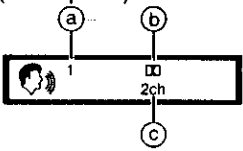







Dedicated menu bar operations

- Raising the volume level of the dialog only (Dialog Enhancer)
- Adjusting the picture quality (U: user picture quality, etc.)
- Selecting the V.S.S. mode (speaker and headphones)
- Adjusting the master volume (unit's output level)

Operations using menu bar (overview) (continued)

Disc information screen

RAM

Display (operation item)	What is selected or executed	Operation method
	Program number (Does not appear during play list playback.)	 Use [▲] and [▼] to select, and press [SELECT].
	Play time display (elapsed time of program) Play location is designated using time.	 Press the numeric buttons, and press [SELECT]. Example: 1 hour 2 minutes 30 seconds 1 → 0 → 2 → 3 → 0 
(Example 1) 	Audio information (a) Audio number (b) Audio signal type •  (Dolby Digital) (c) Number of audio signal channels •  (Dolby Digital) 1ch-3/2.1ch*, 1+1ch (SAP)	 Use [▲] and [▼] to make the selection.
	Audio mode LR (left & right) → L (left) → R (right) MAIN → SAP (for recordings in multi-channel sound)	 Use [▲] and [▼] to make the selection.
	Subtitles Subtitles OFF → ON	 Use [▲] and [▼] to make the selection.

• The selection of numbers in the any of the above items can also be performed using the numeric buttons followed by [SELECT].

※ The display on the On-Screen Menu Icons indicates the number of channels recorded on the disc.






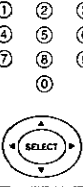

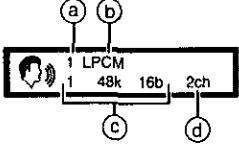
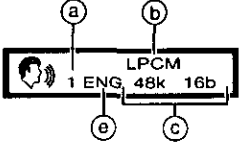

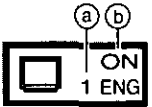






Example:

3 / 2 .1ch

0: No low frequency effect (for subwoofer)
1: Low frequency effect (for subwoofer)








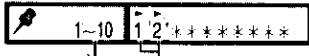


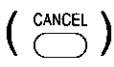

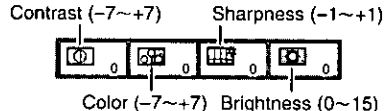







0: No surround
1: Mono surround
2: Stereo surround (left/right)

1: Center
2: Front left+Front right
3: Front left+Front right+Center

Display (operation item)	What is selected or executed	Operation method																		
	Title number (DVD-Video) Track number (Video CD, CD)	 Use [▲] and [▼] to select, and press [SELECT].																		
	Chapter number (DVD-Video only)	 Use [▲] and [▼] to select, and press [SELECT].																		
	Time Play time direct access. (DVD-Video only)	 Press the numeric buttons, and press [SELECT]. Example: 1 hour 2 minutes 30 seconds 1 → 0 → 2 → 3 → 0																		
	Play time display mode Elapsed time (DVD-Video only) Elapsed time of track → Track remaining time → Disc remaining time (Only for video CDs and CDs when menu play is OFF)	 Use [▲] and [▼] to make the selection.																		
(Example 1)  (Example 2) 	Audio number (DVD-Video only) Ⓐ Audio number Ⓑ Audio attribute LPCM (linear PCM) 2 channels □□ (Dolby Digital (AC-3)) channels 1 to 3/2.1ch* dts (digital theater system) channels 1 to 3/2.1ch* Vocal (DVD karaoke, for solos) --- (OFF) → ON Vocal (DVD karaoke, for duets) --- (OFF) → V1+V2 (Duets) → V1 (vocal 1) → V2 (vocal 2) Ⓒ Signal data 96k or 48k/16b, 20b or 24 b (where “k” denotes kHz and “b” bit) Ⓓ Number of audio signal channels Ⓔ Audio language code <table border="1" data-bbox="415 1355 1013 1541"> <tr> <td>ENG: English</td> <td>SVE: Swedish</td> <td>CHI: Chinese</td> </tr> <tr> <td>FRA: French</td> <td>NOR: Norwegian</td> <td>KOR: Korean</td> </tr> <tr> <td>DEU: German</td> <td>DAN: Danish</td> <td>MAL: Malay</td> </tr> <tr> <td>ITA: Italian</td> <td>POR: Portuguese</td> <td>VIE: Vietnamese</td> </tr> <tr> <td>ESP: Spanish</td> <td>RUS: Russian</td> <td>THA: Thai</td> </tr> <tr> <td>NLD: Dutch</td> <td>JPN: Japanese</td> <td>*: Others</td> </tr> </table>	ENG: English	SVE: Swedish	CHI: Chinese	FRA: French	NOR: Norwegian	KOR: Korean	DEU: German	DAN: Danish	MAL: Malay	ITA: Italian	POR: Portuguese	VIE: Vietnamese	ESP: Spanish	RUS: Russian	THA: Thai	NLD: Dutch	JPN: Japanese	*: Others	 Use [▲] and [▼] to make the selection.
ENG: English	SVE: Swedish	CHI: Chinese																		
FRA: French	NOR: Norwegian	KOR: Korean																		
DEU: German	DAN: Danish	MAL: Malay																		
ITA: Italian	POR: Portuguese	VIE: Vietnamese																		
ESP: Spanish	RUS: Russian	THA: Thai																		
NLD: Dutch	JPN: Japanese	*: Others																		
	Subtitles (DVD-Video only) Ⓐ Subtitle language number Ⓑ Subtitles OFF → ON (Refer to the codes above for “ENG” and other languages.)	 Use [◀] and [▶] to select Ⓐ or Ⓑ. Then use [▲] and [▼] to make the selection.																		
	Angle number (DVD-Video only)	 Use [▲] and [▼] to make the selection.																		
	Audio mode (Video CD only) LR (left & right) → L (left) → R (right)	 Use [▲] and [▼] to make the selection.																		
	Menu play (Video CD only) ON/OFF status display	No changes can be made here.																		









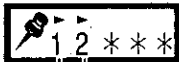




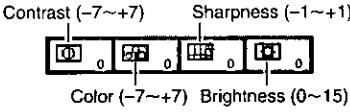







● The selection of numbers in the any of the above items can also be performed using the numeric buttons followed by [SELECT].
● With some discs, it may not be possible to implement some of the functions.

Operations using the menu bar (overview) (continued)

Unit information screen		
RAM		
Display (operation item)	What is selected or executed	Operation method
	A-B repeat playback Start point (A) and end point (B) (Not displayed during play list playback)	 Press [SELECT] at the start point and end point. To end A-B repeat, press [SELECT] again.
	Repeat playback mode PRG (program) → A (entire disc) → OFF (During play list playback: PL (play list) → OFF)	 Use [▲] and [▼] to make the selection.
	DVD Dialogue Enhancer (Available only if the sound has been recorded on the center channel using 3/2.1 channel Dolby Digital.) ON (boosting the volume level of the dialogue only) → OFF (regular volume level)	 Use [▲] and [▼] to make the selection.
	Markers ●Placing markers (Up to 999)  Marker number (for the 10's and 100', in groups of 10: 1-10, 11-20...981-990, 991-999) Marker number (for the single digits: 1-9) (Not displayed during play list playback)	 After pressing [SELECT], press it again at the location where the marker is to be placed.
	●Calling/clearing markers (Not displayed during play list playback)	 After selecting the number of markers increments of 10 using [▲] and [▼], select the bottom digit number using [◀] and [▶], and press [▲] (to call) or [CANCEL] (to clear). 
	Picture quality mode N (normal) → U → C → F → S U (user): The screen below appears, and the various adjustments can be performed. C (cinema): The picture appears in the cinema screen format. Details in dark scenes are enhanced. F (fine): The outlines are emphasized to yield a sharp-looking picture. S (soft): A soft-looking picture with minimal noise is yielded.  Contrast (-7~+7) Sharpness (-1~+1) Color (-7~+7) Brightness (0~15)	 Use [▲] and [▼] to make the selection (when [▼] is pressed, the mode is successively switched from N → S → F → C → U). In the U (user) mode, press [SELECT], and select the adjustment item using [◀] and [▶] and select the level using [▲] and [▼]. Upon completion of the adjustments, press [SELECT] again.
	V.S.S. mode (When playing DVD recorded in Dolby Digital with more than 2 channels)  (speaker) →  (headphones V.S.S.) Select the V.S.S. level in each mode. OFF → 1 (standard) → 2 (high)	 First, select the mode (speakers or headphones) using [▲] and [▼]. Then press [▶], and select the level using [▲] and [▼].
	Master volume 0 dB (max) to -60 dB (min), -∞(muted) The volume level can be set separately for DVD-RAM, DVD-Video, Video CD and CD discs.	 Use [▲] and [▼] to make the selection.

●When the Dialogue Enhancer is activated, the center channel sound is boosted, and the dialogue delivered through any of the other channels remains unaffected.

●The picture quality mode may not have any effect when the TV set is connected to the component video output connector and the following initial settings are selected: "2 Video Settings" → "3 Component Video Output Setting" → "1 Automatic" or "2 480P."

Display (operation item)	What is selected or executed	Operation method
	A-B repeat playback (DVD-Video only) Start point (A) and end point (B)	 Press [SELECT] at the start point and end point. To end A-B repeat, press [SELECT] again.
	Repeat playback mode DVD-Video: C (chapter) → T (title) → OFF Video CD: T (track) → A (entire disc) → OFF CD: T (track) → A (entire disc) → OFF	 Use [▲] and [▼] to make the selection.
	DVD Dialogue Enhancer (Only for DVD-Video discs on which the sound was recorded on the center channel using 3/2.1 channel Dolby Digital.) ON (boosting the volume level of the dialogue only) → OFF (regular volume level)	 Use [▲] and [▼] to make the selection.
	Playback mode (Video CD, CD only) --- (normal) → PRG (program) → RND (random)	No changes can be made here.
	Markers (DVD-Video only) ●Placing markers (Up to 5)  1 2 * * * Marker number	 After pressing [SELECT], press it at the location where the marker is to be placed.
	●Calling/clearing markers	 After selecting the number using [◀] and [▶], press [▲] (to call) or [CANCEL] (to clear). 
	Picture quality mode (DVD-Video, Video CD only) N (normal) → U → C → F → S U (user): The screen below appears, and the various adjustments can be performed. C (cinema): The picture appears in the cinema screen format. Details in dark scenes are enhanced. F (fine): The outlines are emphasized to yield a sharp-looking picture. S (soft): A soft-looking picture with minimal noise is yielded. 	 Use [▲] and [▼] to make the selection (when [▼] is pressed, the mode is successively switched from N → S → F → C → U). In the U (user) mode, press [SELECT], and select the adjustment item using [◀] and [▶] and select the level using [▲] and [▼]. Upon completion of the adjustments, press [SELECT] again.
	V.S.S. mode (When playing DVD recorded in Dolby Digital with more than 2 channels)  (speaker) →  (headphones V.S.S.) Select the V.S.S. level in each mode. OFF → 1 (standard) → 2 (high)	 First, select the mode (speakers or headphones) using [▲] and [▼]. Then press [▶], and select the level using [▲] and [▼].
	Master volume 0 dB (max) to -60 dB (min), -∞ (muted) The volume level can each be set for DVD-RAM, DVD-Video, Video CD and CD discs.	 Use [▲] and [▼] to make the selection.

- When the Dialogue Enhancer is activated, the center channel sound is boosted and the dialogue delivered through any of the other channels remains unaffected.
- The picture quality mode may not have any effect when the TV set is connected to the component video output connector and the following initial settings are selected: "2 Video Settings" → "3 Component Video Output Setting" → "1 Automatic" or "2 480P"

Operations using the menu bar (overview) (continued)

Shuttle screen

RAM DVD-V

Display (operation item)	Operation method
<p>Reverse slow playback Press [◀].</p> <p>Still (pause) Press [▲].</p> <p>Slow playback Press [▶].</p> <p>Reverse search playback Press [◀].</p> <p>Playback Press [▼].</p> <p>Forward search playback Press [▶].</p>	<p>Select the operation items using [◀], [▶], [▲] and [▼].</p> <p>Slow playback Use [◀] and [▶] to select the speed. (2 steps)</p> <p>Reverse slow playback Use [◀] and [▶] to select the speed. (2 steps)</p> <p>Reverse search/forward search playback Use [◀] and [▶] to select the speed. (4 steps: max. 100X normal speed)</p>

VCD

Display (operation item)	Operation method
<p>Still (pause) Press [▲].</p> <p>Slow playback Press [▶].</p> <p>Reverse search playback Press [◀].</p> <p>Playback Press [▼].</p> <p>Forward search playback Press [▶].</p>	<p>Select the operation items using [◀], [▶], [▲] and [▼].</p> <p>Slow playback Use [◀] and [▶] to select the speed. (2 steps)</p> <p>Reverse slow playback Not possible</p> <p>Reverse search/forward search playback Use [◀] and [▶] to select the speed. (4 steps: max. 40X normal speed)</p>

CD

Display (operation item)	Operation method
<p>Still (pause) Press [▲].</p> <p>Reverse search playback Press [◀].</p> <p>Playback Press [▼].</p> <p>Forward search playback Press [▶].</p>	<p>Select the operation items using [◀], [▶], [▲] and [▼].</p> <p>Slow playback Not possible</p> <p>Reverse slow playback Not possible</p> <p>Reverse search/forward search playback Use [◀] and [▶] to select the speed. (4 steps: max. 50X normal speed)</p>

Operations using menu bar (details)

Storing favorite positions in the memory (markers)

RAM

Markers can be placed at any position, playback can be made to commence from the marker positions at a later time. Up to 999 markers can be placed.

Preparation

- Press [DVD].

1 During playback:

Press [DISPLAY] twice to show the menu bar (unit information screen).

2 Select "Marker" using [◀] and [▶], and press [SELECT].

3 Press [SELECT].

- The first "*" is selected. "*" indicates an unused marker.

4 Press [SELECT] at the position to place the marker.

- "*" changes to a number. The markers are stored in sequence starting from 1.

5 If other markers are to be stored in the memory, select "*" on the right using [▶].

6 Press [SELECT] at the position to place the second marker.

- "*" changes to a number. The new marker is stored in 2.

7 If there are 11 or more markers to be stored, first select "1-10" using [◀], and then select "11-20" using [▲] and [▼].

8 Press [▶], and then press [SELECT].

9 Press [SELECT] at the position to place the marker.

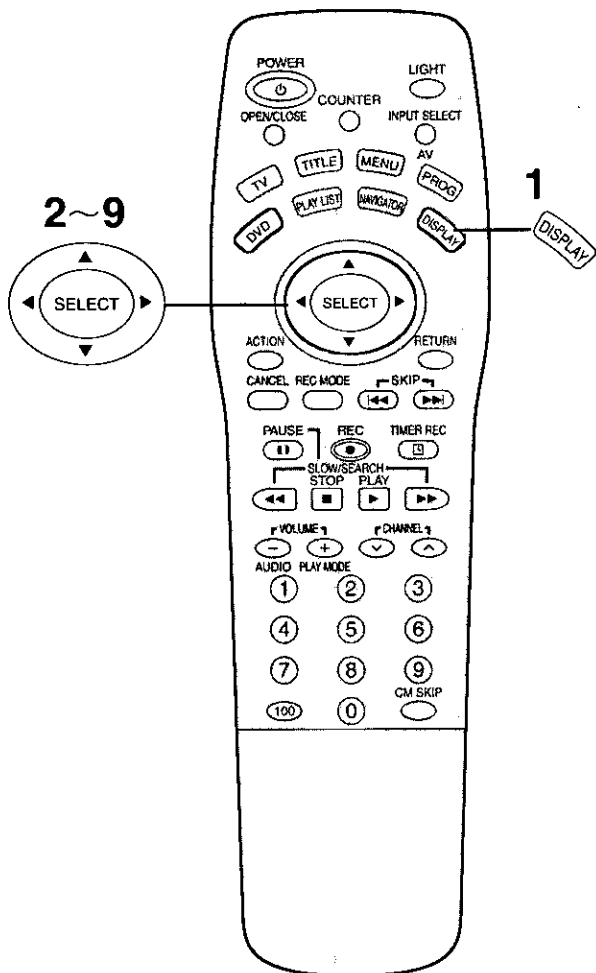
- "*" changes to a number. The markers are stored in sequence starting from 11.

- Using the same method, up to 999 markers can be placed.

- The markers are grouped in increments of 10: "1-10," "11-20," "21-30" ... "981-990," "991-999."

Notes:

- Markers cannot be placed when the write protect tab on the cartridge has been set to the PROTECT position or when the protection setting for the entire disc has been established by the direct navigator (p. 79).
- This operation cannot be performed during play list playback.
- The subtitles may not be displayed depending on the positions where the markers have been placed.



Operations using menu bar (details) (continued)

Storing favorite positions in the memory (markers) (continued)

DVD-V

Markers can be placed at any position, playback can be made to commence from the marker positions at a later time. Up to 5 markers can be placed.

Preparation

- Press [DVD].

1 During playback:

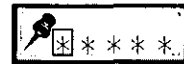
Press [DISPLAY] twice to show the menu bar (unit information screen).



2 Select "*****" using [◀] and [▶].



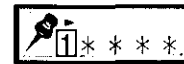
3 Press [SELECT].



- The first "*" is selected.

- "*" indicates an unused marker.

4 Press [SELECT] at the position to place the marker.

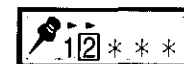


- "*" changes to a number.

5 If another marker is to be stored in the memory, select "*" on the right using [▶].



6 Press [SELECT] at the position to place the marker.

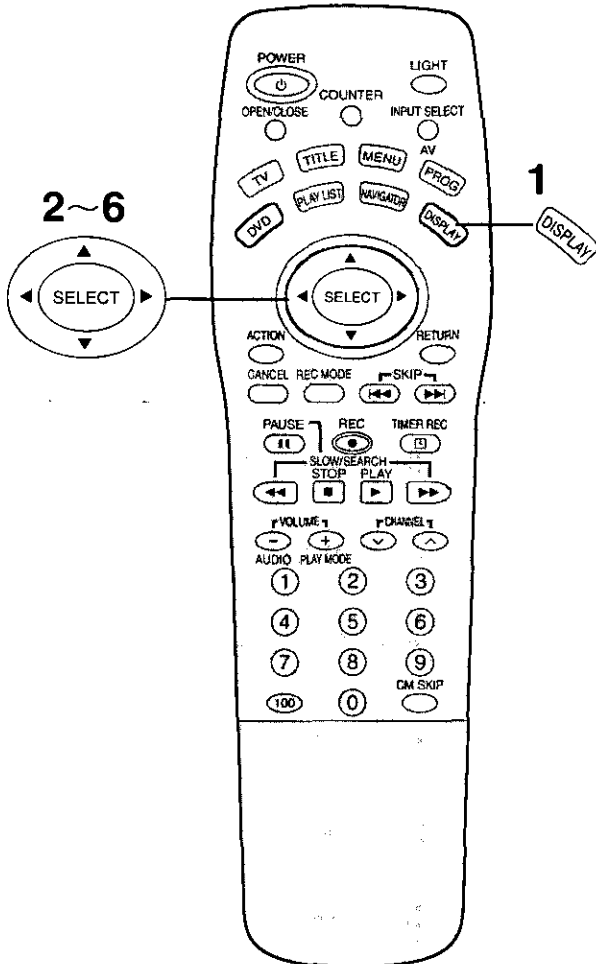


- "*" changes to a number. The new marker is stored in 2.

- Using the same method, up to 5 markers can be placed.

Note:

- All marker are cleared when disc is removed.



Playback from marker positions

RAM

Preparation

- Press [DVD].

1 During playback:

Press [DISPLAY] twice to show the menu bar (unit information screen).



2 Select "Marker" using [◀] and [▶], and press [SELECT].



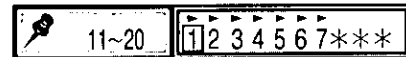
3 After pressing [◀], select the group of ten marker numbers to be called using [▲] and [▼].

Example where marker numbers 11-20 have been selected



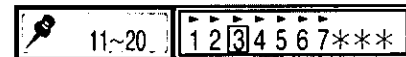
- Each time [▲] is pressed, the marker group is increased by 10. (Conversely, each time [▼] is pressed, the marker group is decreased by 10.) Example: 1-10, 11-20, 21-30, etc.

4 Press [▶], then press [SELECT].



5 Select the bottom digit using [◀] and [▶].

Example when 13 has been selected



6 Press [▲].

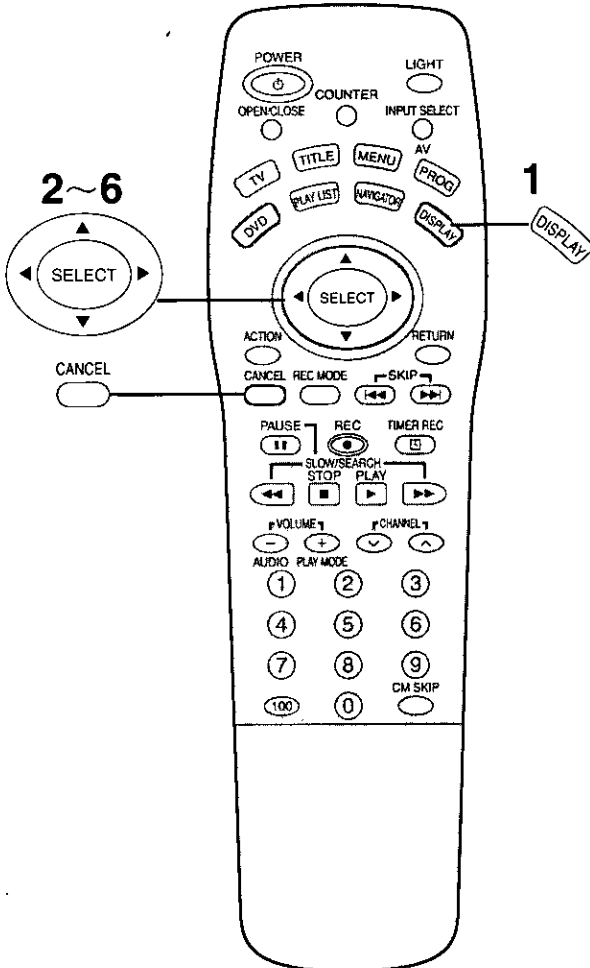
- Play skips to the position stored in marker number 13 and starts playback from that position.

Note:

- The marker positions are sorted (rearranged) in the programmed sequence and elapsed time sequence. If markers are subsequently added or cleared, the numbers stored in the memory and the numbers selected when called may not correspond.

■ Clearing markers

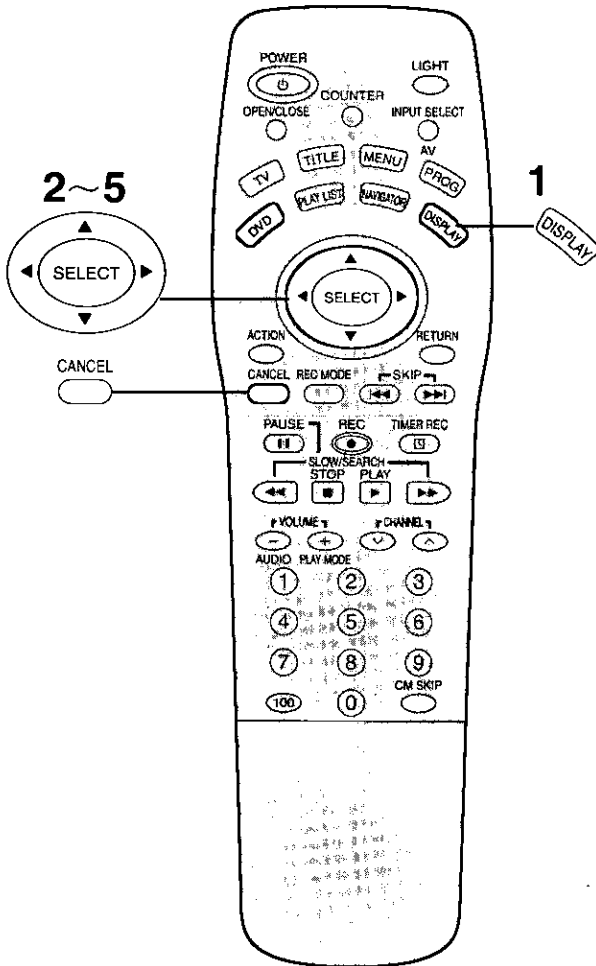
1. Perform steps 1 to 5 above.
 2. Select the number of the marker to be cleared, press [▲] to display the playback picture, and confirm that you have selected the correct marker to be cleared.
 3. Press [CANCEL].
- The marker is now cleared, and all the remaining markers are sorted (rearranged) in the programmed sequence and elapsed time sequence.



Operations using menu bar (details) (continued)

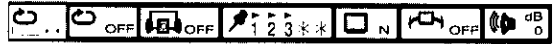
Playback from marker positions (continued)

DVD-V



1 During playback:

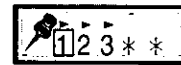
Press [DISPLAY] twice to show the menu bar display (unit information screen).



2 Select "123**" (example) using [◀] and [▶].



3 Press [SELECT].



4 Select the marker number to be called using [◀] and [▶].



Example when 2 has been selected

5 Press [▲].

- Play skips to the position stored in marker number 2 and starts playback from that position.

Hints:

- Markers cannot be placed with some DVD-Video discs.
- The subtitles may not be displayed depending on the positions where the markers have been placed.
- The markers will be erased if stop is pressed twice during play and a TV broadcast is received or the disc ejected.

■ Clearing markers

1. Perform steps 1 to 4 above.
 2. When the marker is selected, press [CANCEL].
- The number changes to "*".

Repeat playback between two designated points (A-B repeat)

RAM DVD-V

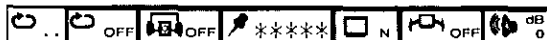
Preparation

- Press [DVD].

1 During playback:

Press [DISPLAY] twice to show the menu bar (unit information screen).

Example using a DVD-Video disc



2 Select "A-B repeat" using the [◀] and [▶].



3 Press [SELECT] to designate the start position (A) for A-B repeat playback.



4 Press [SELECT] to designate the end position (B) for A-B repeat playback.



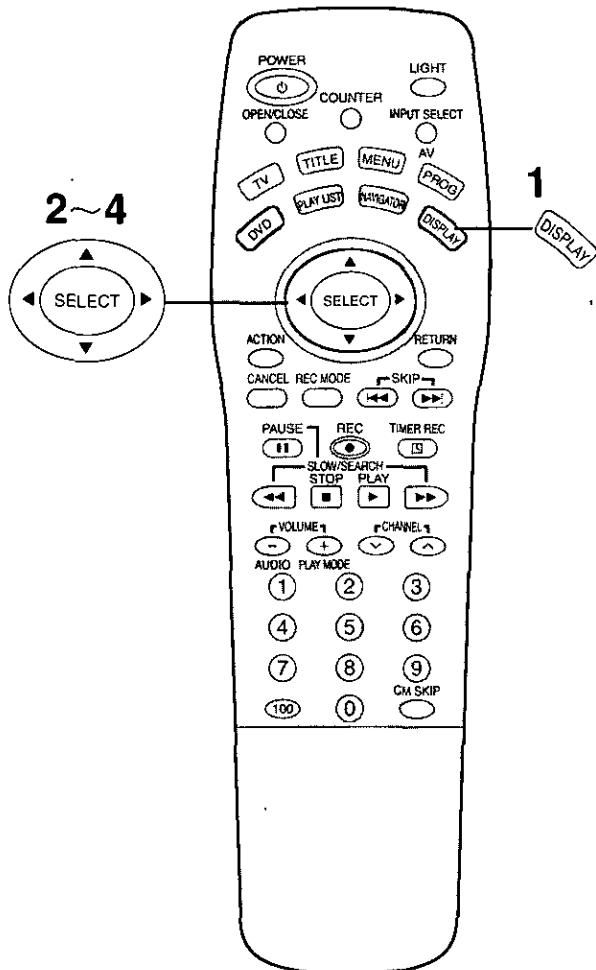
- Repeat playback between A-B now starts.

■ To stop A-B repeat playback

Select "A-B repeat," and press [SELECT].

Notes:

- This function does not work with some DVD-Video discs.
- A-B repeat playback is possible only within the same program (DVD-RAM discs) or within the same title (DVD-Video discs).
- If the program (title) has ended before the end position (B) is designated, the end point of the program (title) will serve as point B.
- In the case of a disc with subtitles, the subtitles before and after the A and B period may not be displayed.
- This operation cannot be performed during play list playback. (DVD-RAM)



Operations using menu bar (details) (continued)

Repeat playback of an entire disc, program, title, chapter or track

RAM DVD-V VCD CD

Preparation

- Press [DVD].

1 During playback:

Press [DISPLAY] twice to show the menu bar (unit information screen).

Example using a DVD-Video disc



2 Select "Repeat" using [◀] and [▶].



3 Select the repeat playback mode using [▲] and [▼].

Example where C (chapter) has been selected



• DVD-RAM discs

Each time the button is pressed, the mode is selected in the following sequence: PRG (program) ↔ A (all = entire disc) ↔ OFF.

• DVD-Video discs

Each time the button is pressed, the mode is selected in the following sequence: C (chapter) ↔ T (title) ↔ OFF.

• Video CDs, CDs

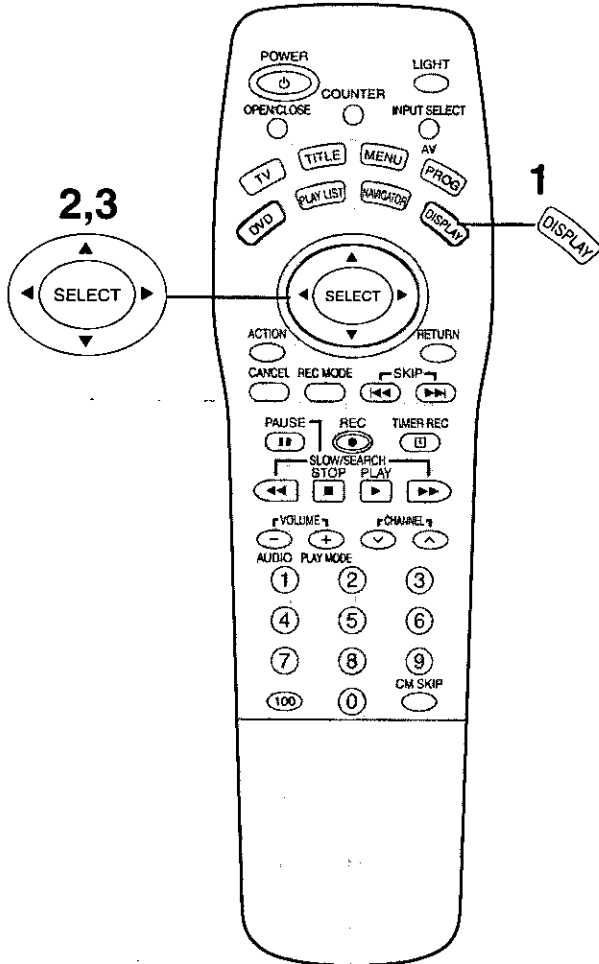
Each time the button is pressed, the mode is selected in the following sequence: T (track) ↔ A (all = entire disc) ↔ OFF.

■ To stop repeat play

Select "Repeat," and select OFF using [▲] or [▼].

Notes:

- Repeat playback is not possible with some DVD-Video discs. Neither is it possible during menu playback of Video CDs with playback control.
- You cannot repeat playback of the entire disc with DVD discs having two or more titles.



Repeating programmed tracks

VCD CD

Preparation

- Press [DVD].
- Proceed with programmed playback. (p. 35)

1 During program playback:

Press [DISPLAY] twice to show the menu bar (unit information screen).

Example using a Video CD



2 Select "Repeat" using [◀] and [▶].



3 Select the repeat playback mode using [▲] and [▼].

Example where A (all = entire disc) has been selected



- Each time the button is pressed, the mode is selected in the following sequence: T (only the track being played is repeated) → A (all: all of the programmed tracks are repeated) → OFF.

■ To stop programmed repeat play

Select "Repeat", and select OFF using [▲] or [▼].

Changing the viewing angle

DVD-V

On DVD discs on which multiple angles have been recorded, scenes can be viewed from a different angle or perspective.

- The "M" display appears on the unit display window when a multi-angle scene is being played.

Preparation

- Press [DVD].

1 During playback of a multi-angle scene:

Press [DISPLAY] once to show the menu bar (disc information screen).



2 Select "Angle" using [◀] and [▶].



3 Change to the desired viewing angle using [▲] and [▼].

Example where angle 2 has been selected

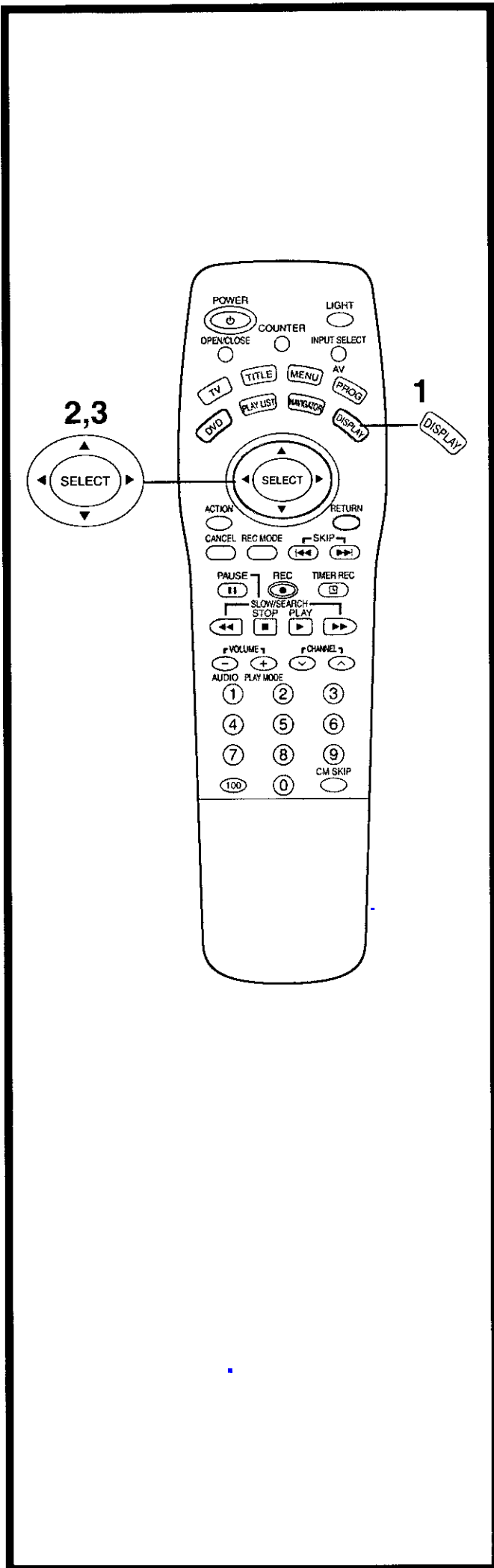


■ Clearing the menu bar

Press [RETURN].

Hints:

- The multi-angle function works only with scenes where multiple angles have been recorded.
- Some discs enable the angle to be preset before playing an angle scene. In this case, the scene will be played from the designated angle when it is reached. (Refer to the DVD Video disc's instructions.)



Playback

Recording TV programs

Preparation

- Press [DVD].
 - Insert a recordable DVD-RAM disc.
1. The disc must have some recordable space left on it.
 2. Its write protect tab must not be set to the PROTECT position. (p. 7)
 3. The disc must not be write-protected by the direct navigator. (p. 79)

Recording procedure

RAM

- 1 To select the channel to record:
[Remote control]: Press [CHANNEL].
[Unit]: Press [V] and [^].



- It is possible to select the channel by pressing the numeric buttons.

Example:

Channel "1" : [0] → [1]

Channel "12" : [1] → [2]

Channel "112" : [100] → [1] → [2]

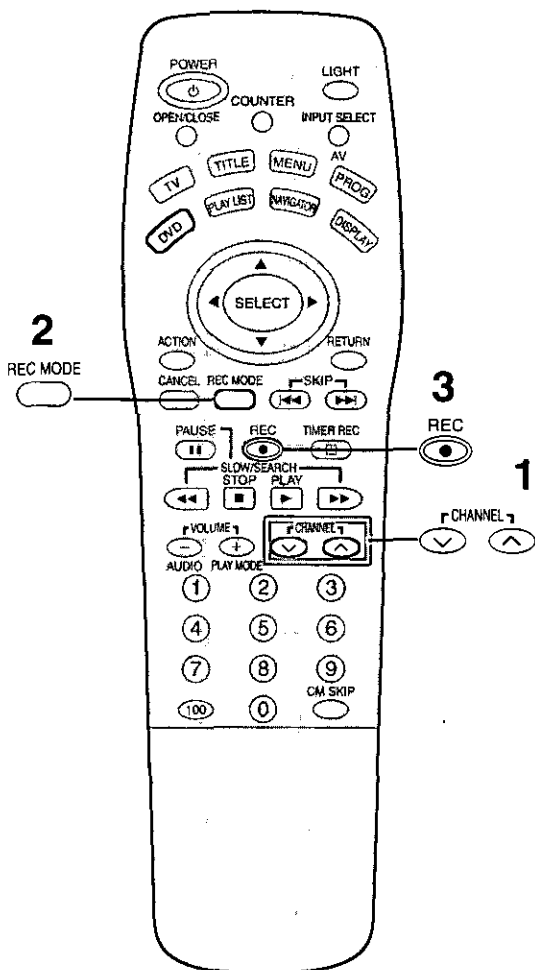
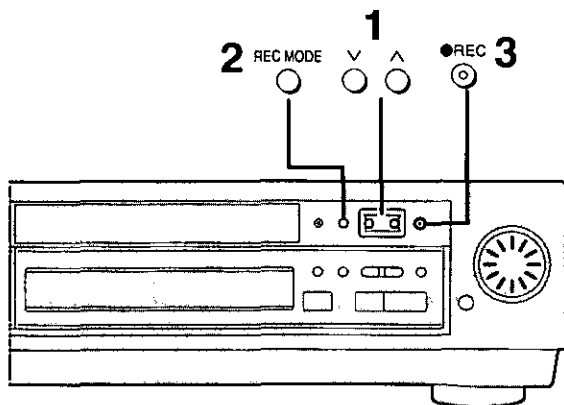
- 2 To select the recording time mode:
Press [REC MODE].

- **XP:** High picture quality recording mode: An unused 4.7GB disc is capable of approximately one hour of recording. The pictures produced have a higher quality than those recorded in the SP mode.
- **SP:** Standard play recording mode: An unused 4.7GB disc is capable of approximately two hours of recording. The pictures produced have a higher quality than those recorded in the LP mode.
- **LP:** Long play recording mode: An unused 4.7GB disc is capable of approximately four hours of recording.



- 3 Press [REC].

- Recording starts.
- The REC lamp on the unit lights.



Stopping the recording

Press [STOP].

Skipping unwanted scenes

When the recording reaches an unwanted scene:

Press [PAUSE].

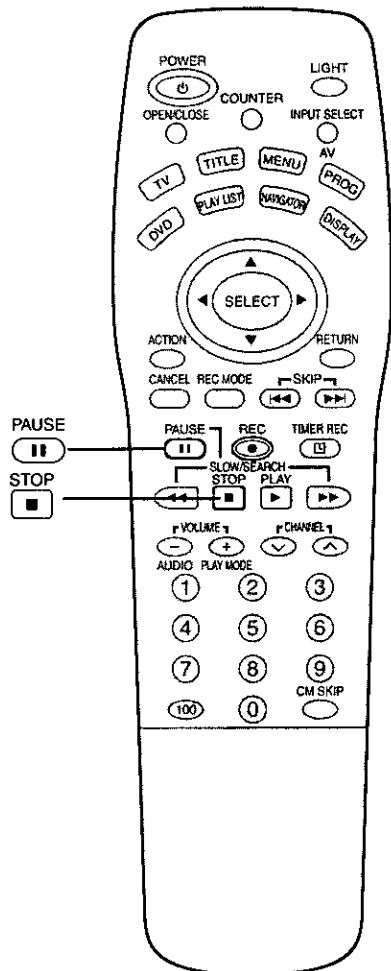
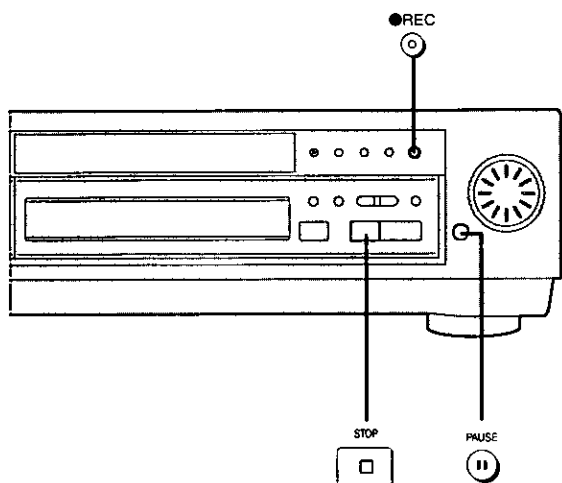
- The recording is temporarily halted.
- Press [PAUSE] or [REC] to resume recording.

Notes:

- Neither the channel nor the recording mode can be changed while recording is in progress. It can be changed while the recording is paused but it will be recorded as a separate program.
- Up to 99 programs can be recorded per disc.
- If recording is attempted when the disc is full (remaining time = 0:00), the erase list screen will appear. Erase the programs that are no longer needed or use a new disc. (p. 58)
- The unit's counter display may display a shorter time than the actual recording time but this has no effect on the actual recording.

Notes:

- For important recordings, check that recording is possible on the disc to be used.
 - Does the unit support the disc's format?
 - Is it write-protected? etc.



Recording TV programs (continued)

Adjusting the recording level

RAM

The recording level can be adjusted to your personal preference.

Turn [AUDIO REC LEVEL] to adjust the level.

- Normally, this control is left at the center position.

Hint:

- The sound will be distorted if the recording level is set too high. Adjust the level in such a way that the level meter's range will not be exceeded.
- A setting where the level is between -10dB and -5dB at the maximum is recommended.

Watching one program while recording another

Follow the steps shown below so that a TV program appears on the TV screen. This will not affect the recording.

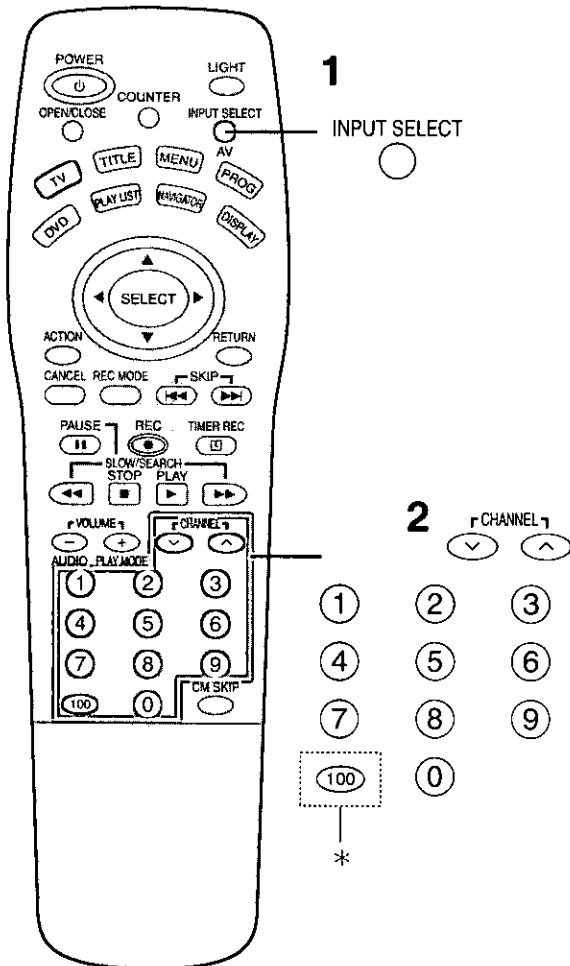
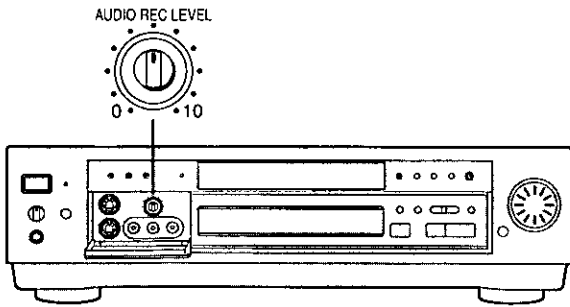
Preparation

- Press [TV].

- 1 Press [INPUT SELECT], and select "TV" as the TV input.
- 2 Select the channel using the numeric buttons or channel [^] and [v].

Note:

- You can watch TV programs by following the above steps even during programmed recording.



*[100] button

Depending on the television, it may not always be possible to operate this button. Refer to the operating instructions accompanying the television set.

End time programmed recording

RAM

At the programmed end time, the unit automatically ends the recording and turns off its power.

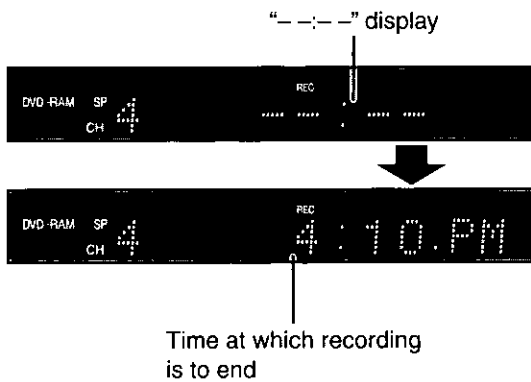
- Use this function as a means of simple programmed recording when you have to leave the unit unattended.

During recording:

Press [REC] on the unit several times.

- When it is pressed once, “-:-” appears on the unit display window.
- Every time the button is pressed, the recording end time is changed in 30-minute increments.
(Current time plus 30 minutes is displayed)
- An end time up to 2 hours from the present time can be programmed.
(Current time plus 2 hours is displayed)

Example: When the present time is 3:40 PM and the time at which the recording is to end has been set to 30 minutes later



■ To release end time programmed recording

While recording is in progress, press [REC] several times until “-:-” appears on the unit display window.

- The end time programming is released but recording continues.

Or, press [STOP].

- Both the end time programming and recording are released.

Notes:

- The end time cannot be programmed by the remote control.
- The function does not work during programmed recording.

Erasing recorded programs

Recorded programs can be erased one at a time or all at once.

Erasing programs one at a time

RAM

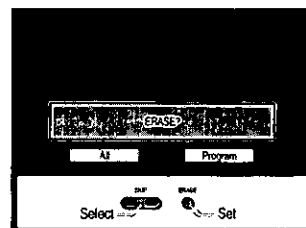
•When the programs are erased they cannot be restored.

Preparation

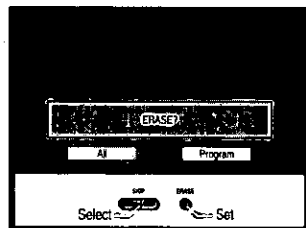
•Insert the disc with the recordings to be erased.

1 Press [ERASE] on the front panel of the unit.

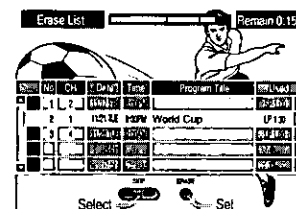
•The erase screen now appears.



2 Select "Program" using [▶▶], and press [ERASE] again.

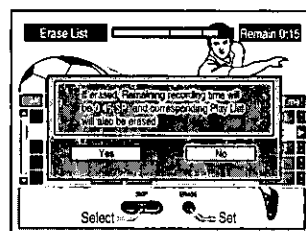


3 Select the program to be erased using [◀◀] or [▶▶], and press [ERASE] again.



4 Select "Yes" using [◀◀], and press [ERASE] again.

•The play list created from this program is also erased.



■ Stopping the erasure midway

Select "No" in step 4.

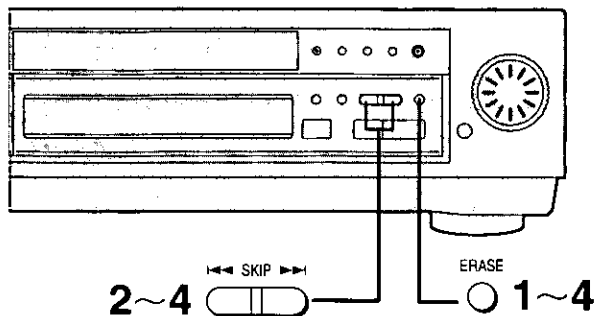
•After "Yes" has been selected and [ERASE] pressed in step 4, the erasure can no longer be stopped.

■ Using the remote control to erase programs

Use the direct navigator. For details, refer to p. 75.

Hints:

•Programs cannot be erased when the write-protect tab is set to PROTECT (p. 7) or if the disc or program has been protected with the direct navigator. (p.73 and 79)



2~4 ◀◀ SKIP ▶▶

ERASE ○ 1~4

Erasing all the programs at once

RAM

All the programs recorded on a disc can be erased at once.

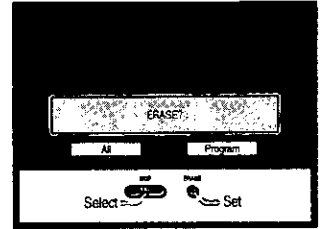
• When all the programs are erased they cannot be restored.

Preparation

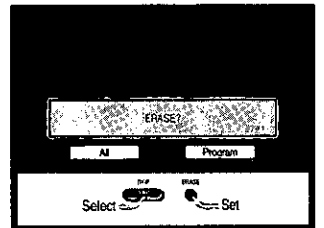
• Insert the disc with the recordings to be erased.

1 Press [ERASE].

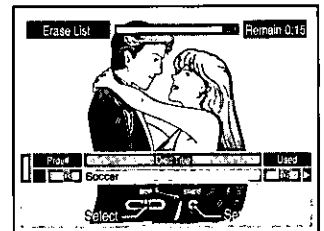
• The erase screen now appears.



2 Select "All" using [◀◀], and press [ERASE] again.

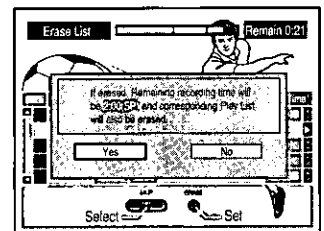


3 Press [ERASE] again.



4 Select "Yes" using [◀◀], and press [ERASE] again.

• The play list created from the programs will also be erased.



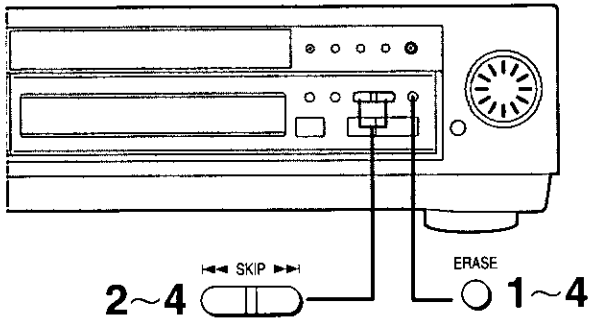
• After "Yes" has been selected and [ERASE] pressed in step 4, all contents on the disc will be erased.

Using the remote control to erase programs

Use the direct navigator. For details, refer to p. 79.

Notes:

- Programs cannot be erased when the write-protect tab is set to PROTECT (p. 7) or if the disc or program has been protected with the direct navigator. (p. 73 and 79)
- Erasing programs is not possible during playback.



Erasing recorded programs

(continued)

When the disc becomes full (remaining time = 0:00), recording will no longer be possible. If the [REC] is pressed, the erase list screen will appear to enable you to erase any unnecessary programs among the previous recordings or the contents of the whole disc to be erased.

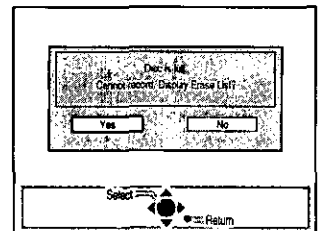
Erasing programs one at a time with the erase list

Preparation

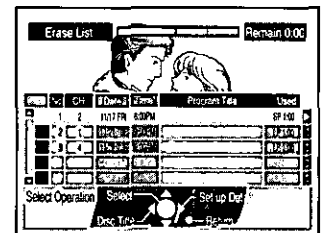
- Press [DVD].

RAM

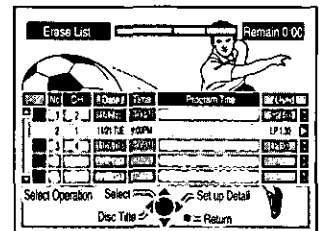
- 1 If the record button is pressed and the screen shown in the figure below appears, select "Yes" using [◀], and press [SELECT] to display the erase list



- The erase list screen now appears.

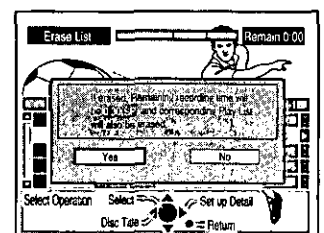


- 2 Select the program to be erased using [▲] and [▼], and press [SELECT].



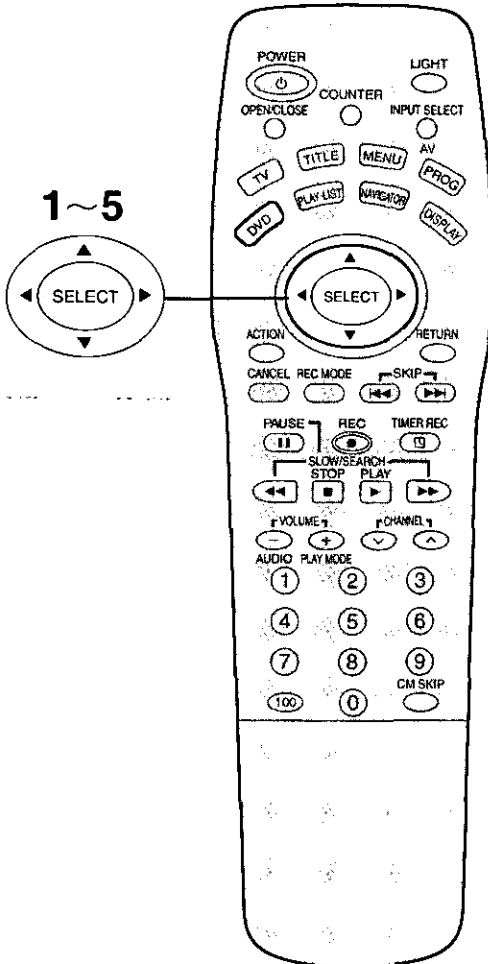
- 3 Select "Yes" using [◀], and press [SELECT].

- The play list created from this program will also be erased.



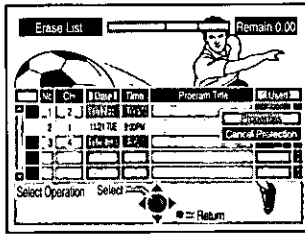
Hint:

- If there are no programs on the list that can be erased, use a different disc to proceed with your recording.



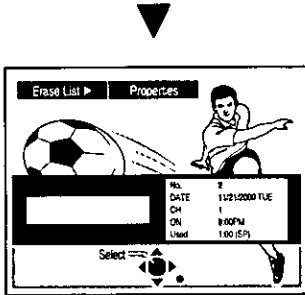
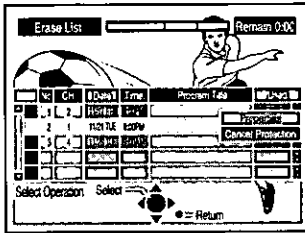
Checking the program contents before proceeding with erasure

- 1 Select the program to be erased using [▲] and [▼], and then press [▶].



- 2 Select "Properties" using [▲] and [▼], and [SELECT].

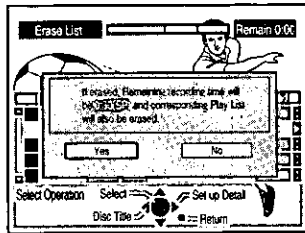
- The title, if one has been provided, the program number, recording date, channel, start time and recording time will be displayed.



- 3 Press [SELECT]. After returning to the erase list screen, press [SELECT] again.

- 4 Select "Yes" using [◀], and press [SELECT].

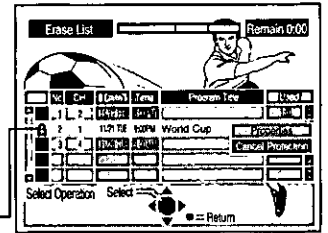
- The play list created from this program will also be erased.



When programs are protected (write-protected)

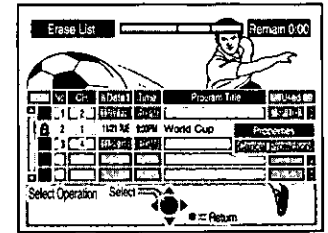
Programs protected with erasure prevention by the direct navigator cannot be erased. To erase them, release the protection setting.

- 1 Select the protected program to be erased using [▲] and [▼], and press [▶].

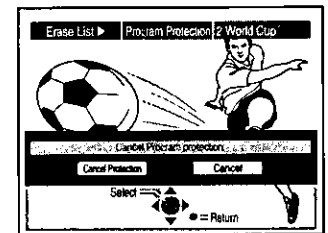


Padlock icon

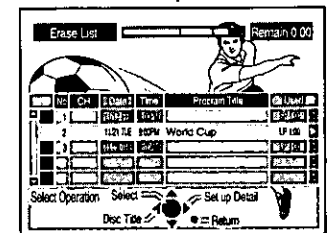
- 2 Select "Cancel Protection" using [▼], and press [SELECT].



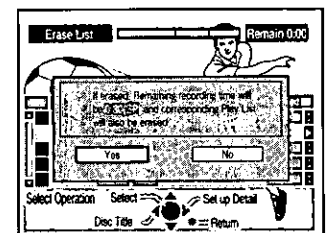
- 3 Select "Cancel protection" using [◀], and press [SELECT].



- The Padlock icon is cleared.



- 4 Press [SELECT].



- 5 Select "Yes" using [◀] and press [SELECT].

- The play list created from the program is also erased.

■ How to protect programs

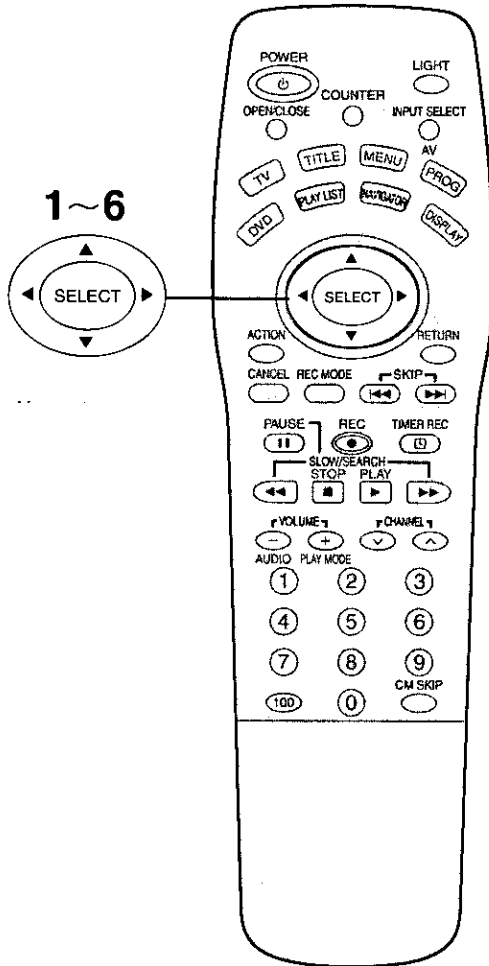
Refer to p. 73.

Erasing recorded programs

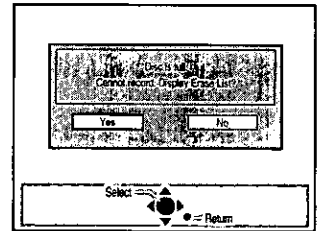
(continued)

Erasing all the programs at once with the erase list

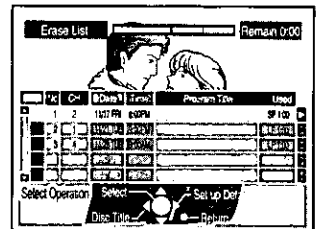
RAM



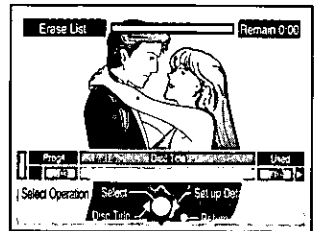
- 1 If [REC] is pressed and the screen shown in the figure below appears, select "Yes" using [◀], and press [SELECT] to display the erase list.



- The erase list screen now appears.



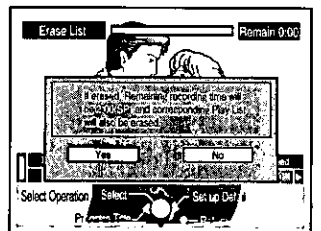
- 2 Press [◀].



- 3 Press [SELECT].

- 4 Select "Yes" using [◀], and press [SELECT].

- The play list created from the programs will also be erased.



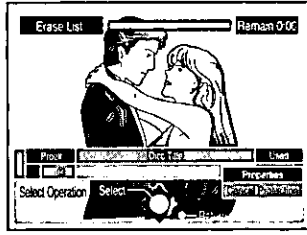
Note:

- If you do not want to erase the entire contents of the disc, use another disc to proceed with your recording.

Checking the disc contents before proceeding with erasure

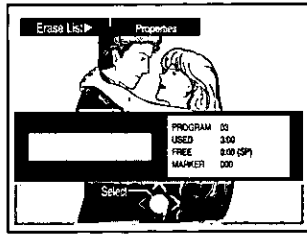
- After performing steps 1 and 2 of the procedure shown on page 60, continue as follows.

3 Press [▶].

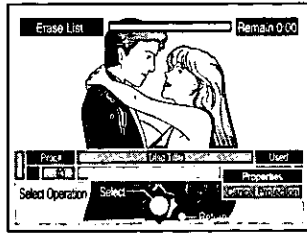


4 Select "Properties" using [▲] and [▼], and press [SELECT]. Press [SELECT] again to exit "Properties".

- The disc title, if one has been provided, the number of programs, total recording time, remaining time and number of markers placed will be displayed.

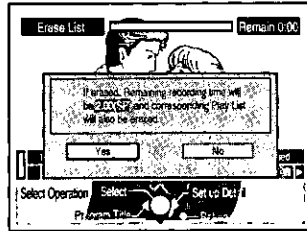


5 Press [SELECT] again to continue erasing.



6 Select "Yes" using [◀], and press [SELECT].

- The play list created from the programs will also be erased.



■ Stopping the erasure midway

Select "No" in step 6.

Note:

- Use another disc if you do not wish to erase the programs.

When the disc is write-protected

A disc that has been write-protected with the direct navigator cannot be erased as is. To erase the contents of a write-protected disc, release the protection setting. (P79)

- After releasing the protection setting, proceed with steps 1 to 4 on page 60.

Timer Recordings

This function lets you program the DVD Video Recorder for unattended automatic recording of desired TV programs. You can program timer recordings in two different ways:

- (1) By entering the VCR Plus+ PlusCode published alongside the TV program listings in newspapers and magazines (explained below); or
- (2) By entering the necessary information with the remote control while viewing the Menu Display on the TV screen (see p. 64).

This DVD Video Recorder lets you program up to 8 TV programs (including weekly and daily programs) for unattended recording up to one month in advance.

Programming with the VCR Plus+ Function

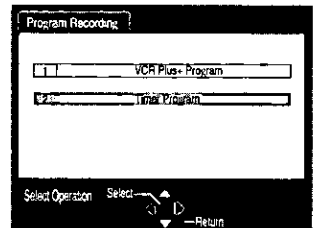
The VCR Plus+ PlusCodes (numbers) assigned to each TV program and published alongside the TV program listings in newspapers and magazines make it extremely easy to set the DVD Video Recorder for timer recording.

The duration of a timer recording programmed with VCR Plus+ PlusCode may be slightly longer than the actual duration of the TV program.

Preparation

- Press [DVD].
- Check that the time showing on the unit is the correct time.
- Insert a disc that can be recorded on. (Insert a disc which has more time remaining than the length of the timer recording.)

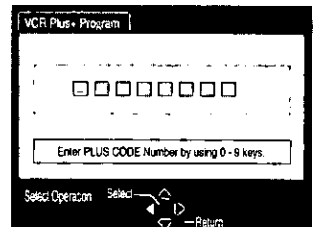
- 1** Press [PROG] to display the "Program Recording" screen.



- 2** Select "1 VCR Plus+ Program" using [▲] and [▼].

- 3** Press [SELECT].

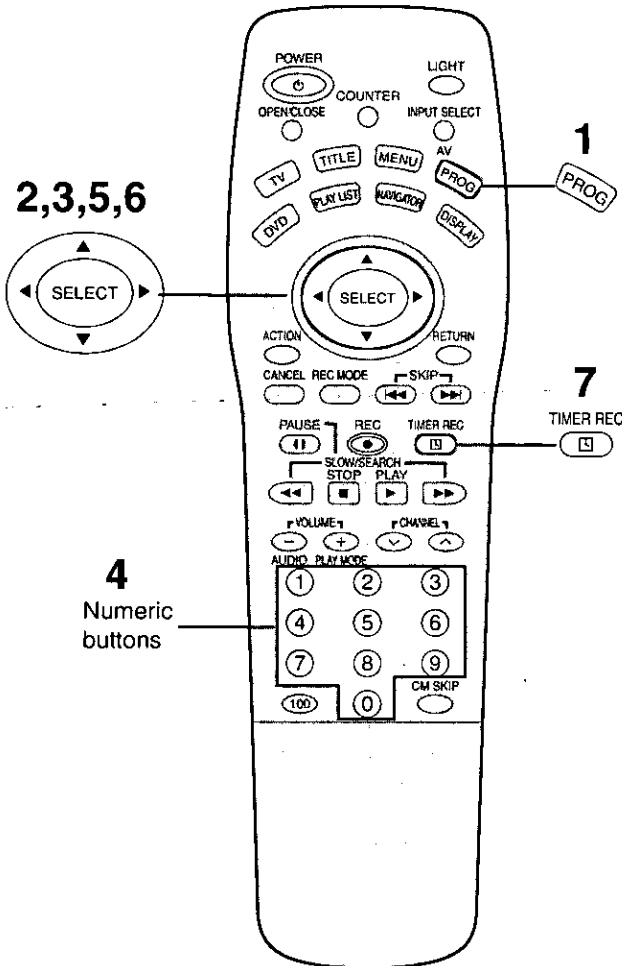
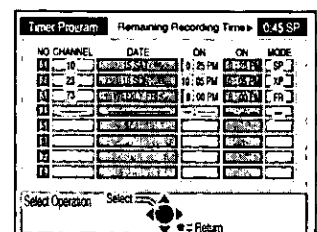
- The "VCR Plus+ Program" screen appears.



- 4** Press the numeric buttons to enter the PlusCode.

- If you have entered a wrong digit, press [◀] and then enter the correct digit.
- If the message "Invalid entry. Please check number." appears on the screen, check that the input code is correct and that the channel has been registered.

- 5** Press [SELECT] to display the program content.



Pats. 5,307,173; 5,335,079; 4,908,713; 4,751,578; and 4,706,121

6 Select "MODE" using [◀] and [▶] and set the desired speed using [▲] and [▼].

- **XP:** High picture quality recording mode: An unused 4.7GB disc is capable of approximately one hour of recording. The pictures produced have a higher quality than those recorded in the SP mode.
- **SP:** Standard play recording mode: An unused 4.7GB disc is capable of approximately two hours of recording. The pictures produced have a higher quality than those recorded in the LP mode.
- **LP:** Long play recording mode: An unused 4.7GB disc is capable of approximately four hours of recording.
- **FR:** Only functions with programmed timer recording.
 - When "FR" is selected for a programmed timer recording, the unit automatically selects either "XP" or "LP" based on the length of the program to be recorded and according to the amount of time remaining on the disc.
 - Depending on the time remaining on the disc, it may not always be possible to record to the end of the programmed timer recording.

7 Press [TIMER REC] to activate the timer recording mode. (The unit will turn off and go into standby mode)

- The lamp of the [TIMER REC] button on the unit lights.
- At the programmed date and time, the recording will start automatically.
- If an attempt is made to exit by pressing [SELECT] in error, the "To Activate Timer Recording, Press TIMER REC Button" message appears on the screen.

To correct or change the programmed contents

In some cases, the programming contents may not be entered correctly when programming a timer recording with the VCR Plus+ function. Correct the mistake or add the missing information as follows:

After displaying the programmed contents in Step 6, perform the following steps:

To change the program channel:

Select "CHANNEL" using [◀] and [▶] and set the desired program using [▲] and [▼].

To change the date of timer recording:

Select "DATE" using [◀] and [▶] and set the desired date using [▲] and [▼].

To change the recording start time:

Select "ON" using [◀] and [▶] and set the desired recording start time using [▲] and [▼].

To change the recording end time:

Select "OFF" using [◀] and [▶] and set the desired recording end time using [▲] and [▼].

To set the recording date/day(s)

You can select the recording date (day of the month/day of the week) by pressing the [▲] and [▼]. If you repeatedly press the [▲], the indication changes in the order shown below. If you press the [▼], the indication changes in the opposite order.

- Programming a timer recording (setting the date) is possible up to one month ahead of the TV program's broadcasting date and time. Daily and weekly timer recordings will continue until you cancel them.



To Suspend the Timer Recording Mode

When you want to use the DVD Video Recorder for playback, normal recording or some other operation before the programmed timer recording will be performed, you can temporarily suspend the timer recording standby mode by pressing [TIMER REC]. The video recorder will power on.

However, after you have finished using the DVD Video Recorder, be sure to reactivate the timer recording standby mode by pressing [TIMER REC] again, otherwise the programmed timer recording will not be performed.

Notes:

- After programming a timer recording, confirm that the Timer Rec Lamp is illuminated on the DVD Video Recorder front panel.
- If the Timer Rec Lamp is flashing, check the timer programming contents and program it again correctly.

Timer Recordings (continued)

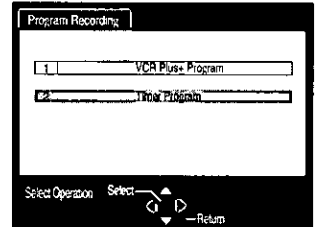
Programming with the on-screen display

This method offers easy step-by-step programming with the remote control while you view the prompts on the TV screen.

Preparation

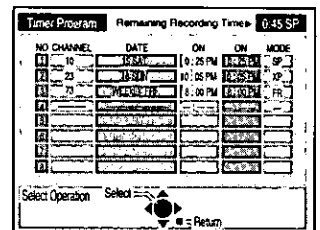
- Press [DVD].
- Check that the time showing on the unit is the correct time.
- Insert a disc that can be recorded on. (Insert a disc which has more time remaining than the length of the timer recording.)

1 Press [PROG] to display the "Program Recording" screen.



2 Select "2 Timer Program" using [▲] and [▼] and press [SELECT].

- Confirm that the remaining recording time is enough to cover the length of your recording.



3 Select "CHANNEL" using [▶] and set the desired program using [▲] and [▼].

4 Select "DATE" using [▶] and set the desired date using [▲] and [▼].

■ To set the Recording Date/Day(s)

You can select the recording date (day of the month/day of the week) by pressing [▲] and [▼]. If you repeatedly press [▲], the indication changes in the order shown below. If you press [▼], the indication changes in the opposite order.

- Programming a timer recording (setting the date) is possible up to one month ahead of the TV program's broadcasting date and time.

Daily and weekly timer recordings will continue until you cancel them.

→ <To Program within 1 Month>

Example: 1 2 31

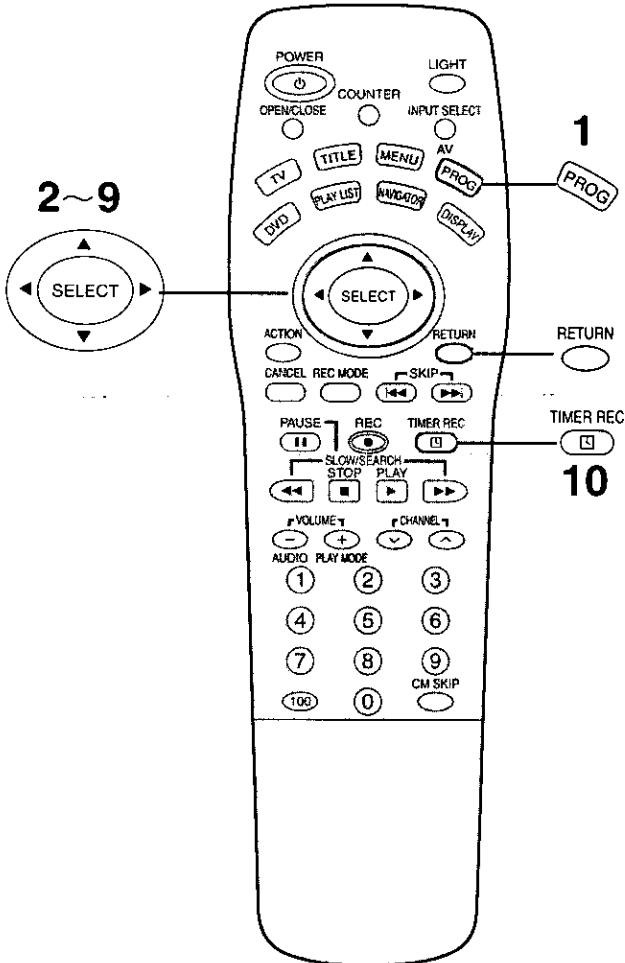
↓
<To Program a Daily Timer Recording>

Example: Daily recording from Sunday to Saturday (DAILY SUN-SAT).
Daily recording from Monday to Saturday (DAILY MON-SAT).
Daily recording from Monday to Friday (DAILY MON-FRI).

↓
<To Program a Weekly Timer Recording>

Example: Weekly recording every Sunday (WEEKLY SUN)
Weekly recording every Monday... (WEEKLY MON)
Weekly recording every Saturday (WEEKLY SAT)

(SUN = Sunday, MON = Monday, TUE = Tuesday, WED = Wednesday, THU = Thursday, FRI = Friday, SAT = Saturday)



- 5 Select "ON" (hour) using [▶] and set the hour of the desired recording start time using [▲] and [▼].
- 6 Select "ON" (minutes) using [▶] and set the minutes of the desired recording start time using [▲] and [▼].
- 7 Select "OFF" (hour) using [▶] and set the hour of the desired recording end time using [▲] and [▼].
- 8 Select "OFF" (minutes) using [▶] and set the minutes of the desired recording end time using [▲] and [▼].
- 9 Select "MODE" using [▶] and set the desired speed using [▲] and [▼].

- **XP:** High picture quality recording mode: An unused 4.7GB disc is capable of approximately one hour of recording. The pictures produced have a higher quality than those recorded in the SP mode.
- **SP:** Standard play recording mode: An unused 4.7GB disc is capable of approximately two hours of recording. The pictures produced have a higher quality than those recorded in the LP mode.
- **LP:** Long play recording mode: An unused 4.7GB disc is capable of approximately four hours of recording.
- **FR:** Only functions with programmed timer recording.
 - When "FR" is selected for a programmed timer recording, the unit automatically selects either "XP" or "LP" based on the length of the program to be recorded and according to the amount of time remaining on the disc.
 - Depending on the time remaining on the disc, it may not always be possible to record to the end of the programmed timer recording.

10 Press [TIMER REC] to activate the timer recording mode. (The unit will turn off and go into standby mode)

- All other mode of operation are not possible after [TIMER REC] is pressed and the unit goes into standby mode.
- At the programmed date and time, the recording will start automatically.
- If an attempt is made to exit by pressing [SELECT] in error, the "To Activate Timer Recording, Press TIMER REC Button" message appears on the screen.

To Suspend the Timer Recording Mode

When you want to use the DVD Video Recorder for playback, normal recording or some other operation before the programmed timer recording will be performed, you can temporarily suspend the timer recording standby mode by pressing [TIMER REC]. The video recorder will power on.

However, after you have finished using the DVD Video Recorder, be sure to reactivate the timer recording standby mode by pressing [TIMER REC] again, otherwise the programmed timer recording will not be performed.

Note:

- After programming a timer recording, confirm that the TIMER REC lamp illuminated on the DVD Video Recorder front panel.
- If the TIMER REC lamp is flashing, check the timer programming contents and program it again correctly.

To check the contents of timer recording programs

- Suspend timer recording before proceeding (See previous section).

- 1 Press [PROG] to display the "Program Recording" screen.
- 2 Select "2 Timer Program" using [▲] and [▼] and press [SELECT].

- To clear the display
Press [PROG].

Timer Recordings (continued)

To change a timer recording program

• Suspend timer recording before proceeding.
It is not possible to change a program while the timer recording is being performed.

- 1 Press [PROG] to display the "Program Recording" screen.
- 2 Select "2 Timer Program" using [▲] and [▼] and press [SELECT].
- 3 Select the "Program NO." that you want to change using [▲] and [▼].
- 4 Select "CHANNEL" using [▶] and set the desired program using [▲] and [▼].
- 5 Select "DATE" using [▶] and set the desired date using [▲] and [▼].
- 6 Select "ON" (hour) using [▶] and set the hour of the desired recording start time using [▲] and [▼].
- 7 Select "ON" (minutes) using [▶] and set the minutes of the desired recording start time using [▲] and [▼].
- 8 Select "OFF" (hour) using [▶] and set the hour of the desired recording end time using [▲] and [▼].
- 9 Select "OFF" (minutes) using [▶] and set the minutes of the desired recording end time using [▲] and [▼].
- 10 Select "MODE" using [▶] and set the desired speed using [▲] and [▼].

■ To clear the display:

Press [PROG].

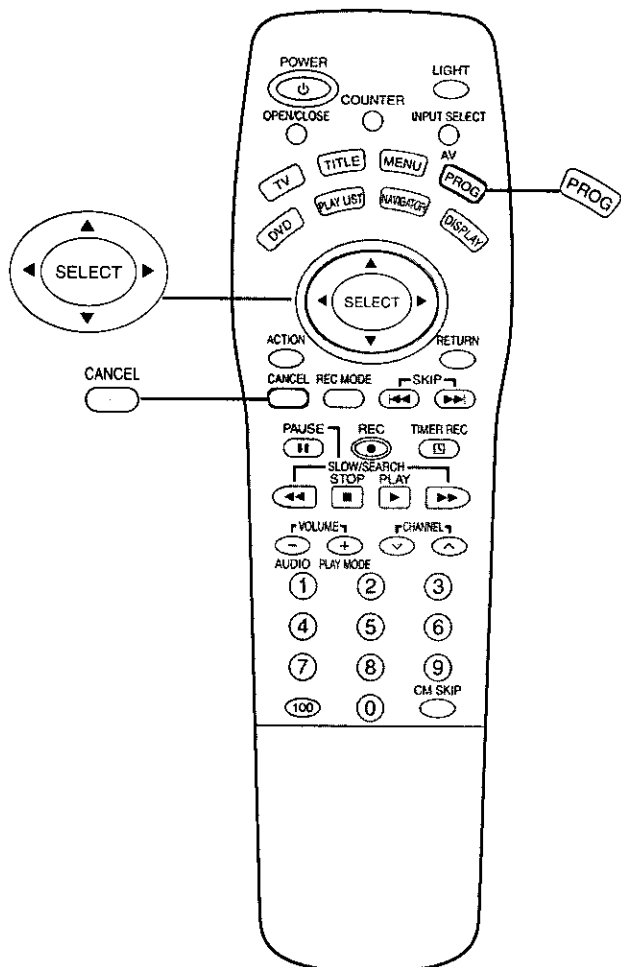
To cancel the programming of a timer recording

It is not possible to cancel a program while the timer recording is being performed.

- 1 Press [PROG] to display the "Program Recording" screen.
- 2 Select "2 Timer Program" using [▲] and [▼] and press [SELECT].
- 3 Select the "Program NO." that you want to cancel using [▲] and [▼].
- 4 Press [CANCEL].

■ To clear the display

Press [PROG].



Viewing the last recorded/timer recorded program immediately

The last program recorded/timer recorded can be viewed immediately.

Preparation

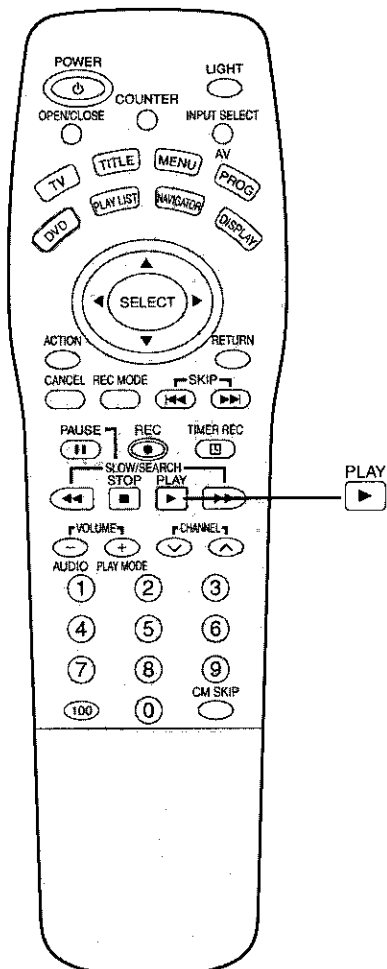
- Press [DVD].

Immediately after the recording or timer recording has finished, press [PLAY].

- This function can be performed only when "▶" on the unit's display is flashing.

Note:

- This operation is not possible when [STOP] or [OPEN/CLOSE] is pressed while "▶" is flashing.



Using the direct navigator

RAM

When a program is recorded using this unit, its details are automatically entered on the direct navigator program list. This list can be used to locate the programs that are to be viewed. The direct navigator program list is recorded on the disc that contains the program recordings.

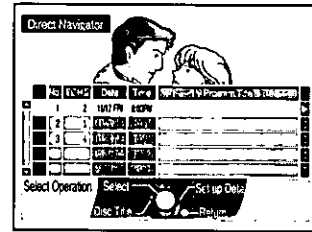
Preparation

- Press [DVD].
- Insert a pre-recorded disc.

1 During playback or stop:

[Remote control]: Press [NAVIGATOR].

[Unit]: Press [DIRECT NAVIGATOR].

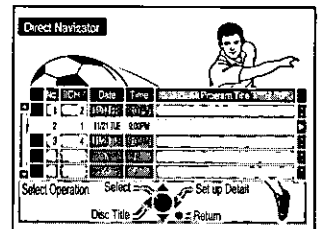


- The program numbers, recording dates, channels, start times and titles (only if titles have been entered; see p. 71) of the recorded programs are displayed.
- When [NAVIGATOR] has been pressed during stop, playback starts and this screen appears.

2 Select the program to be viewed using [▲] and [▼].

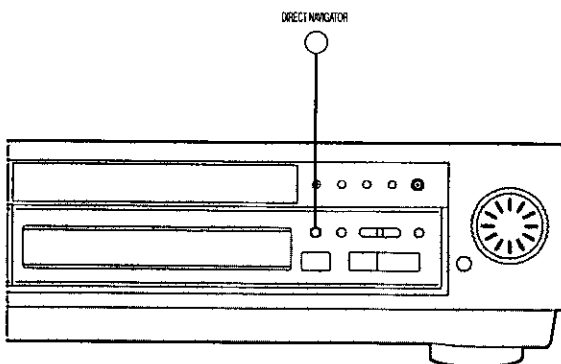
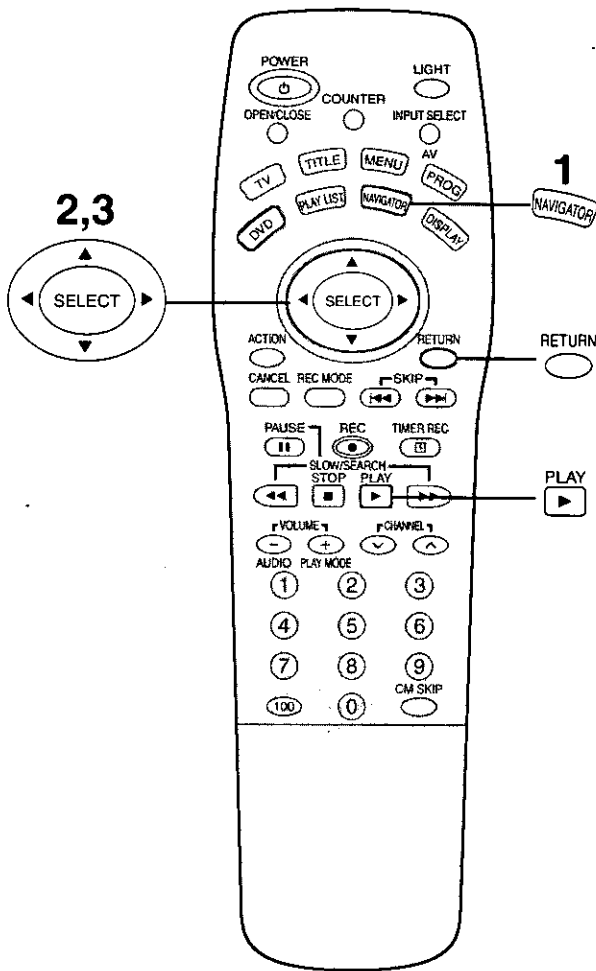
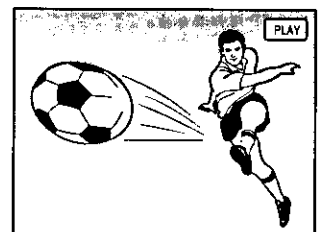
Example where program "2" has been selected

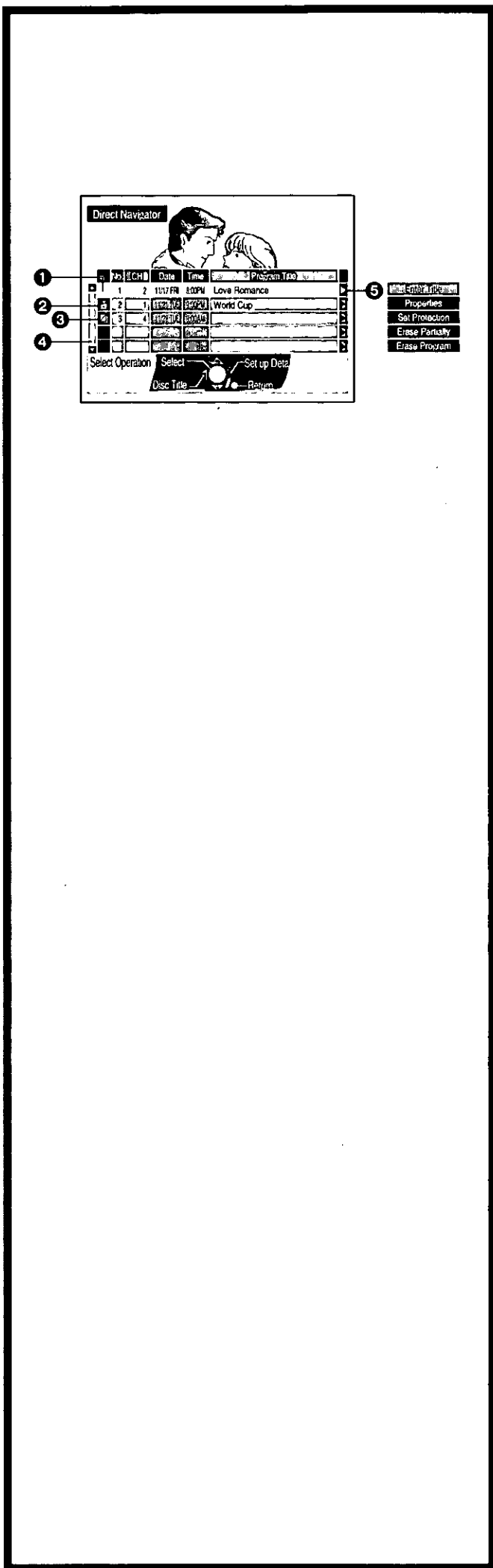
- If there are six or more programs, keep pressing [▼] to scroll down to the bottom half of the list.



3 Press [SELECT].

- The selected program can be viewed.
- It can also be viewed by pressing [NAVIGATOR], [RETURN] or [PLAY].





Notes:

- The direct navigator program list can contain up to 99 programs.
- The direct navigator program list is recorded on each disc.
- If a new recording is to be performed when 99 recordings have already been made, the "Maximum amount of programs exceeded" message appears on the TV screen, and the new recording will not be performed. Erase the programs that are no longer needed, and start recording when the number of recorded programs is 98 or less.

■ **Direct navigator program items**

① **Program number, recording date, channel, recording start time, program title (only after the title has been entered)**
 In the example shown, program No.1 has been selected.

② **Write-protect**
 This appears when the program is write-protected. (p. 73)
 In the example shown, program No.2 is write-protected. Write-protected programs cannot be partially or entirely erased.

③ **Copy prohibited**
 This appears when attempting to record a program (such as a CATV program) whose copying (dubbing) is prohibited.

④ **Scroll bar**
 A general indication of the current position appears when a list containing more than 6 programs is scrolled down using [▼].

⑤ **Sub menu**
 This appears when [▶] is pressed. A number of operations can now be performed: program titles can be entered (or edited), program contents can be checked, write protection can be engaged or released, and programs can be partially or entirely erased.



Direct navigator program functions

RAM

The following operations can be performed using the direct navigator:

1. Enter Title
2. Properties (Displaying information on programs)
3. Set Protection
4. Erase Partially
5. Erase Program

Preparation

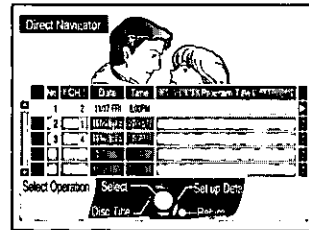
- Press [DVD].
- Insert a pre-recorded disc.

Initial steps

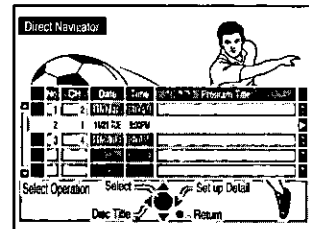
1 [Remote control]: Press [NAVIGATOR].

[Unit]: Press [DIRECT NAVIGATOR].

- The program numbers, recording dates, channels and start times of the recorded programs are displayed.
- When the button has been pressed during stop, playback starts and the direct navigator screen appears.

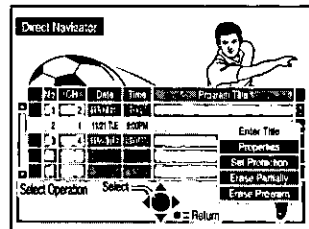


2 Select the program to be edited using [▲] and [▼].

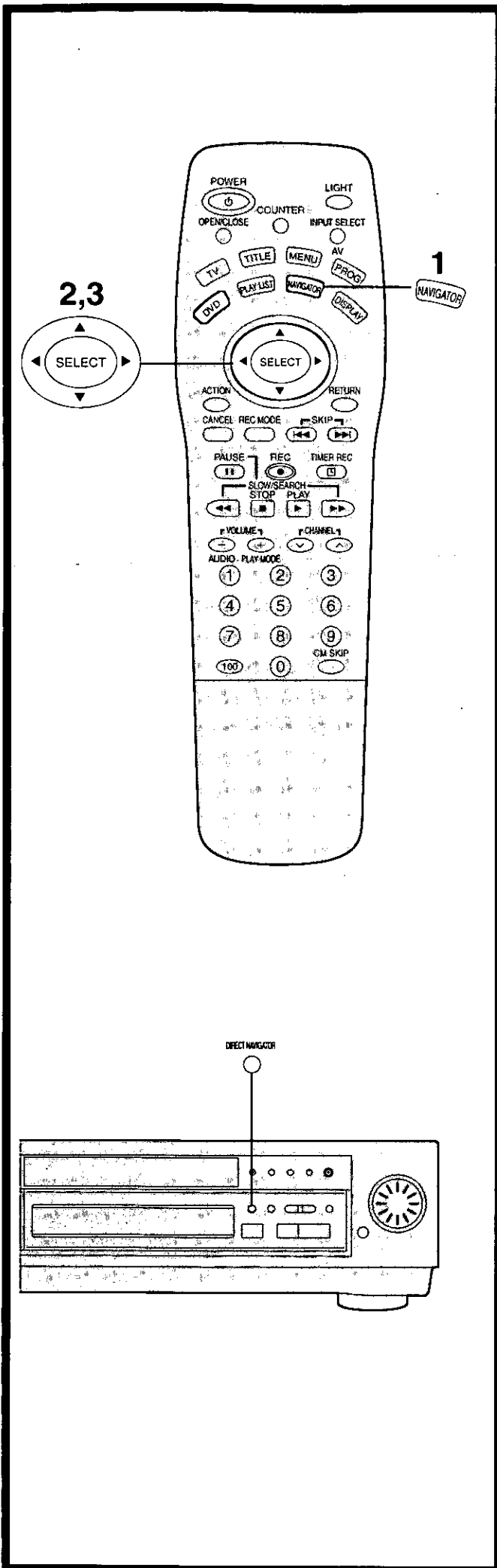


3 Press [▶].

- Playback is paused (still picture).



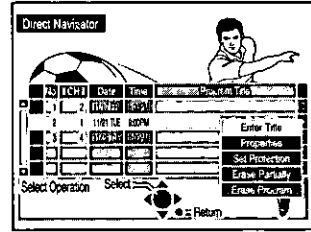
- Direct navigator program functions are displayed.



1 Enter Title (assigning titles to recorded programs)

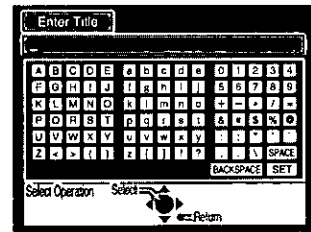
•Perform steps 1 to 3 described on the previous page.

4 Select "Enter Title" using [▲] and [▼], and press [SELECT].

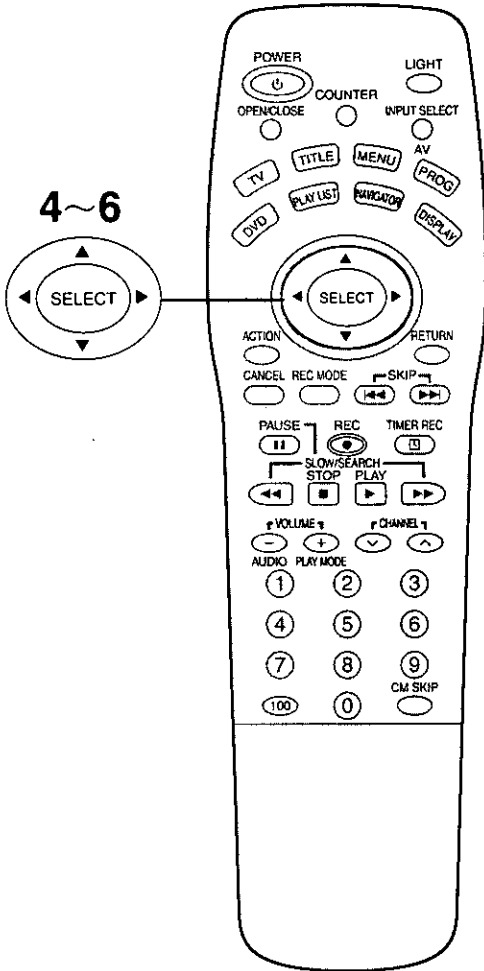
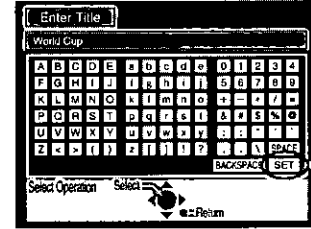


•The title input screen (displayed below) now appears.

5 Enter the name of the title using [◀], [▲], [▶] and [▼] to select the characters and press [SELECT].



6 When all characters have been entered: Select the "SET" icon using [◀], [▲], [▶] and [▼], and press [SELECT].



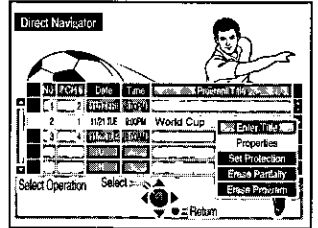
Direct navigator program functions (continued)

RAM

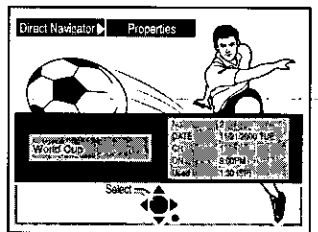
Program Properties

• Proceed after performing steps 1 to 3 on p. 70.

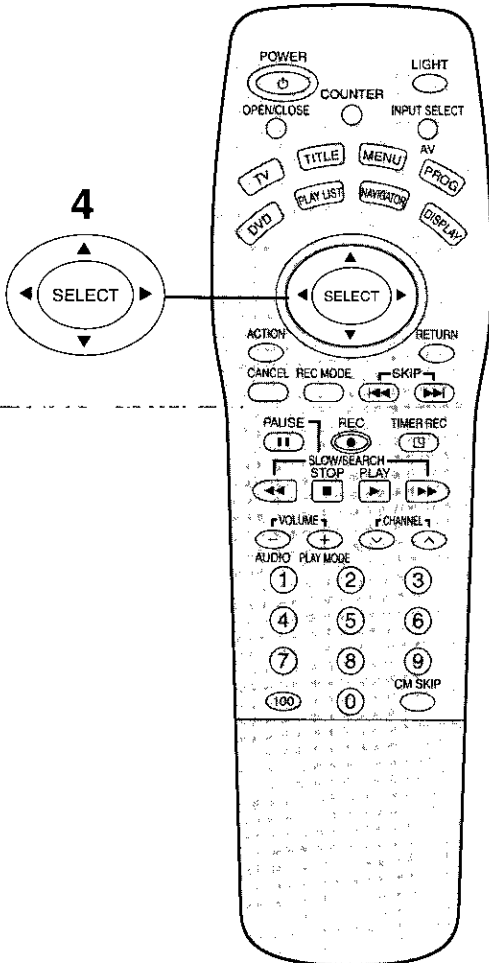
4 Select "Properties" using [▲] and [▼], and press [SELECT].



- The title, if one has been entered, the program number, recording date, channel, start time and recording time will be displayed.



Press [SELECT] to clear the display.

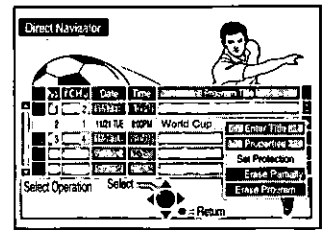


Set write Protection

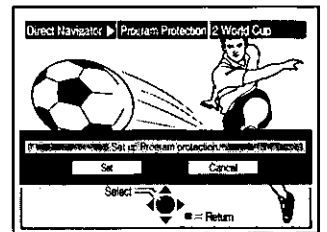
Programs can be write-protected so that they will not be erased by mistake. The write protection function can also be released.

• Proceed after performing steps 1 to 3 on p. 70.

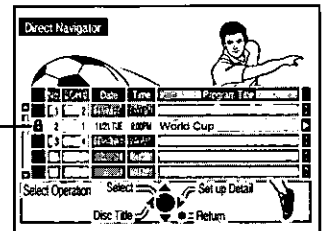
4 Select "Set Protection" using [▲] and [▼], and press [SELECT].



5 Select "Set" using [◀], and press [SELECT].



• The padlock icon is shown.



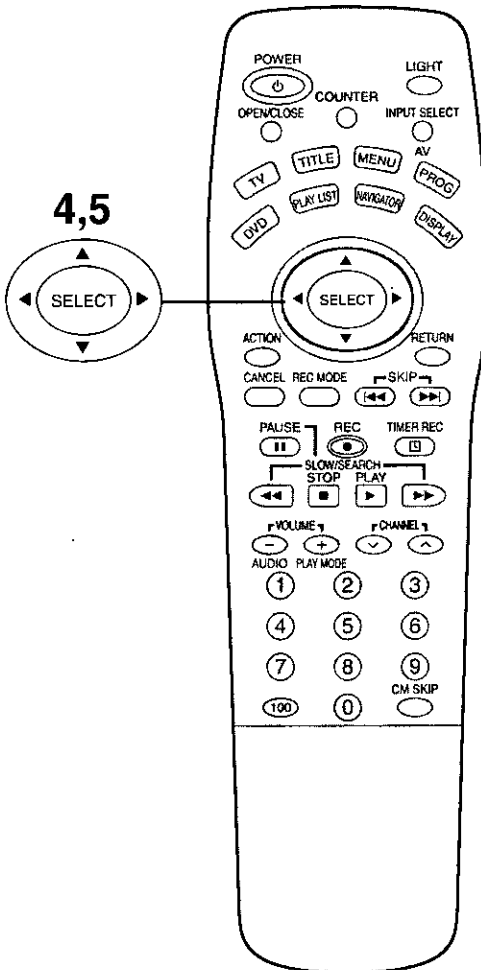
Padlock icon

■ Canceling the program protection

1. Repeat above procedure.
2. Select "Cancel Protection" in step 5.
 - The padlock icon is now cleared.

Note:

• Protected programs will be erased if the disc is formatted.

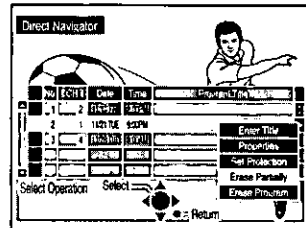


Direct navigator program functions (continued)

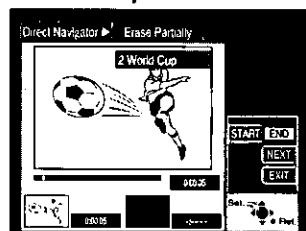
Erasing programs partially

• Proceed after performing steps 1 to 3 on p. 70.

- 4 Select "Erase Partially" using [▲] and [▼], and press [SELECT].



- 5 Perform forward (or reverse) search, slow playback, etc. to locate the START point of the part to be erased.



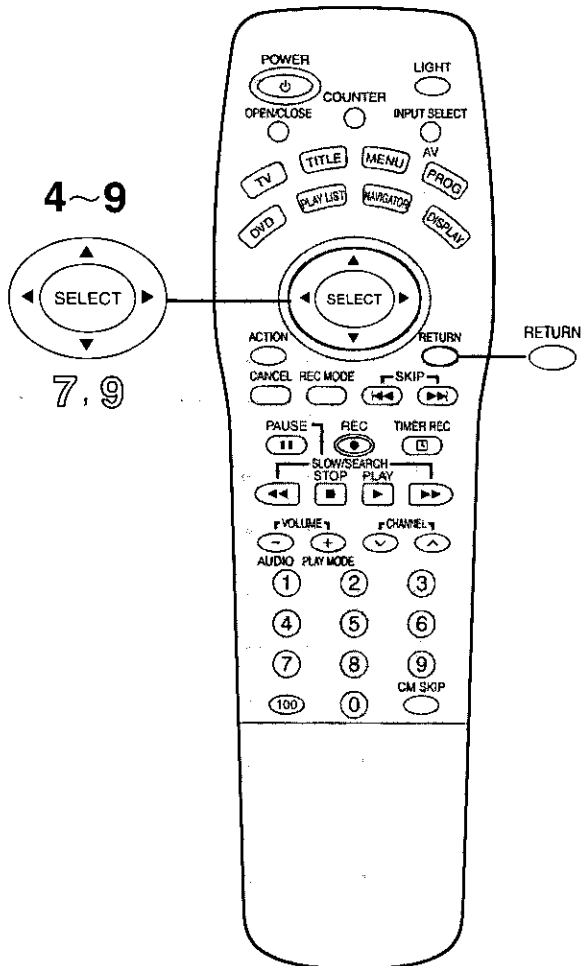
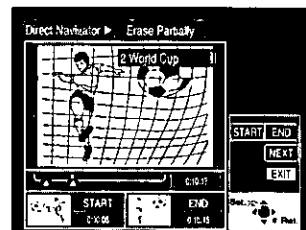
Once the START point has been located, press [SELECT].

- 6 Perform forward (or reverse) search, slow playback, etc. to locate the END point of the part to be erased.

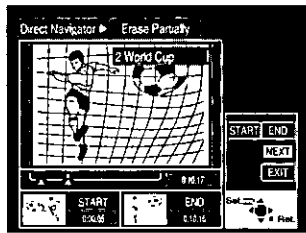


Once the END point has been located, press [SELECT].

- 7 When there is no other part to be erased in the same program: Select "EXIT" using [▼], and press [SELECT].

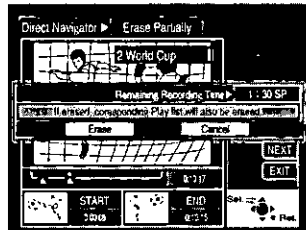


- 7 If there are other parts to be erased in the same program: select "NEXT" and press [SELECT].



- 8 Select "Erase" using [◀], and press [SELECT].

- The part on the play list created from the deleted part is also deleted.



- 9 Only when "NEXT" was selected in step 7, repeat steps 5 through 8.

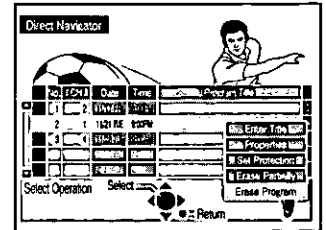


Program erase

A complete program can be erased.

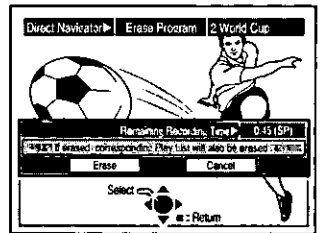
- Proceed after performing steps 1 to 3 on p. 70.

- 4 Select "Erase Program" using [▲] and [▼], and press [SELECT].



- 5 Select "Erase" using [◀], and press [SELECT].

- The part on the play list created from this program is also erased.



Notes:

- Once programs are erased, they can not be restored.
- If the erased program is a short one, the remaining disc space may not be increased.

■ To stop the erasing process

Press [RETURN].

Notes:

- If more than one START (or END) point has been set, the point which was set last will take effect.
- If the START point comes after the END point, the two points are automatically changed around.
- The START and END points may not be set if they are less than 3 seconds apart.
- Still pictures cannot be partially erased.
- If the erased part is very short, the remaining disc space may not be increased.
- When the end of the program is reached, the pause mode is automatically established.
- Parts of programs which have been write-protected as described on p. 73 cannot be erased.
- To erase the very beginning of a program, press [PAUSE] then [◀◀] and select "START."

Direct navigator disc functions

RAM

The following operations can be performed using the direct navigator:

1. Entering a title to the disc
2. Displaying information on the disc properties
3. Setting write protection on and off for the entire disc
4. Erasing all the recordings

Preparation

- Press [DVD].
- Insert a pre-recorded disc.

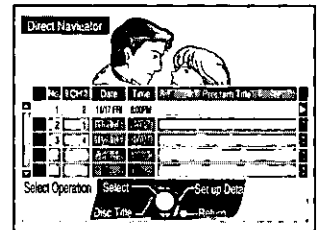
Initial steps

1 During playback or stop:

[Remote control]: Press [NAVIGATOR].

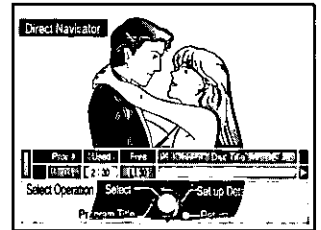
[Unit]: Press [DIRECT NAVIGATOR].

- When the button has been pressed during stop, playback starts and the direct navigator screen appears.



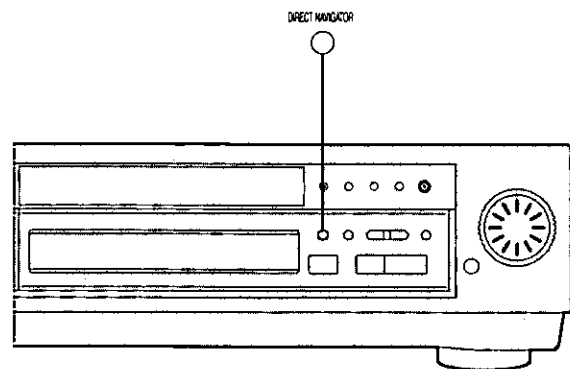
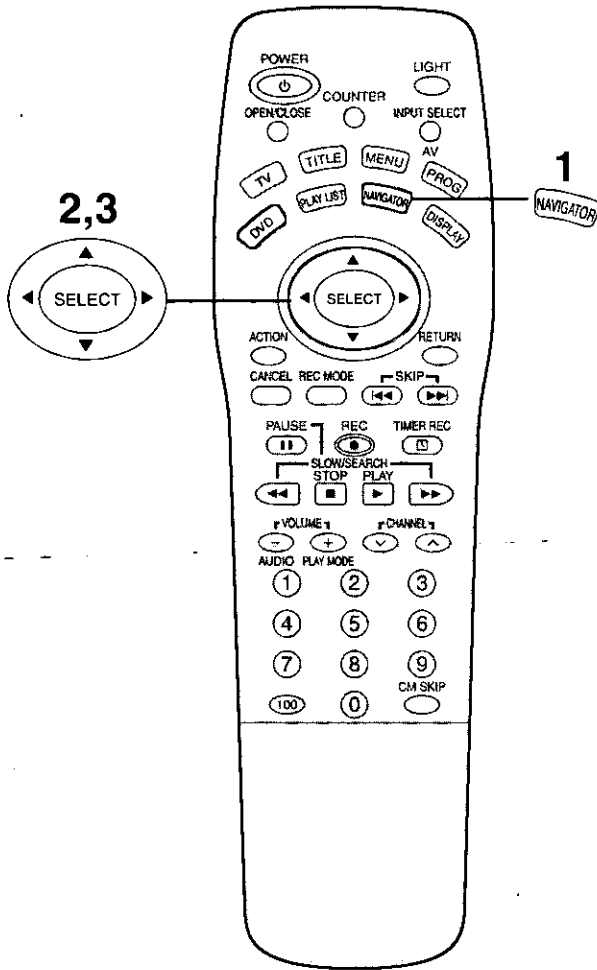
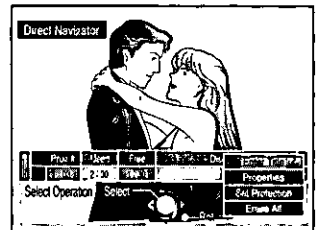
2 Press [◀].

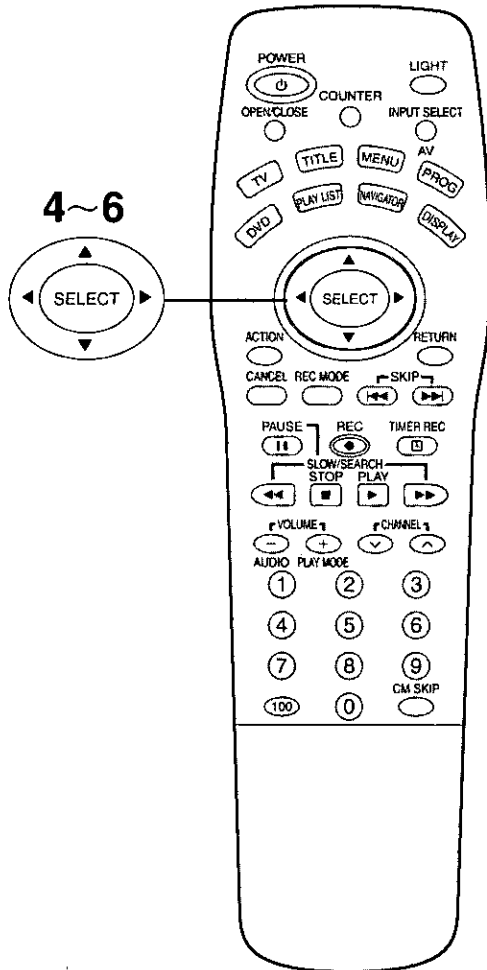
- Disc information: The number of recorded programs, total recording time, remaining disc space, disc title (only if the title has been entered) are displayed.



3 Press [▶].

- The direct navigator disc functions are displayed.





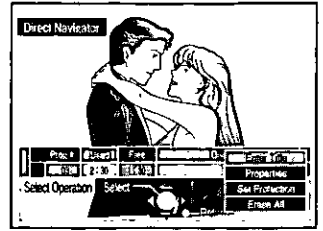
1 Disc title

The name of your choice can be entered to a recorded disc.

- Proceed after performing steps 1 to 3 described on the previous page.

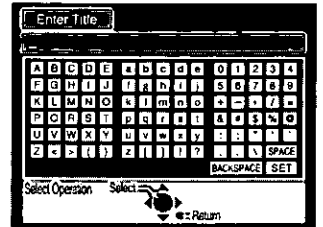
4 Select "Enter Title" using [▲] and [▼], and press [SELECT].

- The disc title enter screen displayed below now appears.



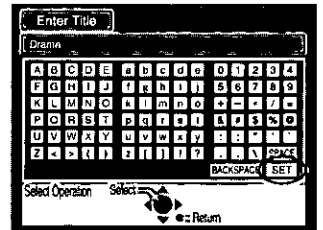
5 Enter the title of the disc using [◀], [▲], [▶] and [▼] to select characters and press [SELECT].

- Character input procedure (p. 87)



6 When all characters have been entered:

Select the "SET" icon using [◀], [▲], [▶] and [▼], and press [SELECT].



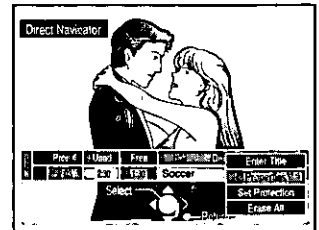
Direct navigator disc functions

(continued)

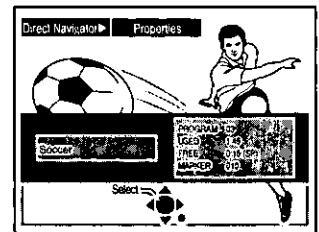
2 Displaying information on disc contents

• Proceed after performing steps 1 to 3 on p. 76.

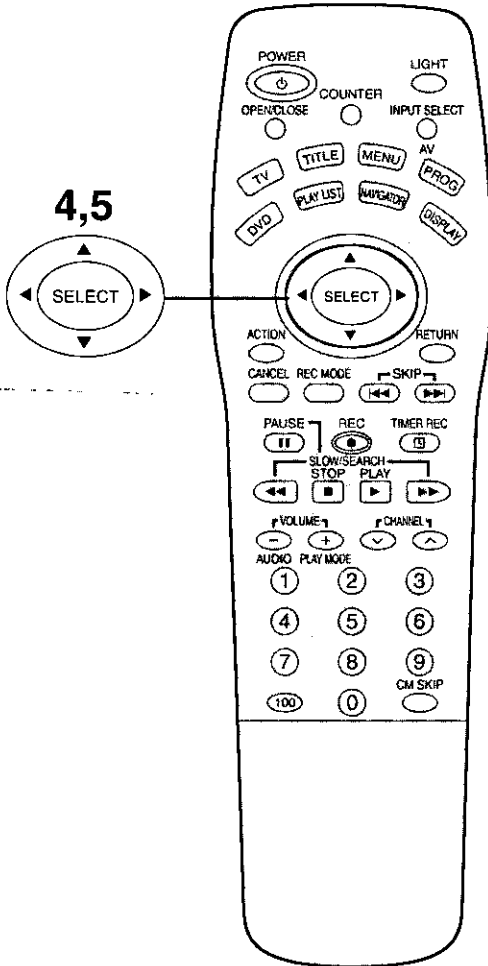
4 Select "Properties" using [▲] and [▼] and press [SELECT].



- The name of the disc, if one has been entered, the number of programs recorded, total recording time, remaining time and number of markers will be displayed.



Press [SELECT] to clear the display.

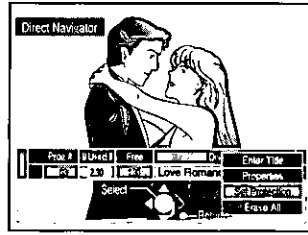


3 Setting disc write protection

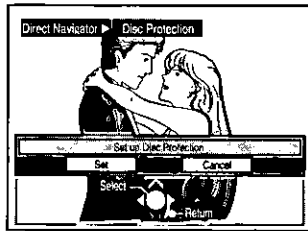
Disc contents can be write-protected so that they will not be erased by mistake. Write-protection can also be released.

- Proceed after performing steps 1 to 3 on p. 76.

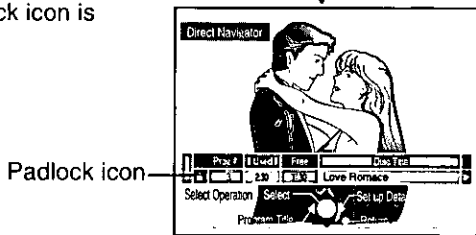
- 4 Select "Set Protection" using [▲] and [▼] and press [SELECT].



- 5 Select "Set" using [◀] and press [SELECT].



- The Padlock icon is shown.



■ Releasing the protection which was set for a disc

Repeat above procedure and select "Cancel Protection" in step 5.

- The Padlock icon is now cleared.

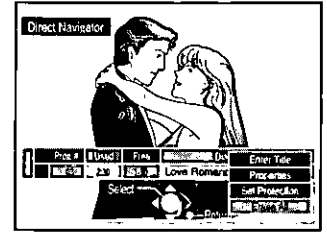
Notes:

- Formatting the disc will erase all programs, even if they have been write-protected.
- Record function, marker settings, and Play List function cannot be performed when disc is write-protected.

4 Erasing all of the recordings on a disc

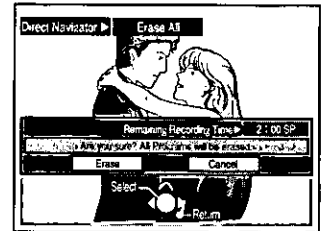
- Proceed after performing steps 1 to 3 on p. 76.

- 4 Select "Erase All" using [▲] and [▼] and press [SELECT].



- 5 Select "Erase" using [◀] and press [SELECT].

- All the play lists created are also erased.



Notes:

- Once the disc is erased the contents can not be restored.
- The following message appears if there is a program on a disc which is write-protected: "Cannot erase! Contents of this disc are protected." To proceed with erasure, release the write protection set for the program or programs. (p. 73)

Creating and playing play lists

Creating play lists

RAM

You can create play lists that are collections of your favorite scenes from pre-recorded programs.

The location information of the beginning and the end of a scene is stored on the disc and played in the designated sequence. This means that play lists use up hardly any disc space because only the location (START and END points) of the play list are stored on the disc. The play list content is accessed from the program that it resides in.

Preparation

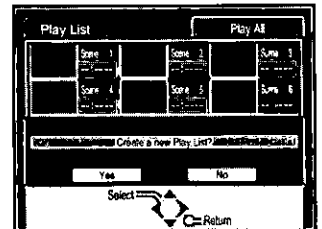
- Press [DVD].
- Insert a pre-recorded disc.

1 During stop:
Press [PLAY LIST].

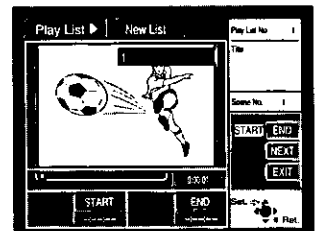
2 Press [◀].
• This step is not necessary if play lists have not been created.

3 The "Create a new Play List?" message appears. Select "Yes" using [◀], and press [SELECT].

- The play list creation screen now appears, and play starts from the first of the recorded programs

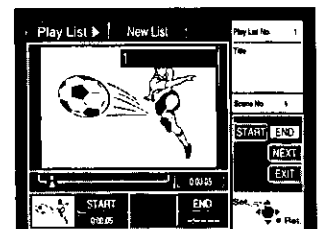


4 Perform forward (or reverse) search, slow playback, etc. to locate the START point of the scene.



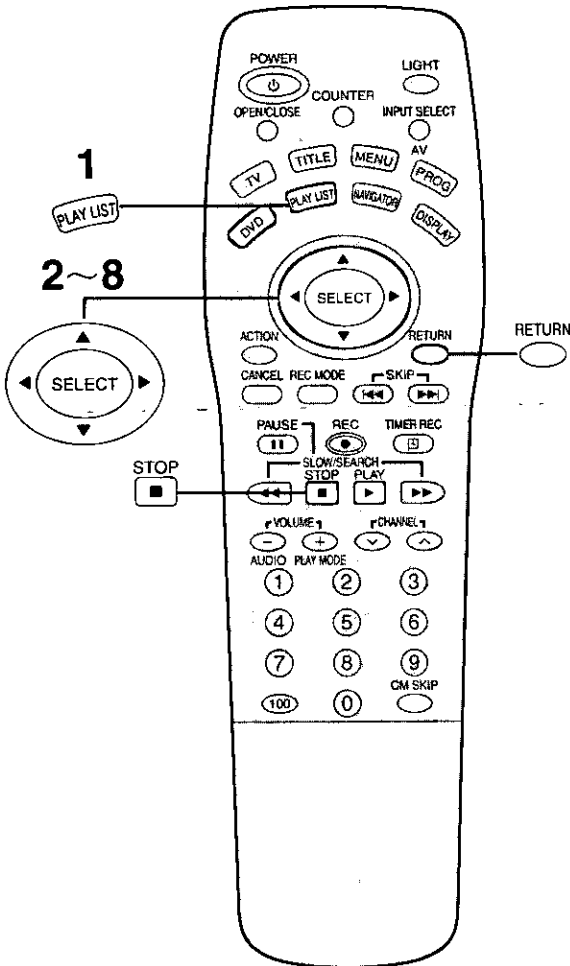
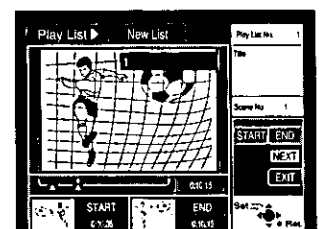
5 Once the START point has been located, press [SELECT].

- A thumbnail image and time of the START point are displayed.



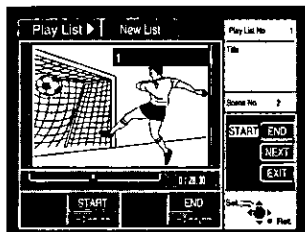
6 Perform forward (or reverse) search, slow playback, etc. to locate the END point of the scene, and press [SELECT].

- A thumbnail image and time of the END point are displayed.



7 If there are other scenes to be entered, select "NEXT" and press [SELECT].

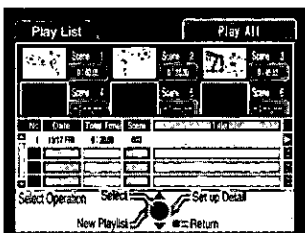
- Operation returns to the START point input screen. Now repeat steps 4 through 7.



8 Once all the scenes have been entered, select "EXIT" using [▼], and press [SELECT].



- After the scenes have been registered, the play list guide screen appears.



- To stop the play list creation midway Press [RETURN].

Notes:

- Up to 99 play lists and up to 999 scenes can be created on one disc. In some cases, the actual numbers will be less than the figures given here.
- If another START (or END) point has been set after a START (or END) point has already been set, the point which was set last will take effect.
- If the START point comes after the END point, the two points are automatically changed around.
- If only the END point has been set without setting the START point, the start of the program concerned will serve as the START point.
- The START and END points will not be set if they are set at the same position.
- Still pictures on other equipment can not be set as scenes.
- When the end of the last program recorded on the disc is reached and the END point has not been designated, pause mode is established.

Playing back play lists

RAM

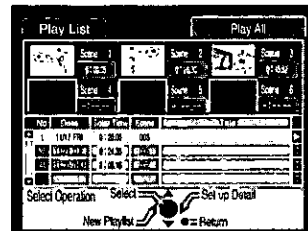
Preparation

- Press [DVD].
- Insert a disc on which play lists have been created.

1 During stop:

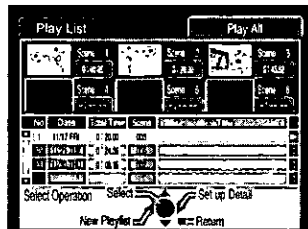
Press [PLAY LIST].

- The play list guide screen now appears.



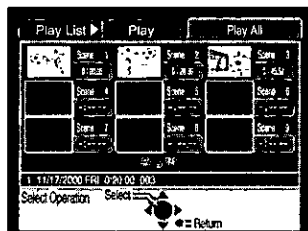
2 Select the play list to be played back using [▲] and [▼].

- If there are five or more items, keep pressing [▼] to scroll down to the bottom half of the list.



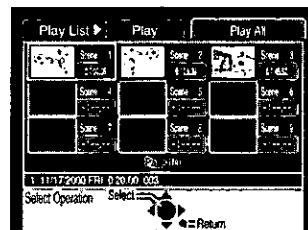
3 Press [SELECT].

- Play list playback screen appears.



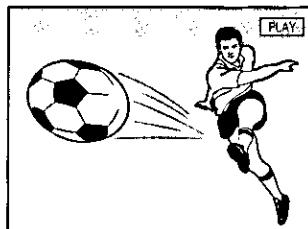
4 Select the scene to be played back using [◀], [▲], [▶] and [▼].

- Play all is initially highlighted.
- The selected scene is framed.



5 Press [SELECT].

- The selected scene is played back.



■ To play back all the scenes on the play list

- Press [PLAY] after step 2. Alternatively, select "Play All" and press [SELECT] after step 3.

■ To stop playing the scenes midway

- Press [STOP].
- The playback scene selection screen resumes.

■ After scene playback is completed

- The playback scene selection screen resumes.

Note:

As with regular playback, forward (or reverse) skipping, still picture and slow playback operations can also be performed during scene playback.

Editing play lists

RAM

The following operations can be performed on play lists that have been created:

1. Adding scenes
2. Erasing scenes
3. Erasing all scenes
4. Copying play lists
5. Giving each play list a title
6. Displaying the play list information

Preparation

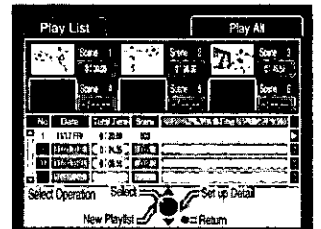
- Press [DVD].
- Insert a disc on which play lists have been created.

Initial operation for editing play lists

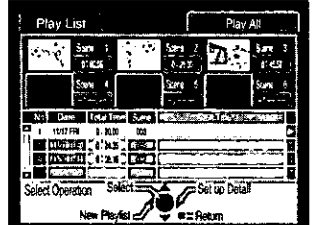
1 During stop:

Press [PLAY LIST].

- The play list guide screen now appears.

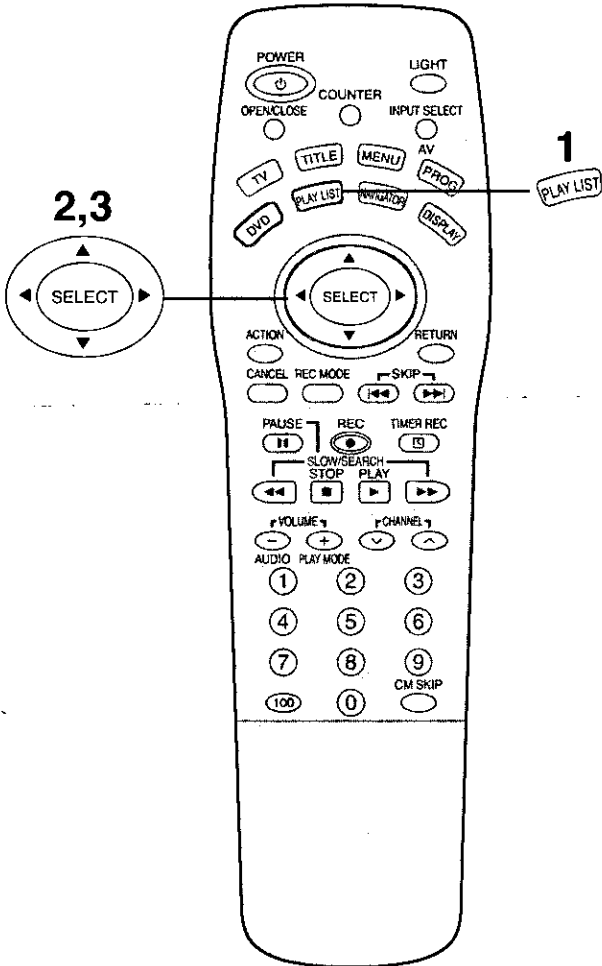
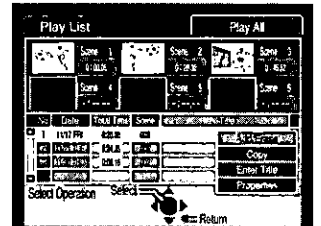


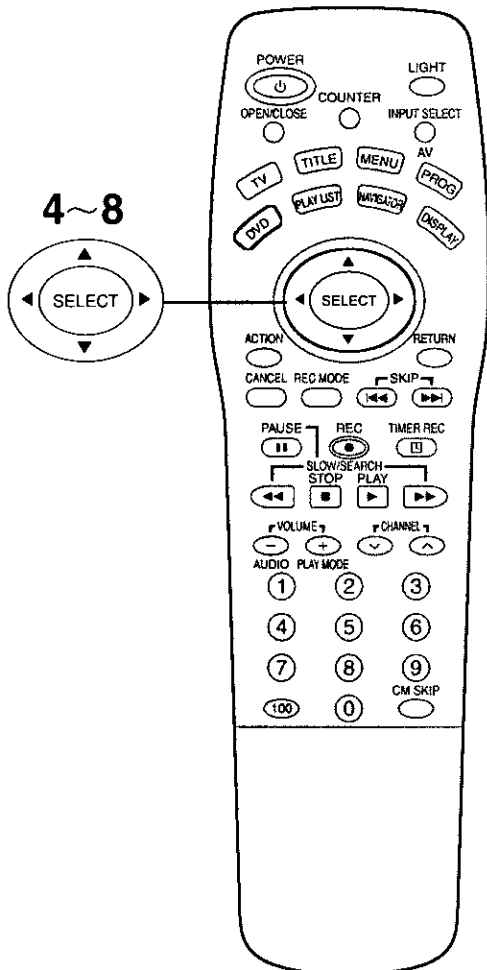
2 Select the play list to be edited using [▲] and [▼].



3 Press [▶].

- The scene editing mode menu appears.

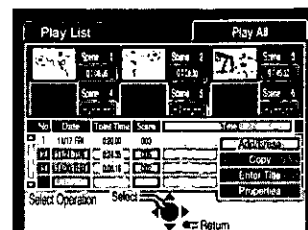




1 Adding scenes

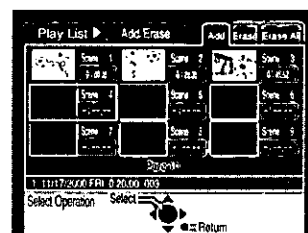
- Proceed after performing steps 1 to 3 described on the left.

4 Select "Add/Erase" using [▲] and [▼], and press [SELECT].

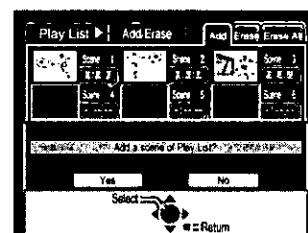


5 Confirm that "Add" has been selected, and then select the position where the scene is to be added using [◀], [▲], [▼] and [▶], and press [SELECT].

- In the example shown, a scene is added to the "Scene 4" position in the play list.

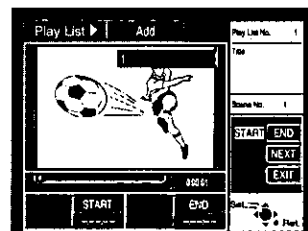


6 When the "Add a scene of Play List?" message is displayed, select "Yes" using [◀], and press [SELECT].



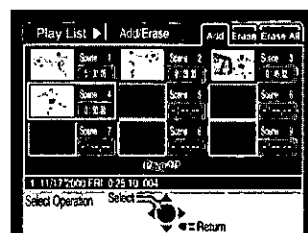
7 Designate the START and END points.

- The procedure for registering these points is the same as for creating a new play list (p. 80).



8 After the scene has been added, select "EXIT" using [▼], and press [SELECT].

- The scene is added to the existing list. (Example where a scene has been added to "Scene 4" in the play list.)



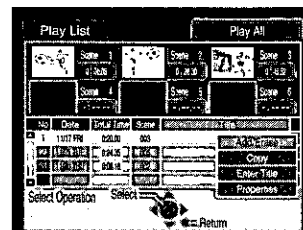
Editing play lists (continued)

2 Erasing scenes

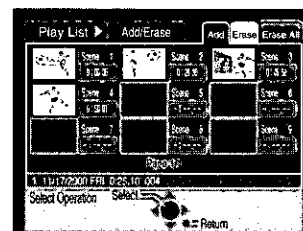
-Performing these steps will erase the selected scenes and they cannot be restored.

•Proceed after performing steps 1 to 3 on p. 82.

4 Select "Add/Erase" using [▲] and [▼], and press [SELECT].

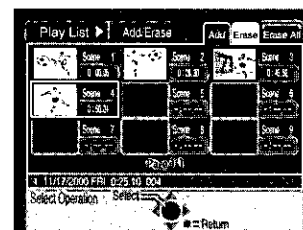


5 Select "Erase" by pressing [▲] and [▶], and then press [SELECT].

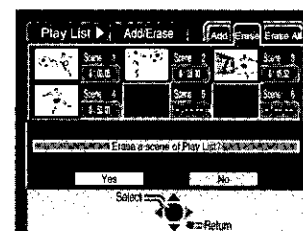


6 Select the scene to be erased using [◀], [▲], [▶] and [▼], and press [SELECT].

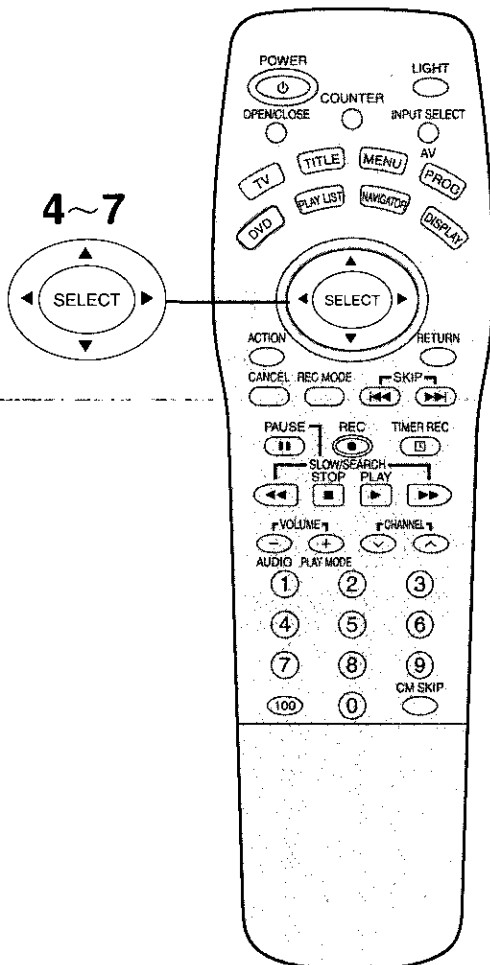
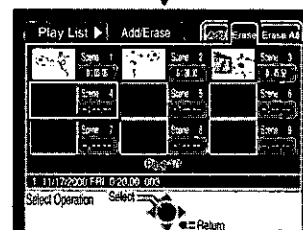
•In the example shown, scene 4 is erased.

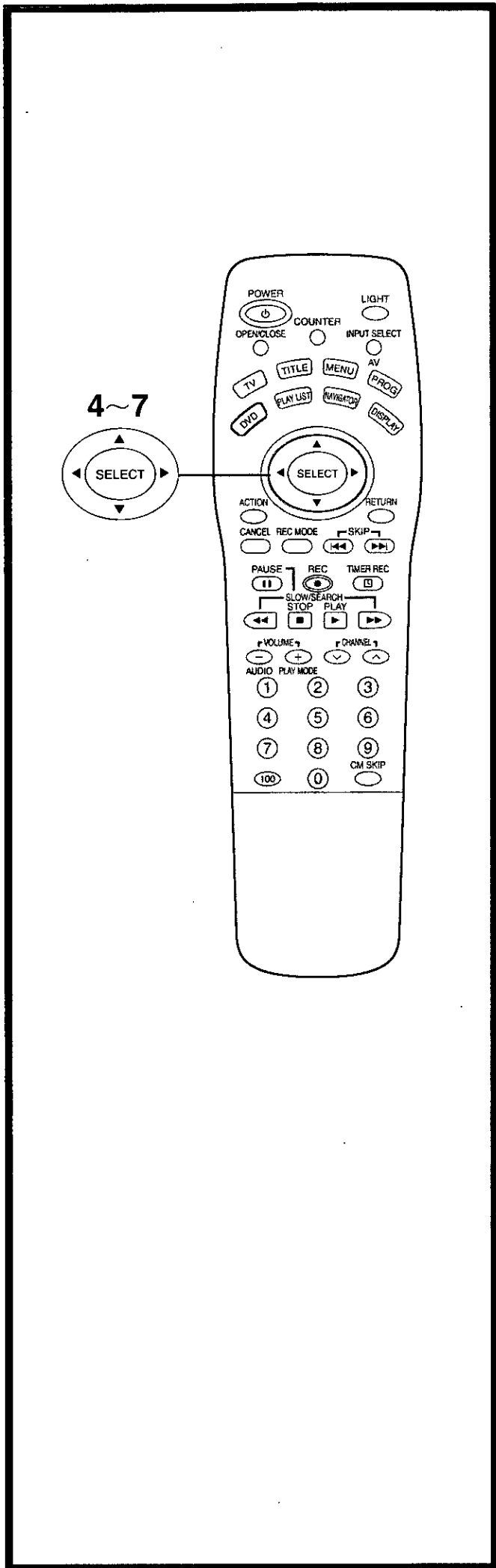


7 Select "Yes" using [◀], and press [SELECT].



•The scene is now erased from the play list.

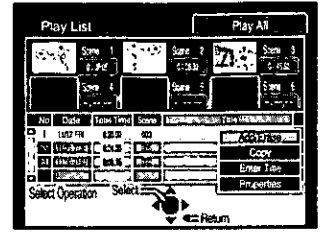




3 Erasing all scenes from a play list

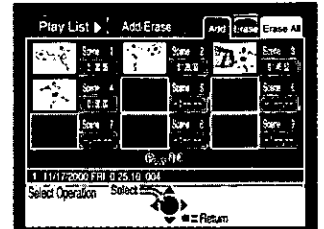
- Performing these steps will erase all the scenes and they cannot be restored.
- Proceed after performing steps 1 to 3 on p. 82.

4 Select "Add/Erase" using [▲] and [▼], and press [SELECT].



5 Select "Erase All" by pressing [▲] and [▶], and then press [SELECT].

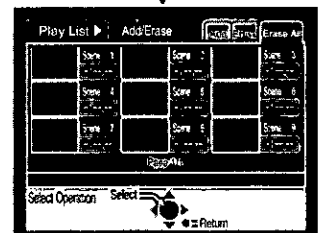
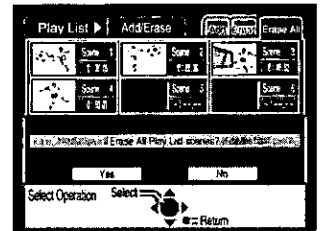
- All the scenes are now selected.



6 Press [SELECT].

7 Select "Yes" using [◀], and press [SELECT].

- All the scenes are now erased from the play list.



Note:

When all the scenes are to be erased, the play list itself will also be erased.

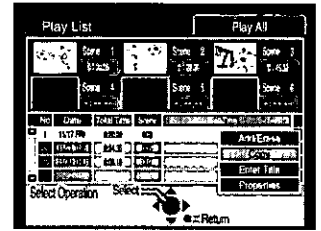
Editing play lists (continued)

4 Copying play lists

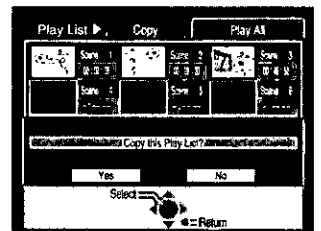
A copy of a play list already created can be made.

- Proceed after performing steps 1 to 3 on p. 82.

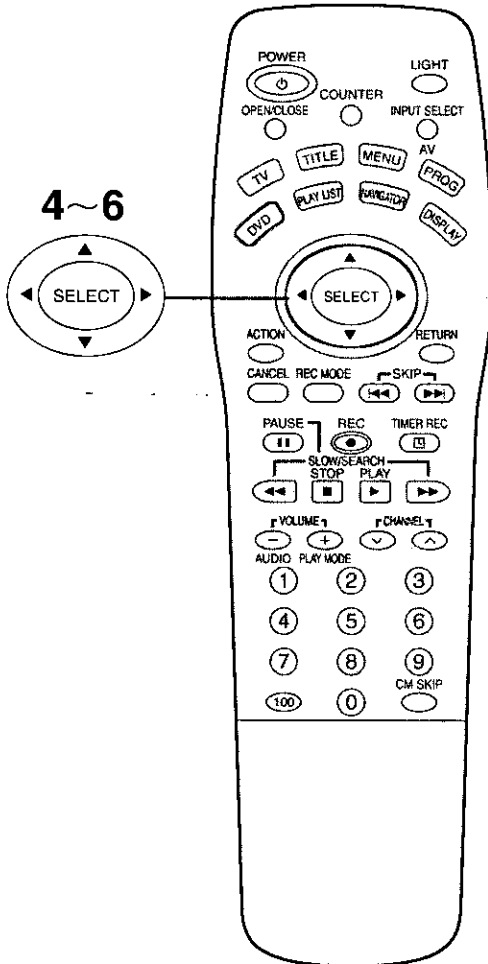
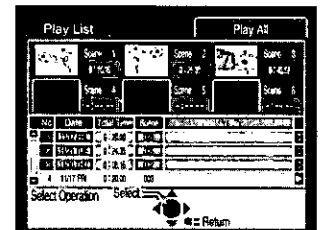
4 Select "Copy" using [▲] and [▼], and press [SELECT].



5 Select "Yes" using [◀], and press [SELECT].



- The copied play list is displayed at the bottom of the list.

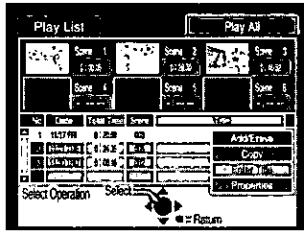


5 Entering a title for each play list

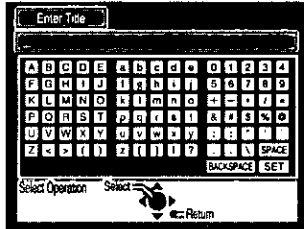
• Proceed after performing steps 1 to 3 on p. 82.

4 Select "Enter Title" using [▲] and [▼], and press [SELECT].

• The title input screen now appears.

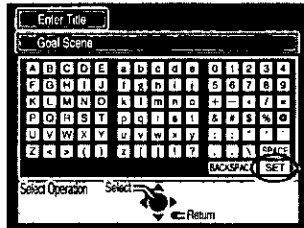


5 Enter the title using [◀], [▲], [▶] and [▼] to select the characters and press [SELECT].



6 When the title has been entered:

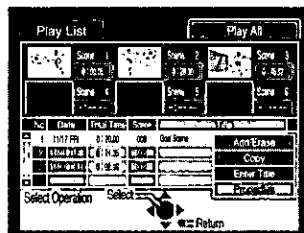
Select "SET" using [◀], [▲], [▶] and [▼], and press [SELECT].



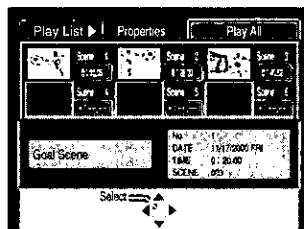
6 Displaying the play list information

• Proceed after performing steps 1 to 3 on p. 82.

4 Select "Properties" using [▲] and [▼], and press [SELECT].



• The name of the play list, if one has been entered, the play list numbers, creation date, total scene recording time and number of scenes will be displayed.



■ **Clearing the display**
Press [SELECT].

Entering titles

The titles and the names of programs and discs can be input using [DIRECT NAVIGATOR] while the names of play lists can be entered using the [PLAY LIST]. The title entry procedure is described in this section.

Preparation

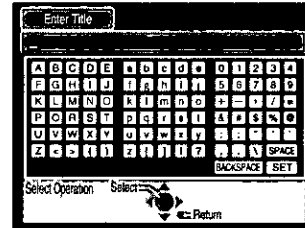
- Press [DVD].
- Insert a pre-recorded disc.
- Using direct navigator, display the program title input screen (p. 71) or disc name input screen (p. 77).
- Using play list, display the scene name input screen on the left.

Title entry procedure

RAM

Entering characters

Select the desired alphanumeric or symbols using [◀], [▲], [▼] and [▶], and press [SELECT].



■ Entering spaces

Select "SPACE" using [◀], [▲], [▼] and [▶], and press [SELECT].

• A space equivalent to one character is now input.

■ When the wrong alphanumeric or symbol was input

Select "BACKSPACE" using [◀], [▲], [▼] and [▶], and press [SELECT].

• A character is deleted every time [SELECT] is pressed.

■ Deleting and adding characters already input

1. Select already input sentences using [▲].
2. Move the cursor "_" to one character behind the character to be deleted using [▼] and [▶].
3. Select "BACK SPACE" using [◀], [▲], [▼] and [▶], and press [SELECT].
4. Select characters to be input for correction using [◀], [▲], [▼] and [▶] and press [SELECT].

■ To complete the entry

Select "SET" using [◀], [▲], [▼] and [▶], and press [SELECT].

Virtual Surround Sound (V.S.S.)

Enjoying V.S.S. through the front speakers

RAM DVD-V

Provided that the DVD disc being played is recorded with the Dolby Digital 2 channel system or higher, you can enjoy surround sound through the front speakers (L/R) alone.

Preparation

• Press [DVD].

1 During playback:

Press [DISPLAY] twice to show the menu bar (unit information screen).

Example using DVD-Video disc



2 Select "V.S.S. mode" using [◀] and [▶].

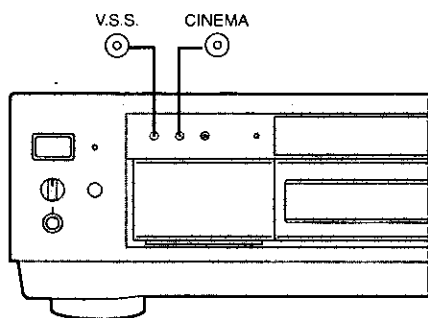
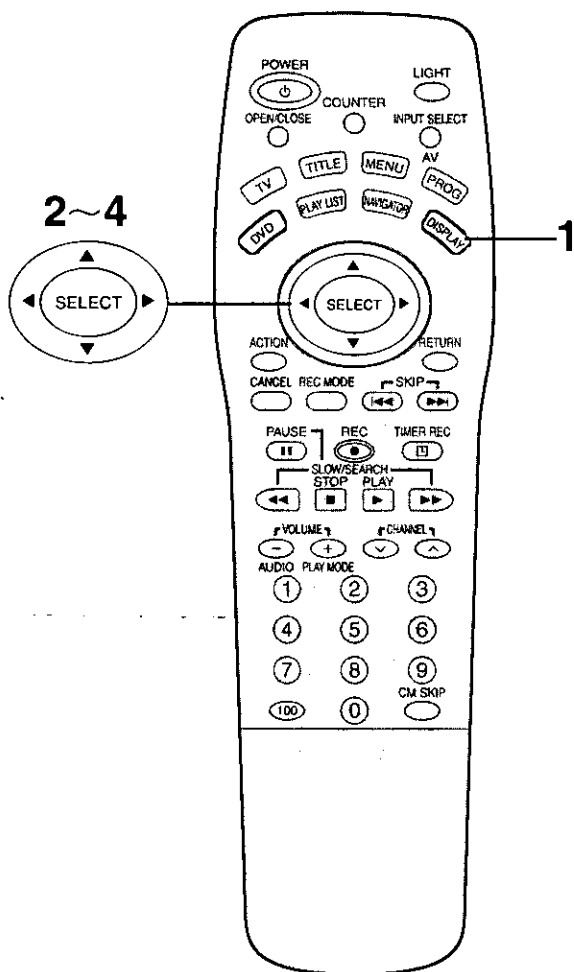
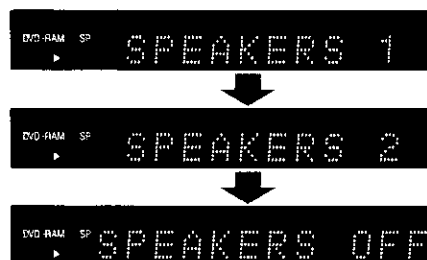


3 Select "◀▶" (speaker mode) using [▲] and [▼].



4 Press [▶] then [▲] or [▼] to select the level.

- Each time this button is pressed, the V.S.S. effect is changed in the following sequence: 1 (level 1) ↔ 2 (level 2) ↔ OFF ↔ ...
- The effect can also be selected by pressing [V.S.S.].
- The V.S.S. button's lamp on the unit is illuminated.
- The display in the unit display window changes in the following sequence: SPEAKERS 1 ↔ SPEAKERS 2 ↔ SPEAKERS OFF ↔ ...



Enjoying V.S.S. through the headphones

RAM DVD-V

If it is a DVD disc is recorded with the Dolby Digital 2 channel system, you can enjoy surround sound even through stereo headphones.

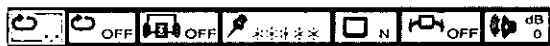
Preparation

- Press [DVD].

1 During playback:

Press [DISPLAY] twice to show the menu bar (unit information screen).

Example using DVD-Video disc



- 2 Select "V.S.S. mode" using [◀] and [▶].

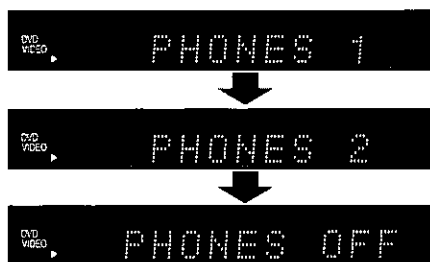


- 3 Select "headphones mode" using [▲] and [▼].



- 4 Press [▶] then [▲] or [▼] to select the level.

- Each time this button is pressed, the V.S.S. effect is changed in the following sequence: 1 (level 1) ↔ 2 (level 2) ↔ OFF ↔
- The effect can also be selected by pressing [V.S.S.].
- The V.S.S. button's lamp on the unit now is illuminated.
- The display in the unit display window changes in the following sequence: PHONES 1 ↔ PHONES 2 ↔ PHONES OFF ↔



Note:

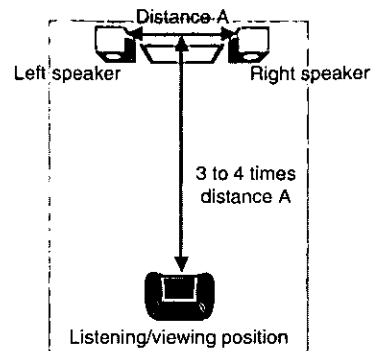
- If headphones are not going to be used, restore the "OFF" setting for the V.S.S. effect.

■ Differences in the effect achieved by V.S.S. level and mode

- 1 (level 1)
The front speakers deliver sound as if it extends slightly more to the left and right from its actual position. When surround signals have been recorded on a disc, the listeners will sense that they are hearing sound from the lateral directions even though no surround speakers are present.
- 2 (level 2)
Sounds appear to be extended even further than with level 1.

■ How to maximize on the effect when listening to sound through the front speakers

Listen and watch at a position situated at a distance equivalent to 3 or 4 times the distance between the left and right front speakers.



■ Restoring the regular sound

Press [V.S.S.] several times to select OFF (SPEAKERS OFF or PHONES OFF).

Notes:

- With some discs, the effect may be reduced.
- The V.S.S. effect cannot be set for the following kinds of discs even though they are DVD discs.
 - Discs with 1 audio channel
 - Discs recorded with dual sound (such as bilingual programs)
 - "Karaoke" discs
 - Discs whose audio signals that were recorded in a mode other than a Dolby mode

Notes:

- The sound may be distorted if "1" or "2" is set for the V.S.S. effect for DVD-RAM discs recorded with a recording level so high that the volume level meter deflects near the 0 dB level. In this case, select "OFF" for the V.S.S. effect.
- When enjoying the V.S.S. effect using the speakers, turn off the surround function of any other audio-video units (such as the TV set or amplifier).

Cinema picture quality

RAM DVD-V VCD

This function suppresses the glaring effect inherent to CRT-based TV pictures to yield a soft and gentle picture. Even if the picture is dark and hard to see, the function will faithfully reproduce the contours of the dark parts on the screen so that the characters, etc. become clearer to view.

During playback:

Press [CINEMA].

- The button's lamp on the front panel of the unit illuminates.

■ Releasing the cinema function

Press [CINEMA] again.

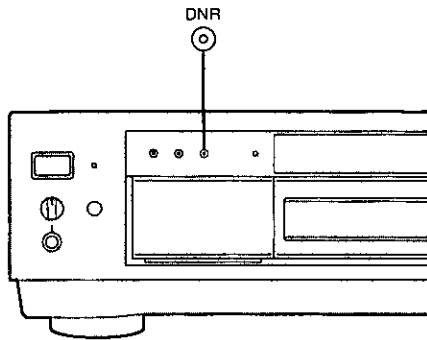
- The button's lamp goes off.
- The N (normal) mode is restored. (p. 42, 43)

Notes:

- The picture quality mode can be adjusted using the menu screen. (p. 42, 43)
- There is no effect if "1 Automatic" or "2 480P" is selected for "3 Component Video Output Setting" accessed from "2 Video Settings" in the Initial Settings when the TV set is connected to the component video output connector.

Digital noise reduction (DNR)

RAM DVD-V VCD



This unit comes with three digital noise reduction functions for reproducing pictures even more clearly. Supporting wide-screen and large-screen TVs, they enable viewers to watch pictures with a higher picture quality.

- The following 3 digital noise reduction functions are featured:

- 1 Block noise reduction
- 2 Mosquito noise reduction
- 3 3-dimensional noise reduction

After the picture quality levels for each of the noise reduction functions have been adjusted at the initial settings stage, these functions can be turned on or off using [DNR] on the unit.

- For a detailed description of each of the noise reduction functions and how to set them, refer to p. 120.

Press [DNR].

- The button's lamp on the front panel of the unit illuminates.

■ Releasing the DNR function

Press [DNR] again.

- The button's lamp goes off.

■ When using the unit as a player for editing

Since the noise reduction functions execute processing to ensure that the discs are played with clearer images, the picture quality may conversely deteriorate when the unit is used as a player for editing. If this happens, press [DNR] to release the functions (DNR button's lamp will turn off).

Audio mode

The kind of sound being received or played by this unit can be selected by following the steps below.

Preparation

- Press [DVD].

Press [AUDIO] several times to select the audio mode you want to hear.

- Each time the button is pressed, the sound is switched as shown below.
- The selected sound will remain selected until the power is turned off.

To select the sound being received (MTS stereo and SAP broadcasts)

Multi-channel Television Sound Stereo broadcasts (main language) and Secondary Audio Program (sub language) broadcasts are both being received simultaneously. Select Stereo or SAP audio mode.

MTS Stereo broadcast

Multi-channel Television Sound Stereo broadcast. Select Stereo audio mode.

- If the stereo broadcast is weak and the display flickers, select MONO audio mode for possibly better results.

SAP broadcast

Secondary Audio Program (sub language) broadcast. Select SAP audio mode for the sub language.

MONO broadcast

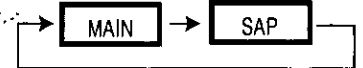
Normal monaural sound broadcast.



To select the sound during playback

- The sound mode changes as shown below.

1. With a DVD-RAM disc
(When playing back an SAP broadcast)



2. With a DVD-RAM disc
(When playing back a stereo or monaural program)



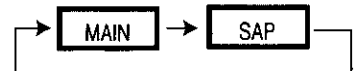
3. With a Video CD

To select the sound using the menu bar

1. Press [DISPLAY] to show the menu bar display.
2. Select the "Sound mode" using [◀] and [▶].
3. Select the sound to be heard using [▲] and [▼].

- The sound mode changes as shown below.

1. With a DVD-RAM disc
(When playing back an SAP broadcast)



2. With a DVD-RAM disc
(When playing back a stereo or monaural program)



3. With a Video CD



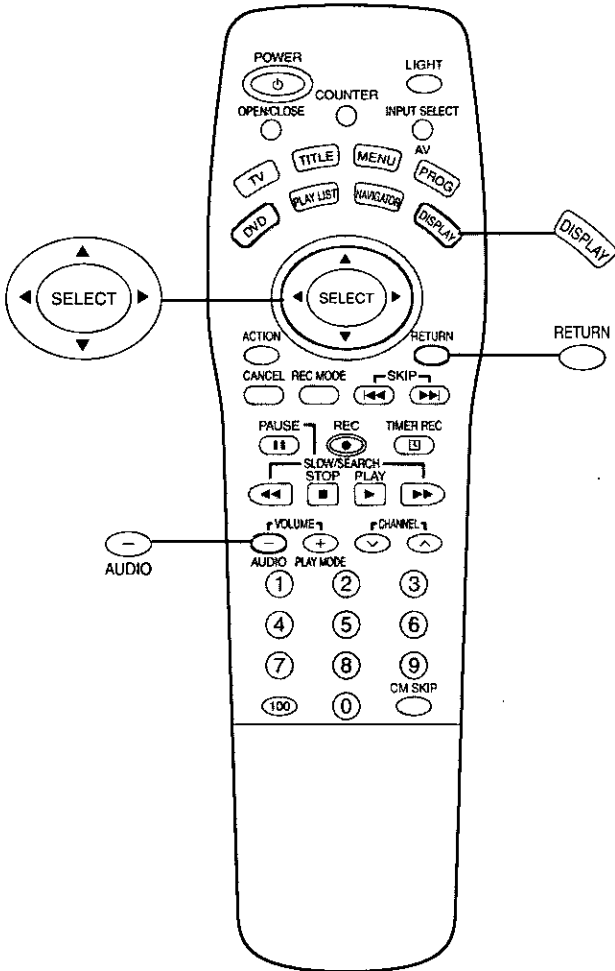
- Refer to p. 92 for details on showing the audio display on the TV screen.

To clear the menu bar

Press [RETURN].

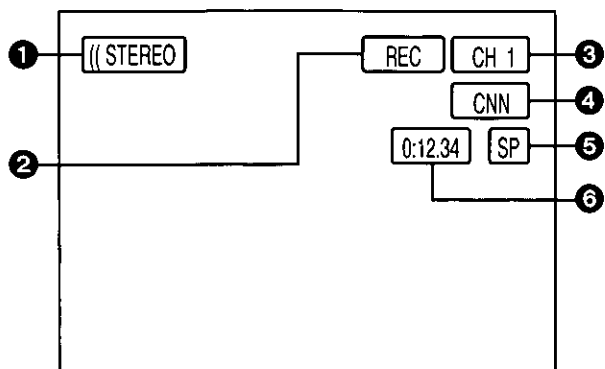
Note:

- It is not possible to record the selected sound alone. Selecting the sound as described above during recording will have no effect on the sound recorded.



On-screen display information

Information such as the details of its operations and statuses can be monitored on the TV screen.



■ During TV reception or recording

① Audio display

When receiving a TV program, the DVD-Recorder automatically indicates when a TV program is broadcast with the stereo and/or SAP sound system.

- "STEREO", "SAP" or "MONO" is displayed when the sound has been selected by pressing [AUDIO]. (p. 126)
- The stereo audio mode is indicated with the "(((" mark when the audio button is pressed is the type of sound now being received from the broadcast station. However, when monaural sound is received, the "(((" mark is not displayed.

② Recording mode display

- The unit's operating status is displayed here.

REC: Now recording
 PAUSE: Recording pause
 OPEN: The disc tray is open.
 CLOSE: The disc tray is closed.
 READING: The disc is being read.

③ Channel display

- The channel is displayed when the channel is selected or when recording has been started.

④ Channel Caption display

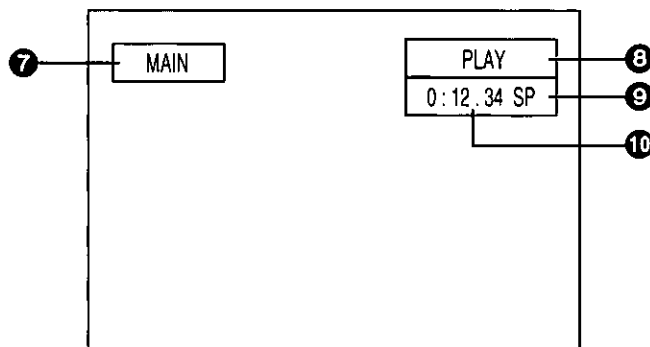
- The station name is displayed when the channel is selected or when recording has been started.

⑤ Recording mode display

- "XP", "SP", "LP" or "FR" appears depending on the current recording mode setting.

⑥ Remaining disc time, date/current time and counter display

- When [COUNTER] is pressed several times, the remaining disc time (for DVD-RAM discs only), date/current time and counter displays are indicated. (See page 93)



■ During playback

⑦ Audio display

- Audio mode for playback is displayed. (VCD)

"LR" (left + right) is displayed.

(DVD-RAM)

When recording with stereo or monaural:

- "LR" (left + right), "L" (left) or "R" (right) is displayed.

When recording with SAP:

- "MAIN", "SAP" is displayed.

⑧ Playback mode displays

- These displays indicate the unit's operation mode.

●●●▶▶▶: Forward search 4 (at the highest speed)

●●▶▶▶: Forward search 3

●▶▶▶●: Forward search 2

▶▶▶●●: Forward search 1 (at the lowest speed)

PLAY: Normal playback

●▶: Slow playback (at the highest speed)

▶●: Slow playback (at the lowest speed)

||: Still picture (pause)

●◀: Reverse slow playback (at the lowest speed)

◀●: Reverse slow playback (at the highest speed)

◀: Reverse playback

●●●◀◀◀: Reverse search 1 (at the lowest speed)

●●◀◀◀: Reverse search 2

●◀◀◀●: Reverse search 3

◀◀◀●●: Reverse search 4 (at the highest speed)

⑨ Recording time display

- "XP", "SP", "LP" or "FR" appears when recording is started or when the remaining disc time display is selected, etc.

⑩ Remaining disc time, date/current time and counter display

- When [COUNTER] is pressed several times, the remaining disc time (for DVD-RAM discs only), date/current time and counter displays are indicated. (See page 93)

Notes:

- The on-screen displays are not shown when the following selections are made: "1 Set Up" in the Initial Settings → "1 On-Screen Display" → "1 On-Screen Messages" → "3 Off".
- Depending on the type of TV set used, the on-screen displays may roll or be disrupted. They may also be disrupted when the unit's operation is changed.

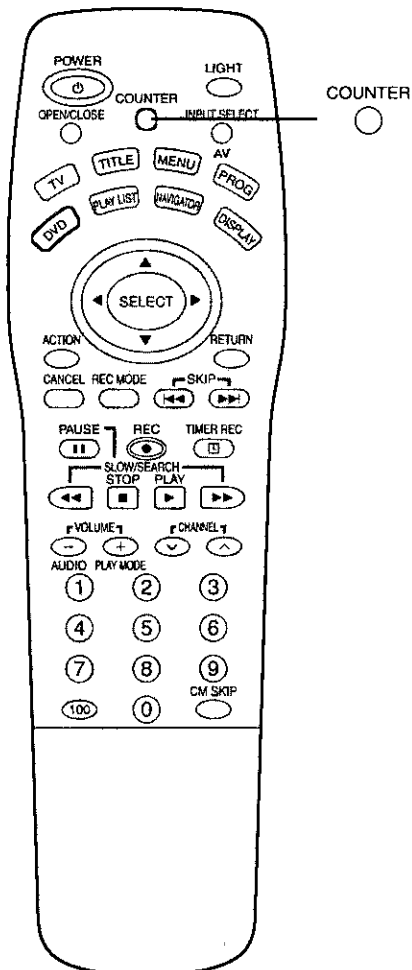
Counter display information

The remaining disc time (for DVD-RAM discs only), date/current time and counter value displays can be checked on the TV screen.

Preparation

- Press [DVD].
- Select "1 Set Up" in the Initial Settings → "1 On-Screen Display" → "1 On-Screen Messages" → "1 Automatic" or "2 On". (p. 110)

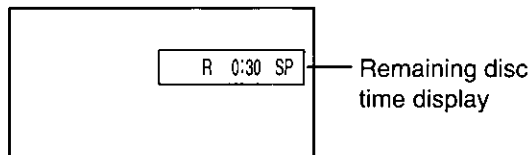
RAM



■ Remaining disc time (recordable time) display

Press [COUNTER].

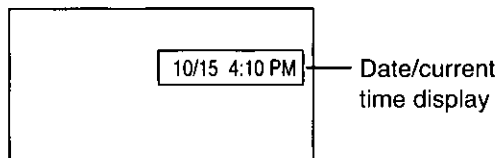
- The remaining disc display also appears on the unit display window.
- The disc's recordable time is displayed. (The value displayed is only a rough estimate.)



■ Date/current time display

Press [COUNTER] again.

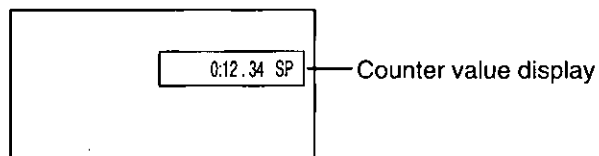
- The current time is now displayed on the unit display window.
- Even the seconds will be displayed when the automatic time setting function (p. 129) has been activated.



■ Counter display

Press [COUNTER] again.

- The counter value also appears on the unit display window.



- When [COUNTER] is pressed again, the remaining disc time display is restored.

■ When the counter button is operated in the stop mode (resume cancelled)

Each time the button is pressed, the display changes in the following sequence: date/current time → counter → remaining disc time

On screen display information

(continued)

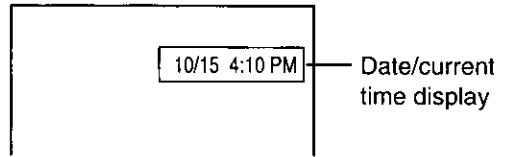
Switching the displays

DVD-V **VCD** **CD**

■ Date/current time display

Press [COUNTER].

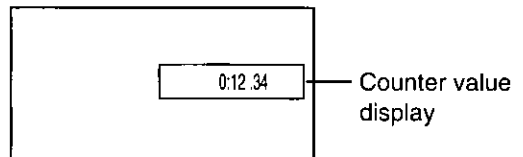
- The current time is now displayed on the unit display window.



■ Counter display

Press [COUNTER] again.

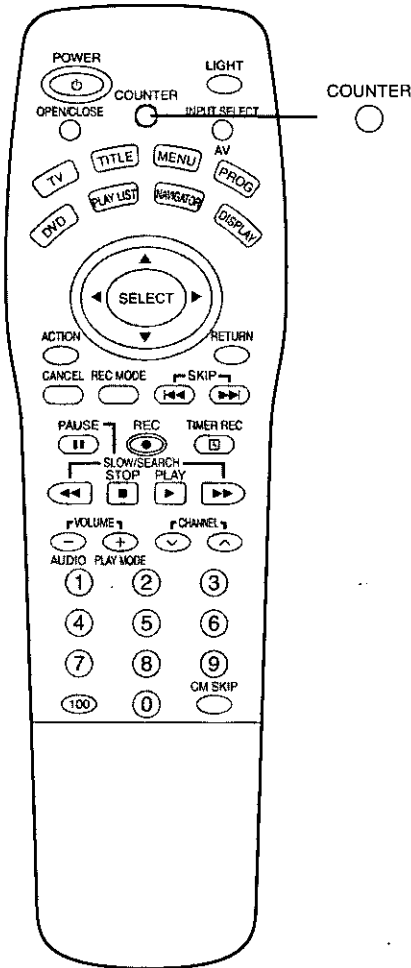
- The counter value also appears on the unit display window.



- When [COUNTER] is pressed again, the date/current time display is restored.

Notes:

- The display is cleared after about 5 seconds when the following selections are made: "1 Set Up" in the Initial Settings → "1 On-Screen Display" → "1 On-Screen Messages" → "1 Automatic". The on-screen displays will not appear when "3 Off" is selected as the "1 On-Screen Messages" setting.
- If a disc has not been inserted, only the date/current time will be displayed when the counter button is pressed.
- The remaining recordable time is indicated as the remaining disc time display. It appears only for DVD-RAM discs.
- The way in which the counter value is displayed for a video CD or CD differs depending on the menu bar setting. (The elapsed track time, remaining track time or remaining disc time can be selected as the counter value.)



Programming the remote control

Changing the remote control code enables a Panasonic DVD recorder, DVD player and other Panasonic components besides this unit to be operated separately at the same location.

In addition to this unit, almost all of Panasonic's DVD recorders and DVD players use the same kind of remote control signals. This means that these components cannot be operated properly at the same location (with the remote control units). To rectify this, change the remote control code by taking the following steps.

- The factory setting for the remote control is "1".


Changing the unit's code

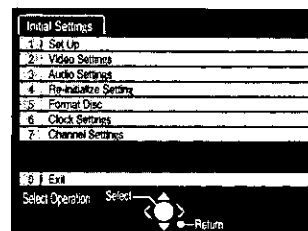
Preparation

- Press [DVD].

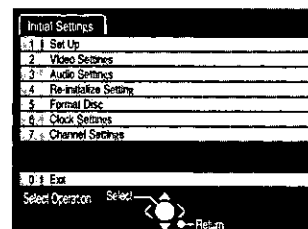
1 During stop: Press [ACTION].

- If the unit is not in the

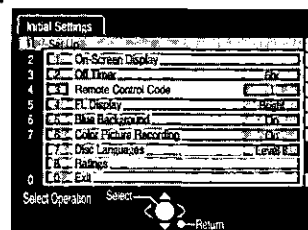
stop mode,  may appear on the TV screen. In this case, first press [STOP], then press [ACTION].



2 Select "1 Set Up" using [▲] and [▼], and press [SELECT].

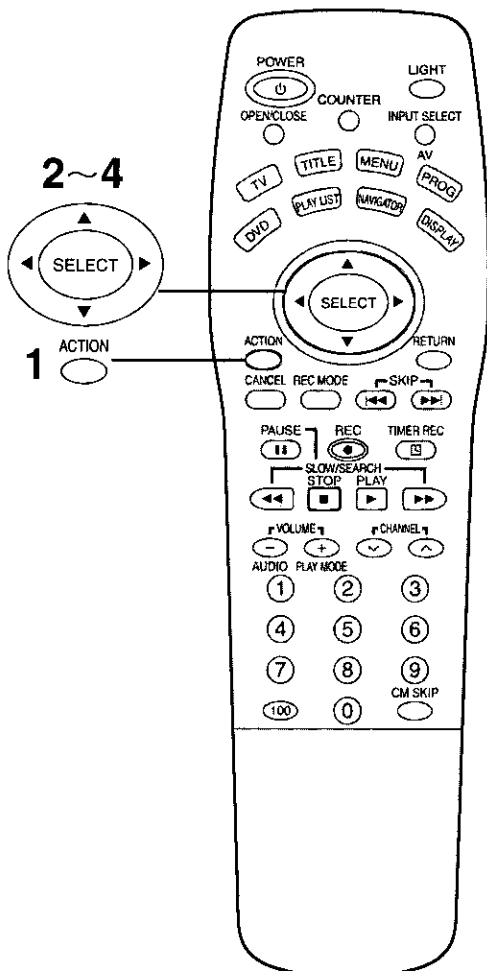
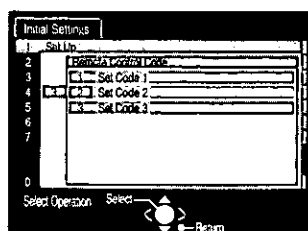


3 Select "3 Remote Control Code" using [▲] and [▼], and press [SELECT].



4 Select "Set Code (1, 2 or 3)" using [▲] and [▼], and press [SELECT].

- Example of when remote control code 2 has been selected



Programming the remote control control (continued)

Changing the remote control's code

Preparation

- Press [DVD].

■ Setting Remote Control Code 1

Press [DVD] and [1] simultaneously.

■ Setting Remote Control Code 2

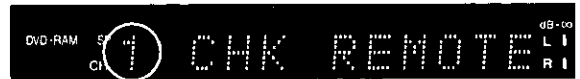
Press [DVD] and [2] simultaneously.

■ Setting Remote Control Code 3

Press [DVD] and [3] simultaneously.

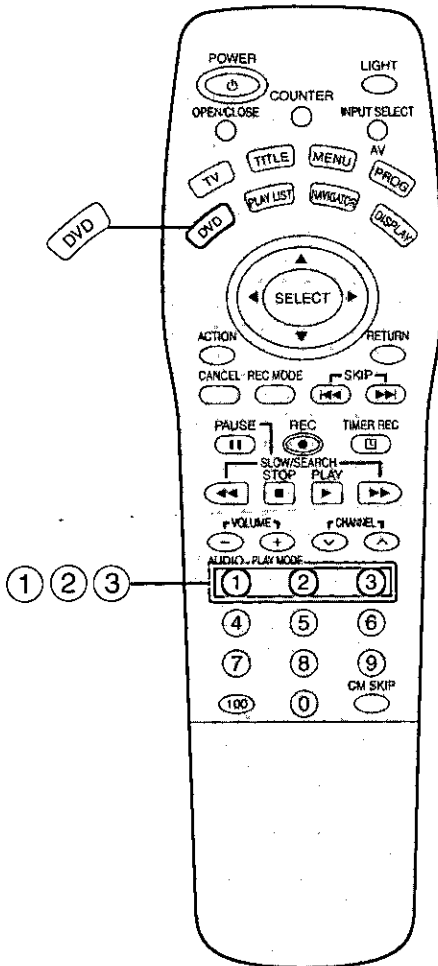
Note:

- When no operations can be performed and the display shown below appears in the unit display window, it means that different remote control codes have been set for the unit and for the remote control. Set the same code in the remote control as the code set in the unit.



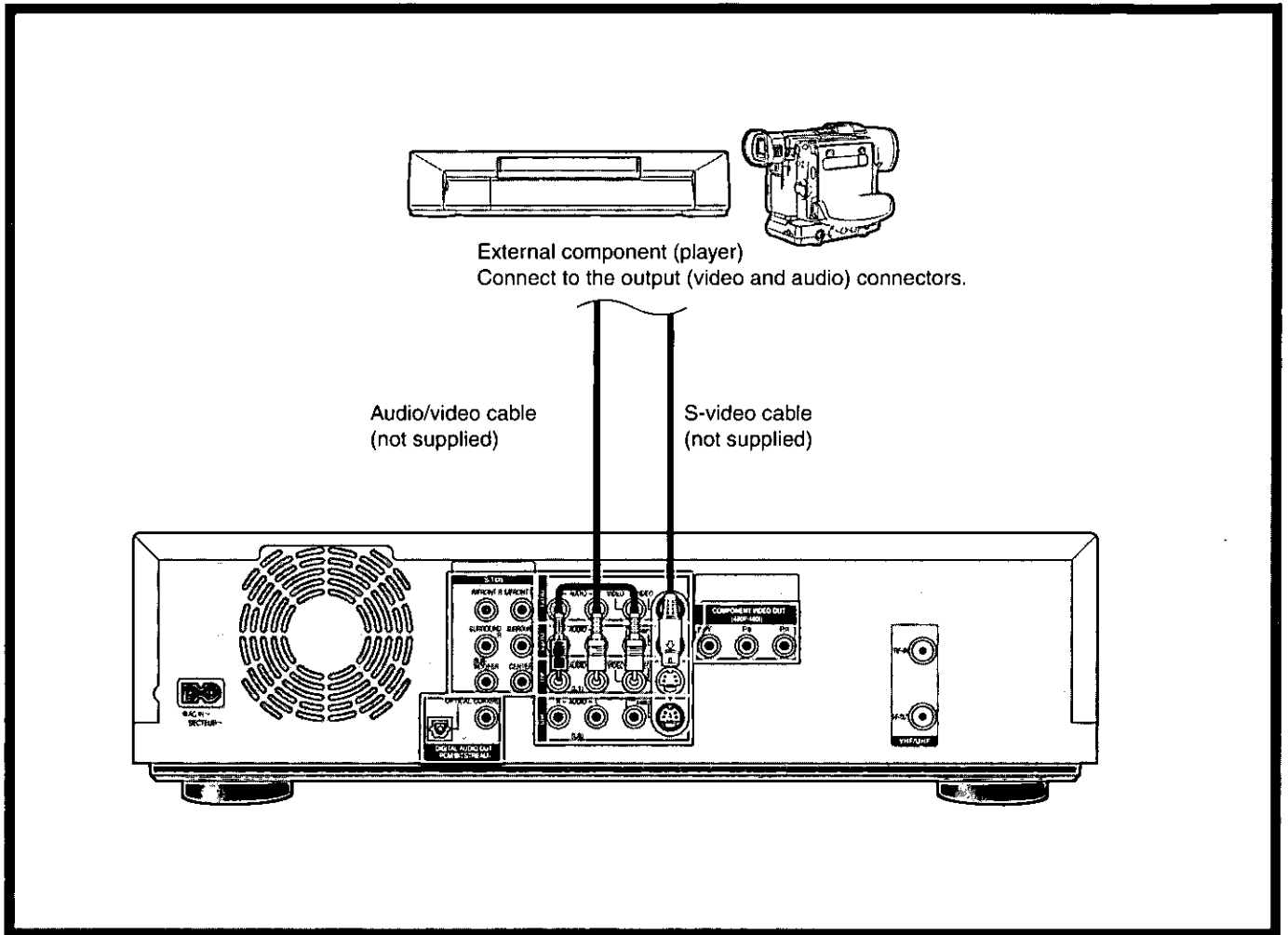
Unit's remote control
code number

- The displays are shown for about 5 seconds, and then the original status is restored. (This has no adverse effect on the unit or what has been programmed, etc.)



Connecting an external component

This unit can record pictures and sound from a video cassette recorder or video camera connected externally.



Note:

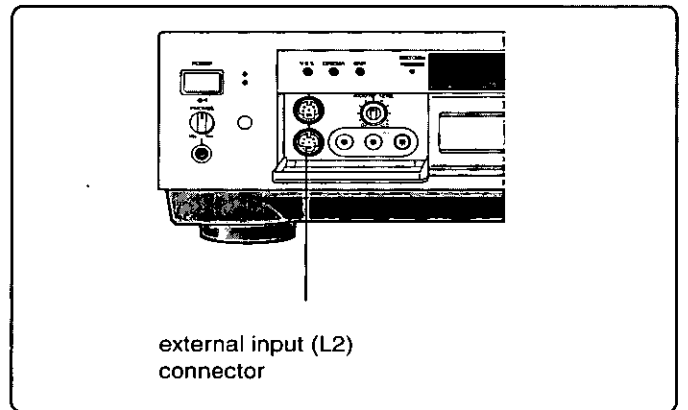
Although the external component is connected to the unit's external input 1 (L1) connector in the example shown above, it can also be connected to its external input 2 (L2) connector on the front panel or its external input 3 (L3) connector on the rear panel.

■ When the external component has a monaural audio output connector

Use the Audio/video cable to connect the component to the external input 2 (L2) connector on the unit's front panel.

- Connect the audio cable to the AUDIO IN L/MONO connector.

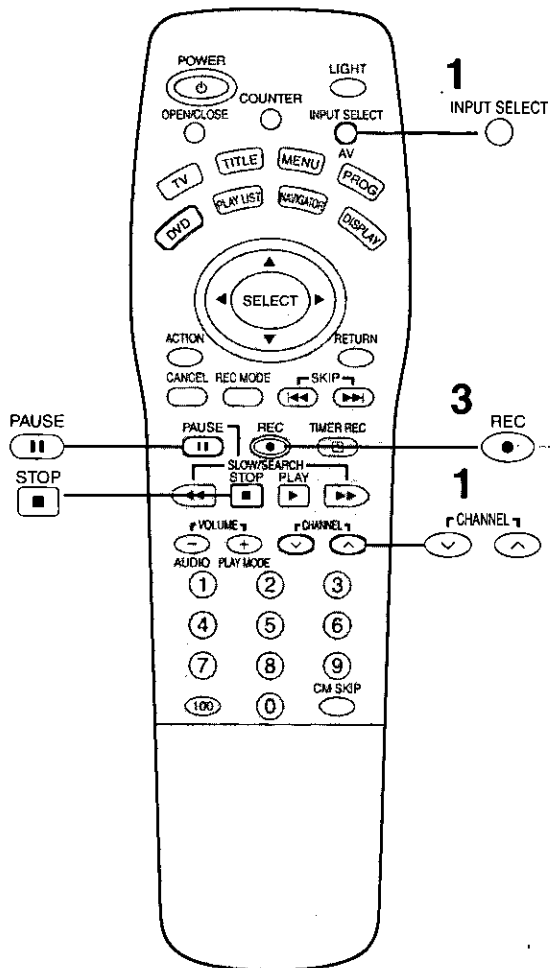
- When both composite video (yellow) and S-video cables are connected to the same input connectors (L1 or L2 or L3), the S-video connector has higher priority.
(To view the composite video signal, unplug the S-video cable.)



Dubbing/Editing

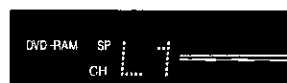
Preparation

- Perform the necessary connections.
- Press [DVD].
- Insert a recordable disc into the recorder (this unit).
- Select the recording time (XP, SP or LP) using the recorder (this unit).



1 Press [INPUT SELECT] to select the external component input.

- When the external component has been connected to the unit's external input 1 connector (rear panel): Select "L1."
- When the external component has been connected to the unit's external input 2 connector (front panel): Select "L2."
- When the external component has been connected to the unit's external input 3 connector (rear panel): Select "L3."



When the external input L1 channel has been selected

2 Start playback.

3 At the scene where recording is to start, press [REC].

■ Skipping unnecessary scenes

- Press [PAUSE] to skip unnecessary scenes.
- Recording resumes when [PAUSE] is pressed again.

■ Stopping recording

Press [STOP].

■ Recordings where the picture is disrupted and the color deteriorates

Some software on the market (including rental videos) imposes protective safeguards against copying in order to prevent illegal copying. Signals subject to these protective safeguards cannot be recorded properly. Furthermore, their pictures will be disrupted and their coloring will deteriorate when an attempt is made to view them on a TV screen by passing the signals through the unit.

■ When using the unit as a player.

- Unnecessary characters or displays will no longer appear on the screen when the following selections are made: "1 Set Up" in the Initial Settings → "1 On-Screen Display" → "1 On-Screen Messages" → "3 Off".
- Make the following selections: "2 Video Settings" in the Initial Settings → "6 Noise Reduction (NR)" → "3 3-D NR" → "4 Off".

■ When performing operations near the TV set

When the unit is close to the TV set, noise in the form of black bands may be recorded. If this happens, move the unit as far away from the TV set as possible.

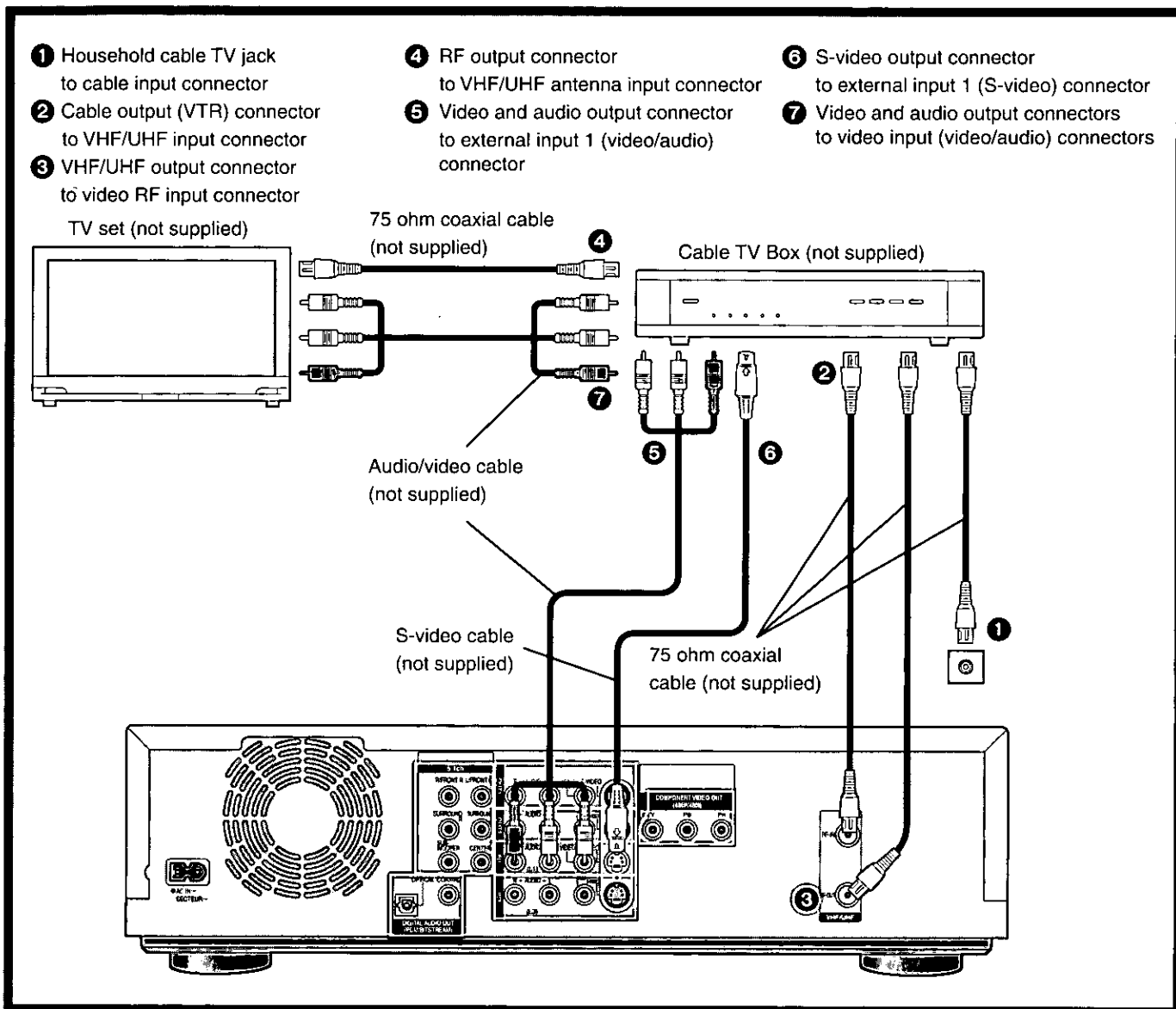


Connecting a cable TV box (adaptor)

A specially designed cable TV box (adaptor) may be required to watch CATV broadcasts.

- Before proceeding with the connections, turn off the power of the components and make sure that your hands are dry.
- Read the operating instructions of the TV set and home terminal as well. (For further details, consult the CATV company.)

Connect the components correctly in the order below.



Notes:

- VCR Plus+ programming is not possible unless the guide channels of each broadcast station have been set. For details on setting the reception channels, refer to p. 19.
- Switch the unit's input when pay-per-view broadcasts are to be received. The pay-per-view broadcasts received by this unit's tuner will not be reproduced clearly. Switch to the external input that the cable TV box is connected (external input "L1" in the connections example shown above). (For further details, consult the CATV company.)
- When both composite video (yellow) and S-video cables are connected to the same input connectors (L1 or L2 or L3), the S-video connector has higher priority. (To view the composite video signal, unplug the S-video cable.)

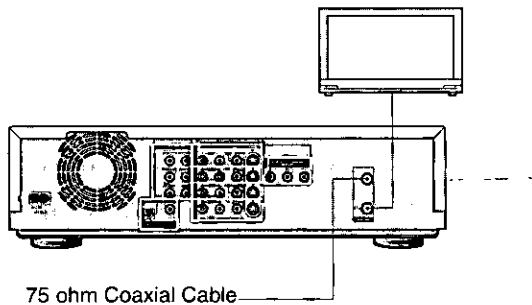
Connecting a cable TV box (adaptor) (continued)

Cable-DVD Video Recorder-TV (For CATV/PAY Channels Recording/Playback)

The DVD Video Recorder has an extended range, and can tune the Low-Band, Mid-Band, Super-Band, Hyper-Band, Ultra-Band, and Special cable channels (14–69). Refer to **Channel settings** on p. 18.

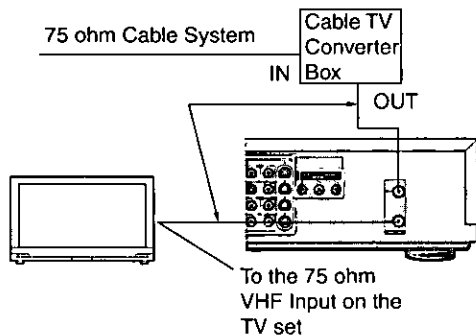
basic hook-up

Since the DVD Video Recorder can tune Mid and Super Bands, this connection will provide the reception of all cable channels except those which are intentionally scrambled.

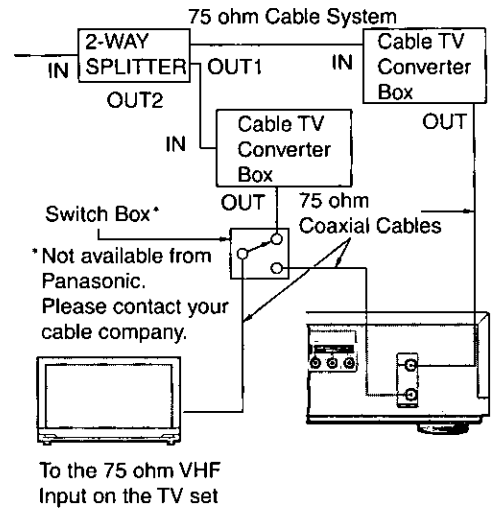


However, if you subscribe to a special channel which is scrambled you will probably have a descrambler box for proper reception. The DVD Video Recorder by itself cannot properly receive a scrambled program since it does not contain a descrambler. In order for the DVD Video Recorder to properly receive a scrambled program, your existing descrambler must be used. There are two commonly used methods of connection in this case.

Typical Cable System Hook Ups with Cable Converter/Descrambler Boxes



The above cable hook-up allows DVD Video Recorder-TV functions except for viewing one channel while recording another.



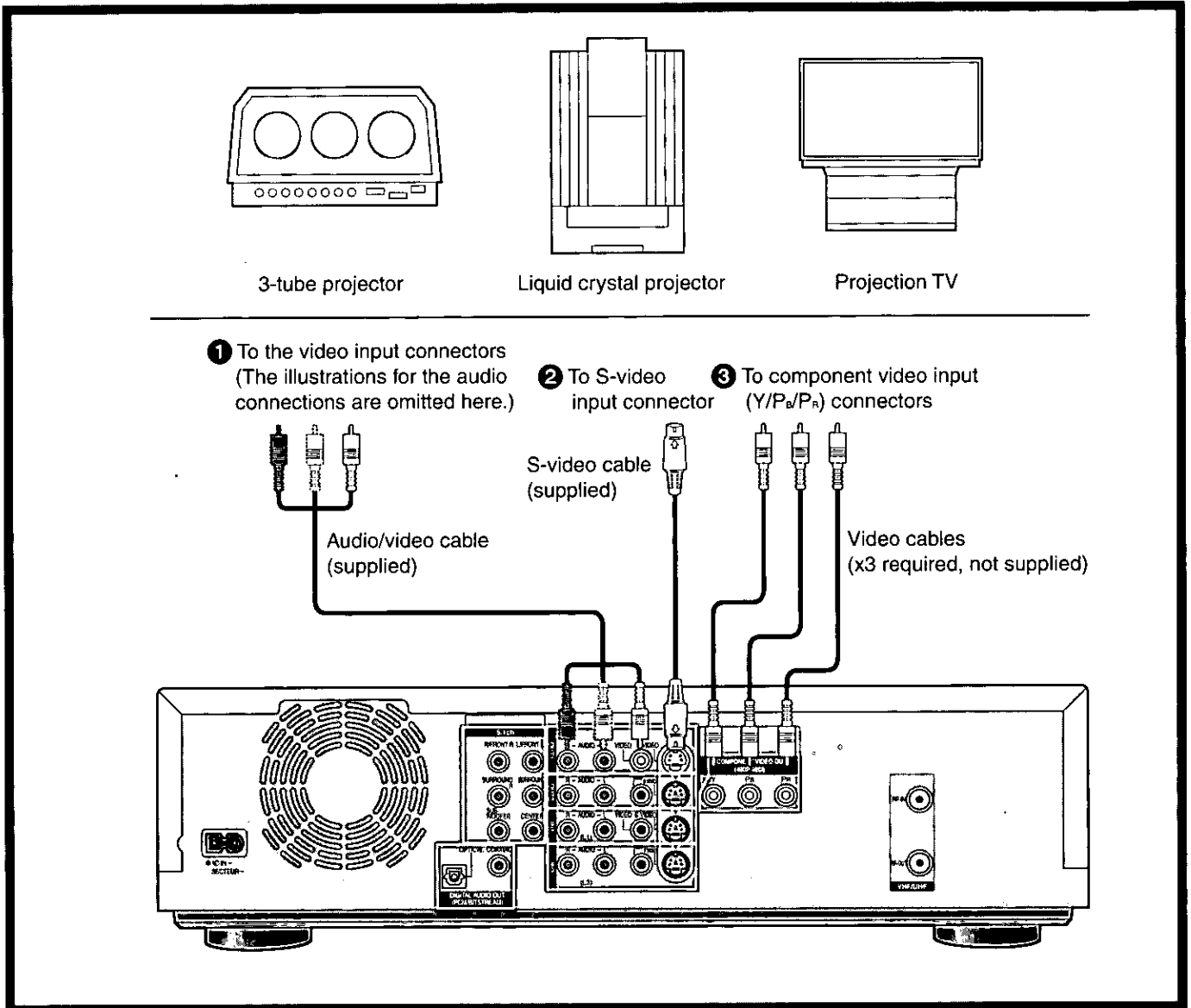
The above cable hook-up allows DVD Video Recorder functions, including viewing one channel while recording another, but it requires two cable TV Converter/Descrambler Boxes, one Switch Box and one 2-Way Splitter.

Since the DVD Video Recorder has an extended range of tuning, tuning-programing of non-scrambled Mid-Band and Super-Band TV programs is possible. When a cable converter or descrambler box is connected to the DVD Video Recorder, all timer-controlled recording functions will continue to operate with the exception of changing channels automatically. CATV channel selection will have to be performed with the cable converter. Timer-controlled recording from CATV channels is therefore limited to one channel at any given time.

Connections to other video components

The unit's video output can be connected to various other video components in addition to the TV set.

- Check the shapes of the connectors provided on the component to be used, and perform the connections using one of the three methods shown in the figure below.
- Before proceeding with the connections, turn off the power of the components and make sure that your hands are dry.
- Read the operating instructions of the component which is to be connected as well.



■ 3-tube projector

- Pictures can be projected onto a large cinema-size screen from three light sources to increase your viewing pleasure.

■ Liquid crystal projector

- Pictures can be projected onto a large cinema-size screen from a liquid crystal panel to increase your viewing pleasure.

■ Projection TV

- By using a projector system to project the pictures onto a large screen, you can enjoy pictures with the kind of realism that CRT TVs cannot provide.

■ S-video connector

- This connector achieves pictures with a higher picture quality than a regular video connector.

■ Component video connectors

- Clearer pictures than those provided from the regular video and S-video connectors can be obtained. The high picture quality and high-quality pictures of DVD discs are reproduced down to even the subtle colors.
- Depending on the component used, the input connector markings (such as Y, P_B and P_R or Y, B-Y and R-Y) may differ. Read the instructions accompanying the component as well.

Advanced connections guide

If you plan to configure an audio system that will incorporate this unit, refer to the table below for the necessary connections and settings.

Objective	Required components
To enjoy the Dolby Digital 3/2.1 channel surround sound of DVD discs. (Basic system) (p. 104)	* The required components listed here are examples. <ul style="list-style-type: none">• Amplifier with 3/2.1 channel input facilities• Speaker systems for 3/2.1 channel sound
To enjoy the 3/2.1 channel surround sound of DVD discs using a Dolby Digital & dts decoder (or amplifier with built-in decoder). (p. 105)	<ul style="list-style-type: none">• Amplifier with a built-in Dolby Digital & dts decoder or a Dolby Digital/dts decoder and an amplifier with 3/2.1 channel input facilities• Speaker systems for 3/2.1 channel sound
To connect with a 2-channel analogue amplifier (including a Dolby Pro Logic amplifier). (p. 106)	<ul style="list-style-type: none">• 2-channel analogue amplifier
To connect with a 2-channel digital amplifier. (p. 106)	<ul style="list-style-type: none">• 2-channel digital amplifier
To record on a cassette deck, etc. (Analogue recording) (p. 106)	<ul style="list-style-type: none">• Amplifier• Cassette deck, etc.
To record digital signals to an MD deck. (Digital recording) (p. 106)	<ul style="list-style-type: none">• Amplifier• MD deck or other digital recording component Use a digital recording component that supports sampling frequency specifications of 48 kHz/16 bits. Discs protected by copy safeguards cannot be digitally recorded.

Initial settings
 "3 Audio Settings" → "1 Digital Audio Output"

- "1 LPCM 96 → 48kHz" → "1 On"
- "2 Dolby Digital" → "2 PCM"
- "3 dts" → "2 Off"

- "1 LPCM 96 → 48kHz" → "1 On"
 - "2 Dolby Digital" → "1 Bitstream"
 - "3 dts" → "1 Bitstream"
- Set "3 dts" to "2 Off" if the decoder does not support dts.

- No settings required.

- "1 LPCM 96k → 48kHz" → "1 On"
- "2 Dolby Digital" → "2 PCM"
- "3 dts" → "2 off"

- No settings required.

- "1 LPCM 96k → 48kHz" → "1 On"
- "2 Dolby Digital" → "2 PCM"
- "3 dts" → "2 off"

Initial settings
 "3 Audio Settings" → "4 Speaker Setting"

- Display the icon marks for all speakers connected.
 - Set "Output balance."
 - Set "Delay time."
- When 3 or 4 speakers are to be connected.**
- Display the icon marks for only the speakers connected. For instance, connect to front (L/R) and center when using 3 speakers and to front (L/R) and surround (L/R) with 4 speakers.

- No settings required.
- Perform the speaker settings at the decoder. Do not change the unit's factory settings.

- No settings required.
- In the case of a Dolby Pro Logic amplifier, perform the speaker settings at the amplifier.

- No settings required.

- No settings required.

- No settings required.

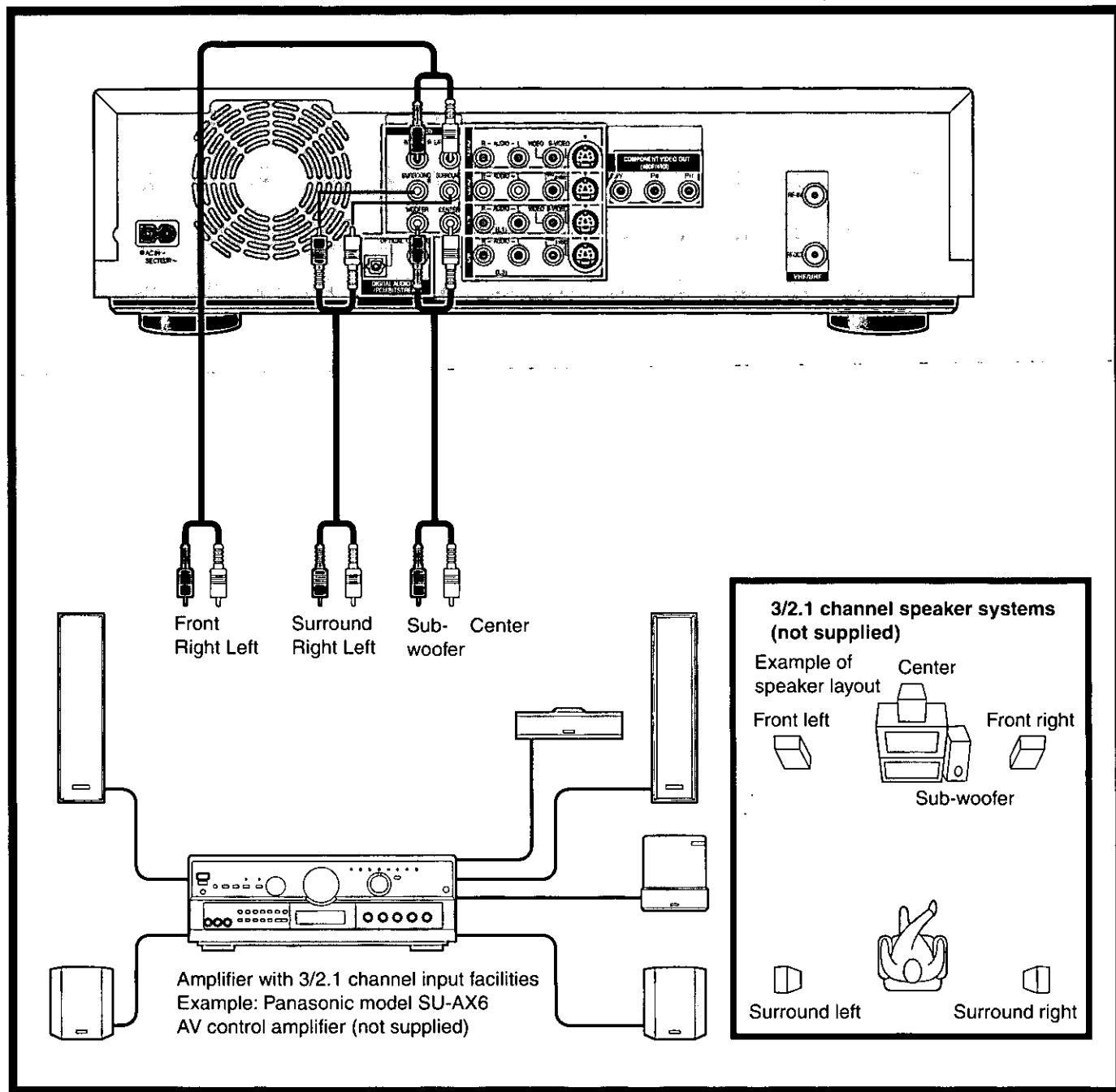
Note:

- Playing DVD discs without establishing the initial settings properly may generate a level of noise that can be harmful to your ears, and speakers.

Advanced connections

Configuring a Dolby Digital 3/2.1 channel surround system (basic system)

This basic system constitutes a full-blown home theater for increasing your viewing pleasure of DVD-Video discs.

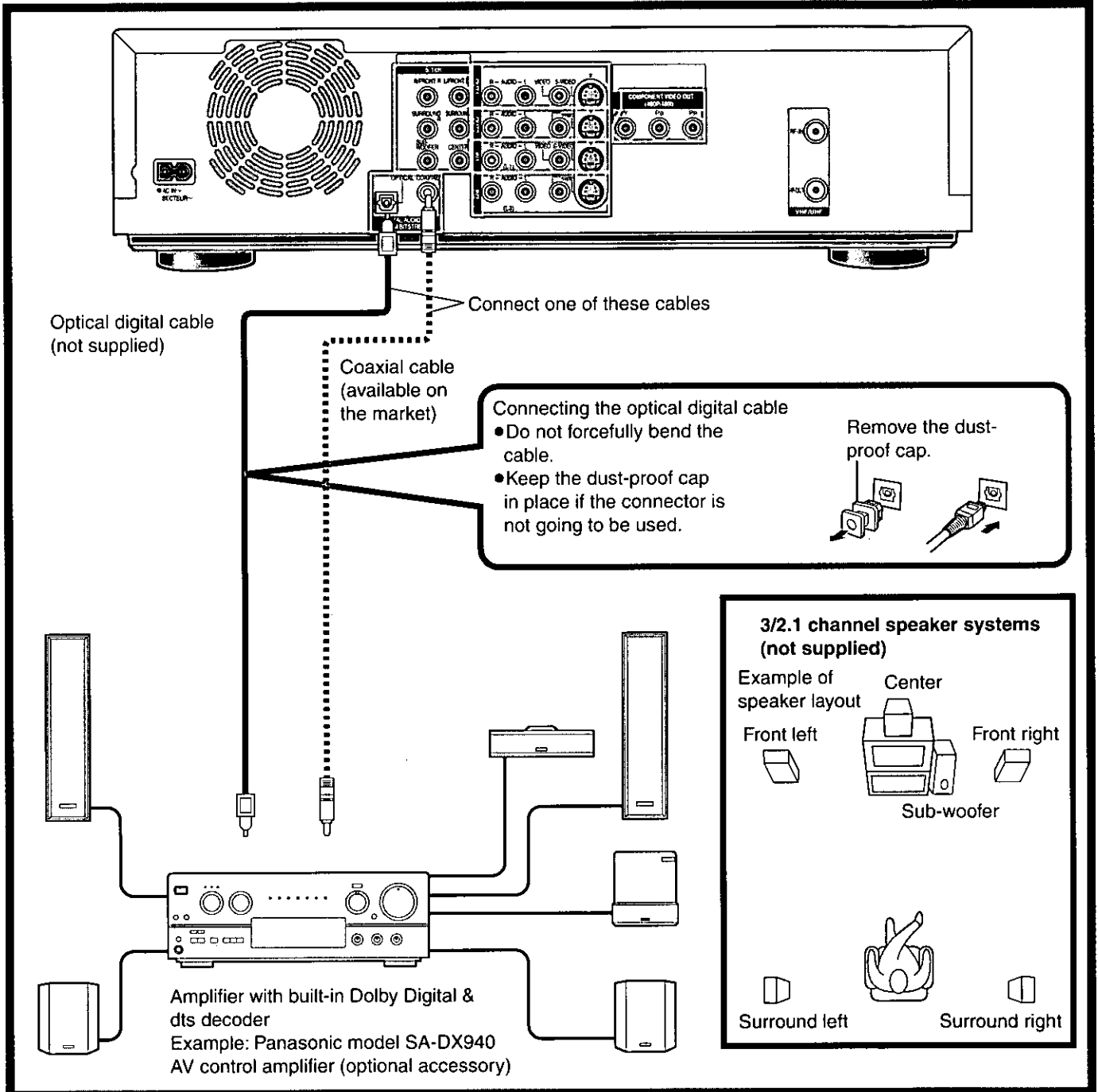


Note:

- When using speakers in addition to front speakers, the V.S.S. (virtual surround sound) mode must be turned off. If the V.S.S. 1 or V.S.S. 2 mode is set, sound will be heard only from the front speakers: the other speakers will be silent.

Connecting a 3/2.1 channel surround system using an amplifier with a built-in Dolby Digital & dts decoder

When playing back DVD-Video discs recorded using the Dolby Digital/dts 3/2.1 channel surround system, you can enjoy the same kind of realistic and ambience-filled sound you would hear in a movie theater or concert hall by connecting the unit to an amplifier with a built-in Dolby Digital & dts decoder or to an amplifier with 3/2.1 channel input connectors with a Dolby Digital & dts decoder connected between the unit and the amplifier.



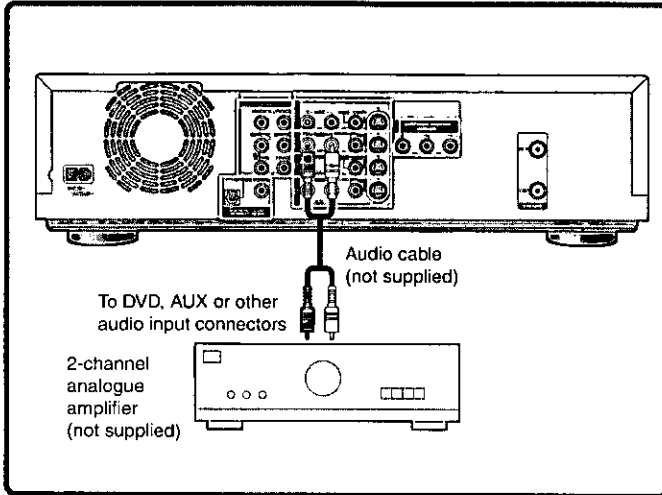
Notes:

- The figure above shows an example where the unit is connected to an amplifier with a built-in Dolby Digital & dts decoder. If the amplifier does not contain such a decoder, a Dolby Digital/dts decoder (optional accessory) must be connected between the unit and amplifier.
- A dts decoder which does not support DVD discs cannot be used.

- As this unit is not equipped with a built-in dts decoder, noise will be output from the headphone and audio output connectors when dts CDs are played back.
- The full effect of dts CDs can be enjoyed by connecting the digital output of this unit to an external dts decoder.

Advanced connections (continued)

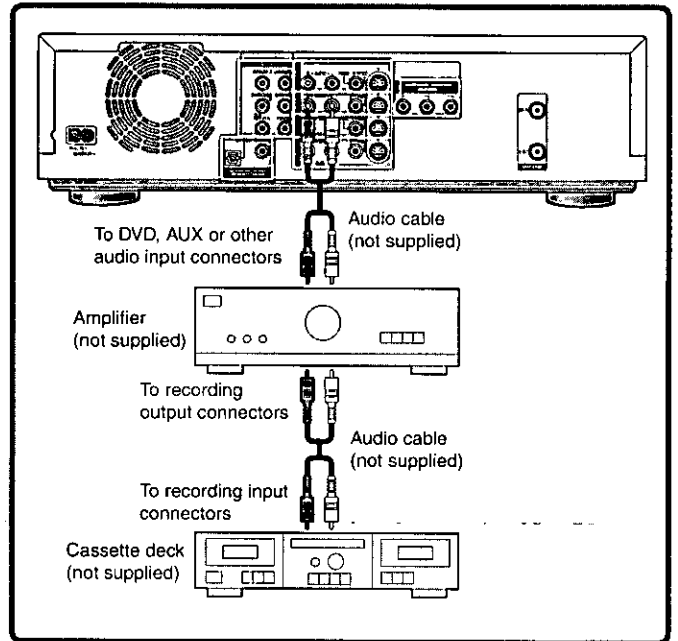
Connecting to a 2-channel analogue amplifier



Note:

- Even when the 3/2.1 channel audio signals are input, the sound of all the channels is always mixed down and output to 2 channels.

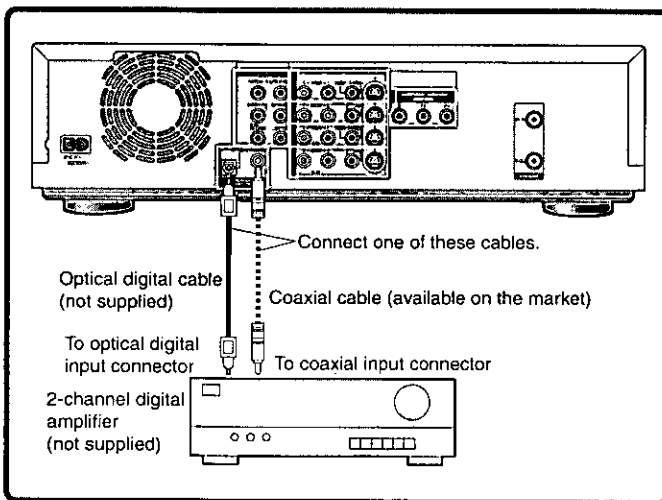
Recording on a deck connected to the amplifier



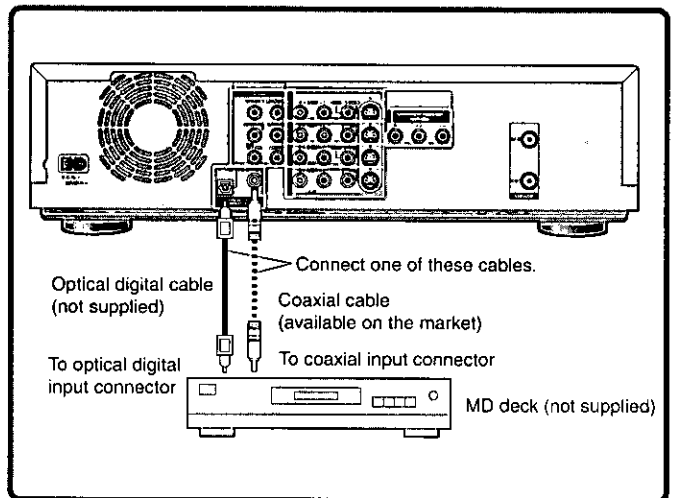
Note

- When the 3/2.1 channel connection alone is made, only the front channel sound is output.

Connecting to a 2-channel digital amplifier



Recording directly onto an MD, etc



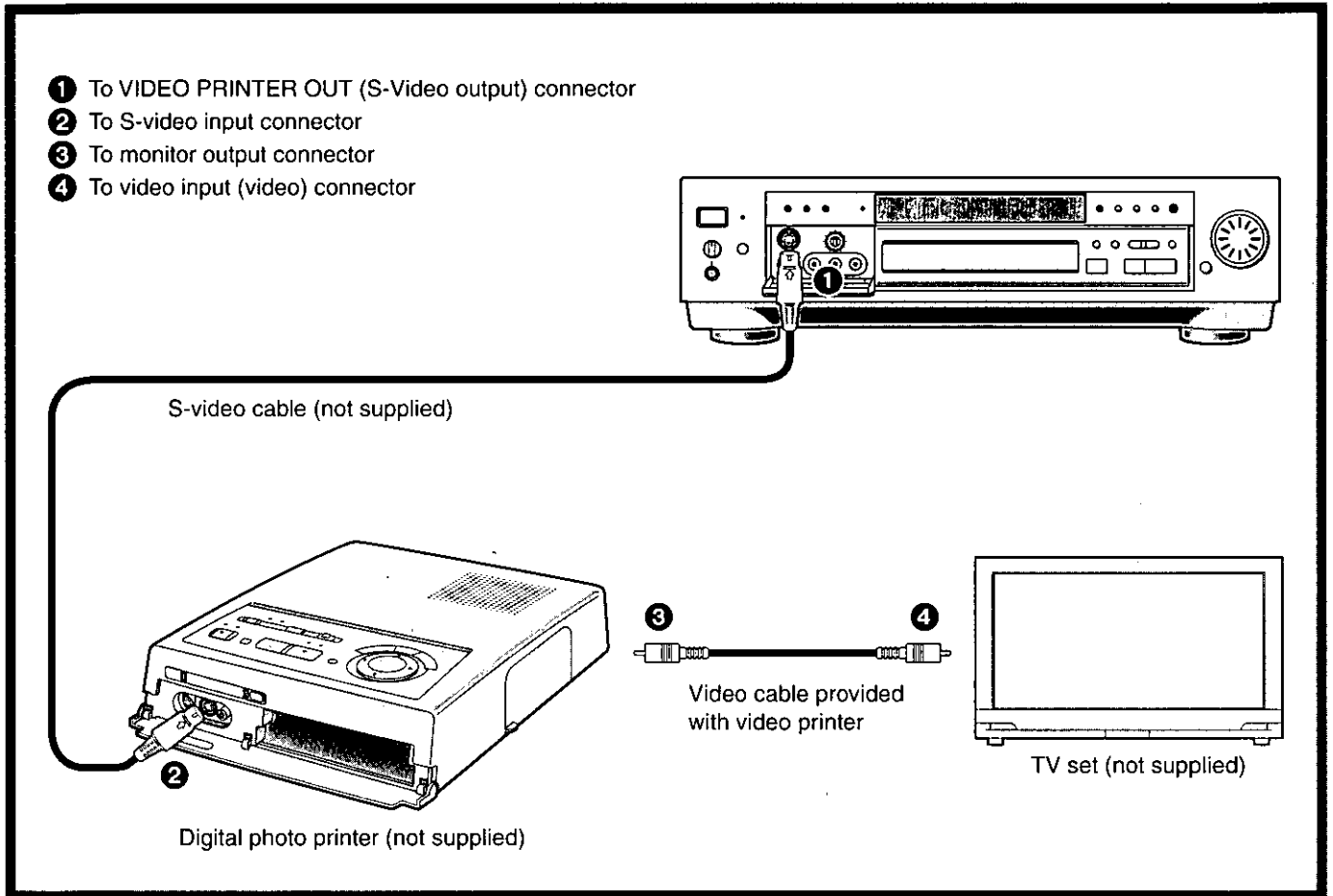
Digital photo printer connections

You can easily any scene(s) if you connect a digital photo printer (optional accessory) to the VIDEO PRINTER OUT (S-video output) connector.

- Before proceeding with the connections, turn off the power of the components and make sure that your hands are dry.
- Read the operating instructions of the digital photo printer.

Connect the components properly in the numerical order below.

- 1 To VIDEO PRINTER OUT (S-Video output) connector
- 2 To S-video input connector
- 3 To monitor output connector
- 4 To video input (video) connector



Note:

- Copyright laws prohibit the use of material printed from sources other than what you have produced yourself or pictures you yourself have shot without the permission of the copyright holders except in cases where that material is to be used for your own personal enjoyment or entertainment.


Changing the initial settings

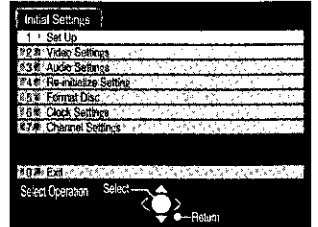
Preparation

- Press [DVD].

1 During stop (TV reception):

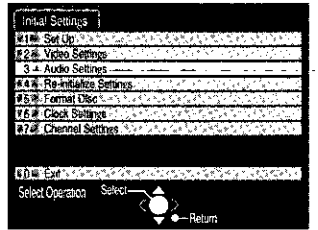
Press [ACTION].

- If the  appears on the TV screen, first press [STOP] and then press [ACTION].



2 Select the item to be set using [▲] and [▼], and press [SELECT]. (Refer to page 109)

- Example where "3 Audio Settings" has been selected

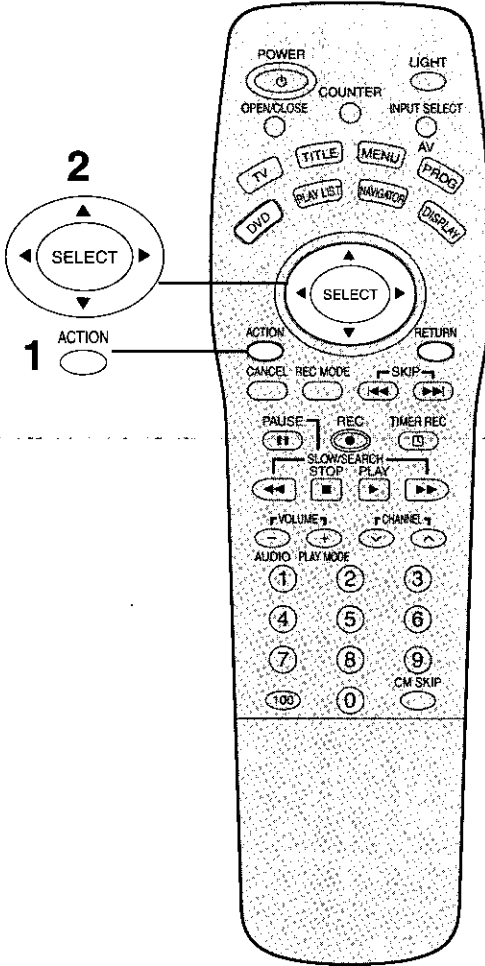


■ To return to the previous menu

Press [RETURN].

Note:

Each menu can also be selected using the numeric buttons. Press the number on the left of the items to be selected.



Initial setting items

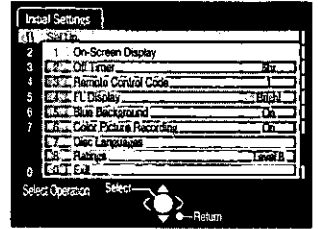
For further details, read the applicable pages.

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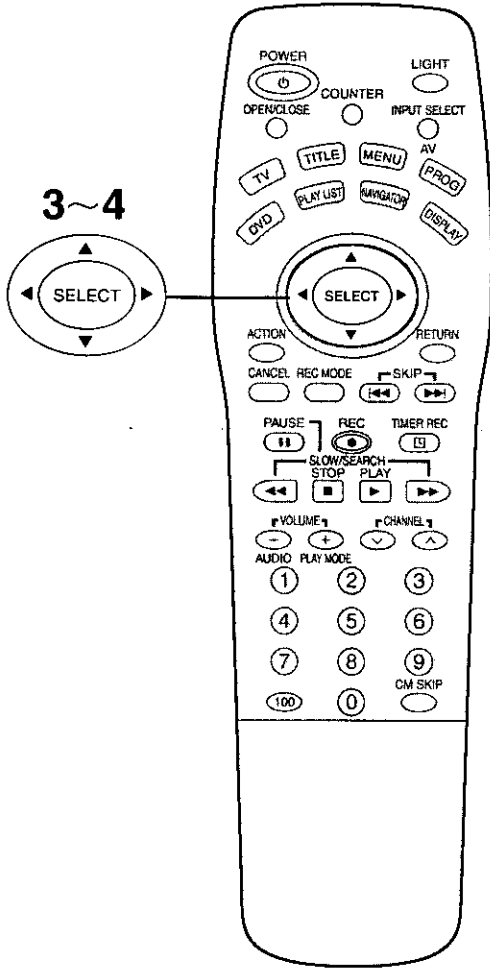
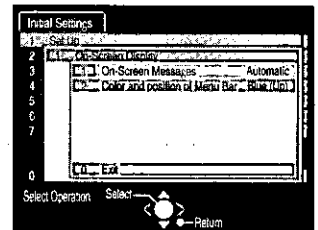
1 Set Up

1. On-Screen Display

3 After performing steps 1 and 2 on p. 108, select "1 On-Screen Display" using [▲] and [▼], and press [SELECT].



4 Select the item to be set using [▲] and [▼], and press [SELECT].



■ 1. On-Screen Messages

1. Automatic (factory setting)

Displayed for just 5 seconds immediately after operation, "PLAY", the counter display, etc. appear on the TV screen.

2. On

"PLAY", the counter display, etc. remain on the TV screen at all time.

3. Off

"PLAY", the counter display, etc. do not appear on the TV screen at any time.

■ 2. Color and Position of Menu Bar

1. Blue (Upper) (factory setting)

2. Violet (Upper)

3. Green (Upper)



Upper: The menu bar is displayed at the top of the TV screen.

4. Blue (Middle)

5. Violet (Middle)

6. Green (Middle)



Middle: The menu bar is displayed slightly lower on the TV screen than with setting 1, 2 and 3.

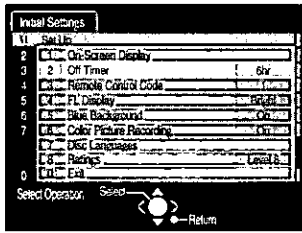
● Select it if part of the top of the screen is missing when setting 1, 2 or 3 is selected.

Note:

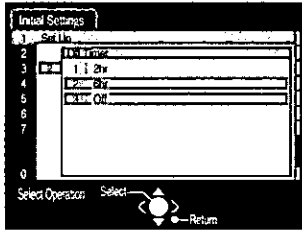
It is useful to move the menu bar when it is blocking an important section of the video image being viewed.

2. Off Timer

- 3** After performing steps 1 and 2 on p. 108, select “2 OffTimer” using [▲] and [▼], and press [SELECT].



- 4** Select the item to be set using [▲] and [▼], and press [SELECT].



1. 2hr

The unit's power is automatically turned off if no operation has been performed for about 2 hours or more.

2. 6hr (factory setting)

The unit's power is automatically turned off if no operation has been performed for about 6 hours or more.

3. Off

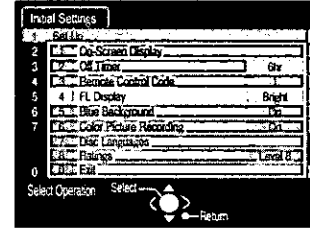
The automatic power-off function is cancelled.

3. Remote Control Code

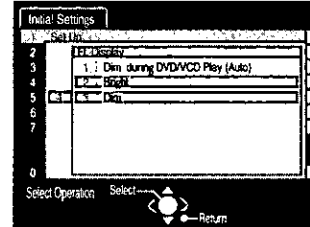
Refer to p. 95-96.

4. FL Display

- 3** After performing steps 1 and 2 on p. 108, select “4 FL Display” using [▲] and [▼], and press [SELECT].



- 4** Select the item to be set using [▲] and [▼], and press [SELECT].



1. Dim during DVD/VCD Play (Auto)

When the power is on, the unit display window is dark only during DVD-RAM, DVD-Video discs or Video CDs. When the power is off, it is dim.

2. Bright (factory setting)

When the power is on, anything shown on the unit display window is bright at all times. When the power is off, it is dim.

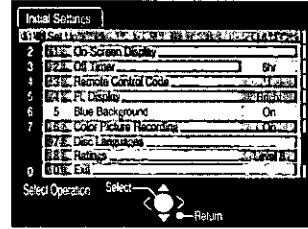
3. Dim

Anything shown on the unit display window is dim at all times regardless of whether the power is on or off.

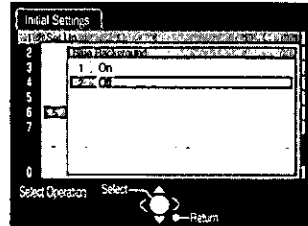
1 Set Up (continued)

5. Blue Background

- 3** After performing steps 1 and 2 on p. 108, select “5 Blue Background” using [▲] and [▼], and press [SELECT].



- 4** Select the item to be set using [▲] and [▼], and press [SELECT].



1. On (factory setting)

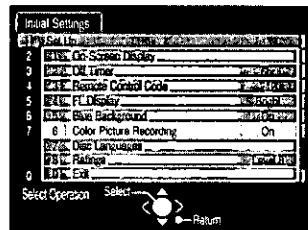
When a channel with no broadcasts is selected or when the signals are extremely weak, a blue screen appears and the sound is muted.

2. Off

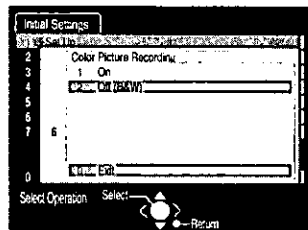
When a channel with no broadcasts is selected or the signals are extremely weak, the blue screen does not appear.

6. Color Picture Recording

- 3** After performing steps 1 and 2 on p. 108: Select “6 Color Picture Recording” using [▲] and [▼], and press [SELECT].



- 4** Select the item to be set using [▲] and [▼], and press [SELECT].

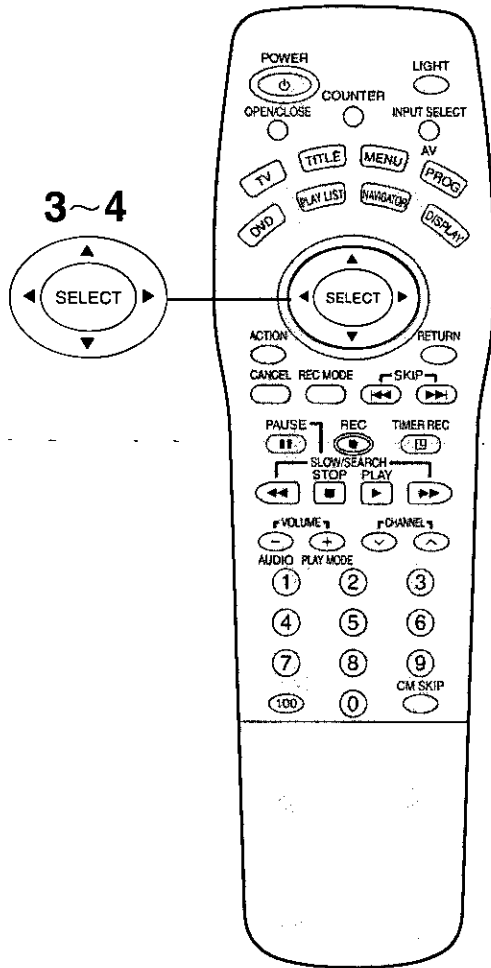


1. On (factory setting)

- For recording in color.

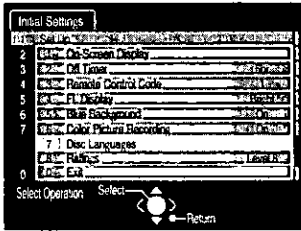
2. Off (B&W)

- For recording in black and white.

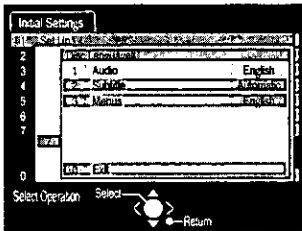


7. Disc languages

- 3** After performing steps 1 and 2 on p. 108, select “7 Disc Languages” using [▲] and [▼], and press [SELECT].



- 4** Select the item to be set using [▲] and [▼], and press [SELECT].



■ 1. Audio

1. English (factory setting)

The sound is heard in English during disc play.

2. French

The sound is heard in French during disc play.

3. Spanish

The sound is heard in Spanish during disc play.

4. Original

The sound is heard in the disc's original language during disc play.

5. Other ****

Select this setting to hear the sound in selected language during disc play. Use the numeric buttons to enter the language's 4-digit code from among the language codes listed (see right).

■ 2. Subtitle

1. Automatic (factory setting)

The subtitle language is automatically set to match the language of the sound.

2. English

The disc is played with subtitles in English.

3. French

The disc is played with subtitles in French.

4. Spanish

The disc is played with subtitles in Spanish.

5. Other ****

Select this setting to play the disc with subtitles in any other language. Use the numeric buttons to enter the language's 4-digit code among the language codes listed (see right).

■ 3. Menu (Disc menus)

1. English (factory setting)

The menu screens appear in English.

2. French

The menu screens appear in French.

3. Spanish

The menu screens appear in Spanish.

4. Other ****

Select this setting to display the menu screens in any other language. Use the numeric buttons to enter the language's 4-digit code among the language codes listed (see below).

List of language codes

6565: Afar	6566: Abkhazian	6570: Afrikaans
6577: Ameharic	6582: Arabic	6583: Assamese
6588: Aymara	6590: Azerbaijani	6665: Bashkir
6669: Byelorussian	6671: Bulgarian	6672: Bihari
6678: Bengali; Bangla	6679: Tibetan	6682: Breton
6765: Catalan	6779: Corsican	6783: Czech
6789: Welsh	6865: Danish	6869: German
6890: Bhutani	6976: Greek	6978: English
6979: Esperanto	6983: Spanish	6984: Estonian
6985: Basque	7065: Persian	7073: Finnish
7074: Fiji	7079: Faroese	7082: French
7089: Frisian	7165: Irish	7168: Scots Gaelic
7176: Galician	7178: Guarani	7185: Gujarati
7265: Hausa	7273: Hindi	7282: Croatian
7285: Hungarian	7289: Armenian	7365: Interlingua
7378: Indonesian	7383: Icelandic	7384: Italian
7387: Hebrew	7465: Japanese	7473: Yiddish
7487: Javanese	7565: Georgian	7575: Kazakh
7576: Greenlandic	7577: Cambodian	7578: Kannada
7579: Korean	7583: Kashmiri	7585: Kurdish
7589: Kirghiz	7665: Latin	7678: Lingala
7679: Laotian	7684: Lithuanian	7686: Latvian; Lettish
7771: Malagasy	7773: Maori	7775: Macedonian
7776: Malayalam	7778: Mongolian	7779: Moldavian
7782: Marathi	7783: Malay	7784: Maltese
7789: Burmese	7865: Nauru	7869: Nepali
7876: Dutch	7879: Norwegian	7982: Oriya
8065: Punjabi	8076: Polish	8083: Pashto, Pushto
8084: Portuguese	8185: Quechua	8277: Rhaeto-Romance
8279: Romanian	8285: Russian	8365: Sanskrit
8368: Sindhi	8372: Serbo-Croatian	8373: Singhalese
8375: Slovak	8376: Slovenian	8377: Samoan
8378: Shona	8379: Somali	8381: Albanian
8382: Serbian	8385: Sundanese	8386: Swedish
8387: Swahili	8465: Tamil	8469: Telugu
8471: Tajik	8472: Thai	8473: Tigrinya
8475: Turkmen	8476: Tagalog	8479: Tonga
8482: Turkish	8484: Tartar	8487: Twi
8575: Ukrainian	8582: Urdu	8590: Uzbek
8673: Vietnamese	8679: Volapük	8779: Wolof
8872: Xhosa	8979: Yoruba	9072: Chinese
9085: Zulu		

Notes:

- If the desired language or sound is not heard, it means that the sound or subtitles selected has not been recorded on the disc.
- If you want to hear the sound (or read the subtitles) in the language of your choice from the very start and if you preset the language ahead of time, the language setting will take precedence when the power is turned on or the disc is changed. However, if the selected language is not recorded on the disc, the language designated by the disc will be heard (or seen). With some DVD discs, the language designated by the disc takes precedence over the unit's language setting.
- After the setting has been changed, it may take a few seconds for the new language to be displayed.

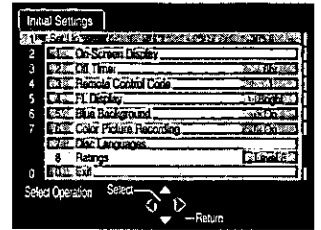
1 Set Up (continued)

8. Ratings (viewing and listening restrictions)

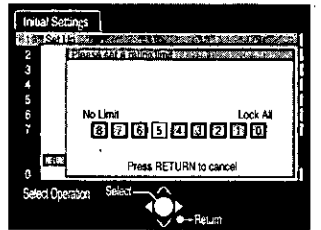
By setting the restriction level, disc play can be prohibited unless a password is entered so that violent scenes can be skipped or replaced with other scenes. These restrictions are also known as parental controls. The actual restriction method used differs from one disc to another.

■ Setting the parental controls

3 After performing steps 1 and 2 on p. 108, select "8 Ratings" using [▲] and [▼], and press [SELECT].



4 Select the level using [◀] and [▶], and press [SELECT].



Level 8 (factory setting)

All discs can be played.

Levels 7 to 1

Disc play is prohibited for those discs (with adult themes or violence) on which a restriction level is recorded.

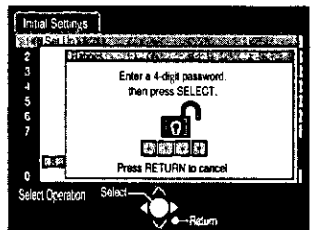
Level 0

Play is prohibited for all discs.

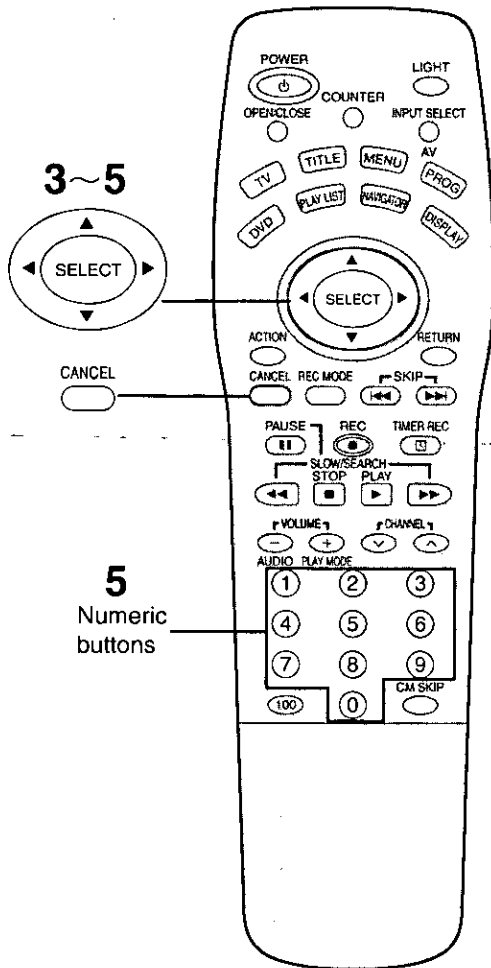
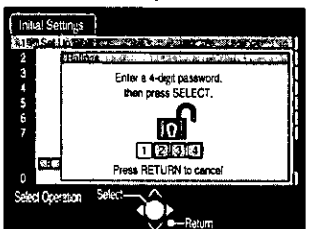
- Discs with adult themes will be played if they have no restriction levels. Select "0" to restrict playback of these discs.

5 Enter the 4-digit password using the numeric buttons, and press [SELECT].

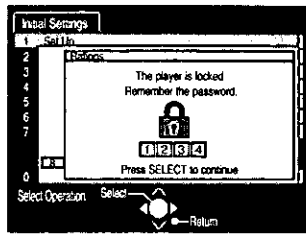
- Press [CANCEL] if the wrong number has been entered.
- Do not forget your password.



- Example where password "1234" has been input

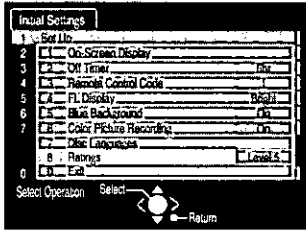


- When [SELECT] is pressed, the lock is engaged.



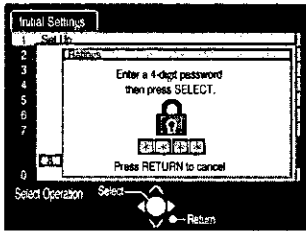
■ Changing the parental controls

- 3 After performing steps 1 and 2 on p. 108, select “8 Ratings” using [▲] and [▼], and press [SELECT].

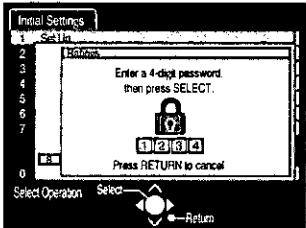


- 4 Only if a level from 7 to 0 had been set: Enter the 4-digit password using the numeric buttons, and press [SELECT].

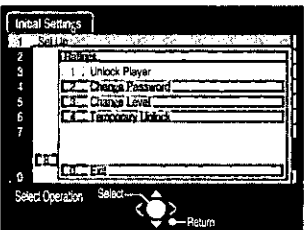
- Press [CANCEL] if the wrong number has been entered.



- Example where password “1234” has been input



- 5 Select “Change Password” and press [SELECT]. Enter new password and press [SELECT].



■ 1. Unlock Player

This is for releasing the viewing/listening restriction and returning to the setting to level 8.

- The “The player is now unlocked” message appears on the screen.

■ 2. Change Password

- This enables the password, which was input as described on the previous page, to be changed. Input the new 4-digit password using the numeric buttons, and press [SELECT].

■ 3. Change Level

- This enables the restriction level to be changed. Select the new level using [◀] and [▶], and press [SELECT].

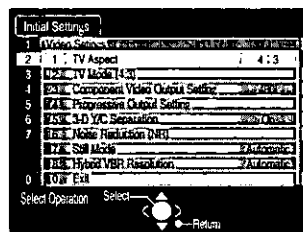
■ 4. Temporary Unlock

- This maintains the lock release (level 8) until the power is turned off or the disc is removed.

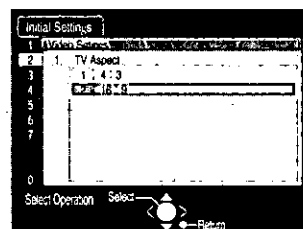
2 Video Settings

1. TV Aspect

- 3** After performing steps 1 and 2 on p. 108, select "1 TV Aspect" using [▲] and [▼], and press [SELECT].



- 4** Select the item to be set using [▲] and [▼], and press [SELECT].



1 [4:3] (factory setting)

Select this when the unit has been connected to a conventional size TV set (4:3 aspect ratio).

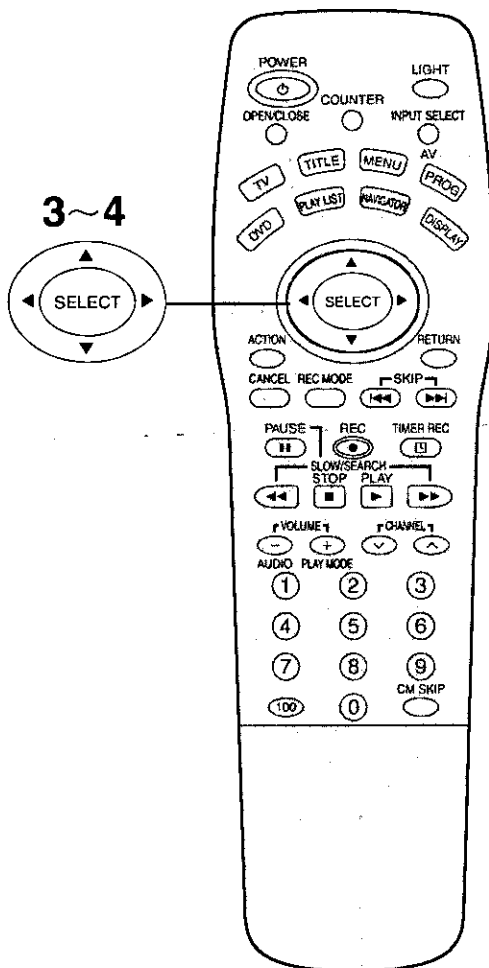
- The disc is played in accordance with "2. TV Mode (4:3)" (see next page).
- Wide-screen disc programs with the pan & scan specification are played on the pan & scan screen (where the left and right edges are cut off).
- Wide-screen disc programs without the pan & scan specification are played on the letter-box screen (where black bands appear at the top and bottom).



2 [16:9]

Select this when the unit has been connected to a wide-screen TV set (16:9 aspect ratio).

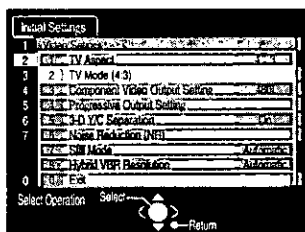
- Wide-screen disc programs are played on the full screen. (Set the wide-screen TV screen mode to "full.")



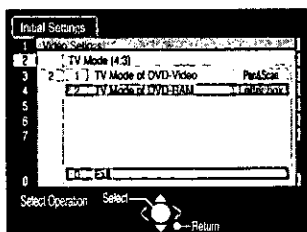
2. TV Mode (4:3)

This is set when the unit has been connected to a conventional size TV set (with a 4:3 aspect ratio).

- 3 After performing steps 1 and 2 on p. 108, select “2 TV Mode (4:3)” using [▲] and [▼], and press [SELECT].



- 4 Select the item to be set using [▲] and [▼], and press [SELECT].



1. TV Mode of DVD-Video

1 Pan & Scan (factory setting)

This is selected to play wide-screen disc programs on the pan & scan screen (where the left and right edges are cut off).

- However, programs without the pan & scan designation are played on the letterbox screen.

2 Letterbox

This is selected to play wide-screen disc programs on the letter-box screen (where black bands appear at the top and bottom).

2. TV Mode of DVD-RAM

1 4:3

The programs are played exactly as recorded.

2 Pan & Scan

This is selected to play wide-screen disc programs on the pan & scan screen (where the left and right edges are cut off).

- However, programs without the pan & scan designation are played on the letterbox screen.

3 Letter box (factory setting)

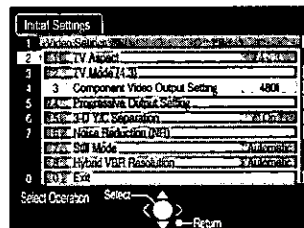
This is selected to play wide-screen disc programs on the letter-box screen (where black bands appear at the top and bottom).

3. Component Video Output Setting

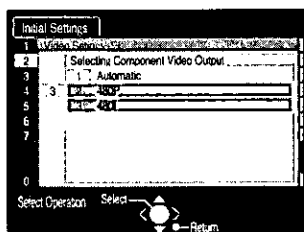
Conventional video signals (NTSC) were called 480I (1: interlace scanning) signals, the high-density video signals which have twice as many scanning lines are called 480P (progressive scanning) signals.

To enjoy progressive video presentations using the 480P video output connectors (Y, P_B, P_R), connect a high-definition TV or 3-tube projector, etc. to the 480P video out connectors, and perform the following settings.

- 3 After performing steps 1 and 2 on p. 108, select “3 Component Video Output Setting” using [▲] and [▼], and press [SELECT].



- 4 Select the item to be set using [▲] and [▼], and press [SELECT].



1 Automatic

During DVD-RAM disc, DVD-Video disc or video CD play, the progressive video signals are output; at all other times (TV broadcasts, etc.), the interlace video signals are output.

2 480P

Progressive video signals are output for all the pictures when a video unit equipped with component video input connectors has been connected to the component video output connectors.

- The “REC”, the counter display and other on-screen displays will not appear on the TV screen in progressive mode. Furthermore, blue background will not appear when no video signal is present and progressive mode is being used.

3 480I (factory setting)

Interlace video signals are output for all the pictures.

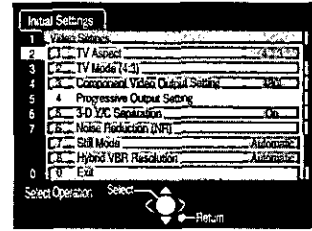
Note:

- The 480P output of this unit supports Macro Vision. Panasonic televisions equipped for 480P input can play back these signals normally; however, with some televisions the top section of the screen may appear distorted. There are also occasions when the picture does not appear, etc. In this case, please consult the manufacturer of the television being used.

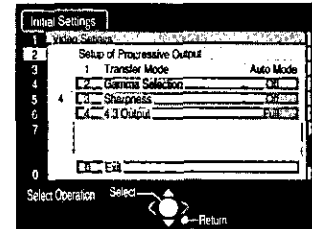
2 Video Settings (continued)

4. Progressive Output Setting

- 3** After performing steps 1 and 2 on p. 108, select “4 Progressive Output Setting” using [▲] and [▼], and press [SELECT].



- 4** Select the item to be set using [▲] and [▼], and press [SELECT].



■ 1. Transfer Mode

1 Auto Mode (factory setting)

The video information recorded on the DVD disc is automatically identified as a film or video presentation, and converted to a progressive output using the best-suited method.

- The [DIRECT CINEMA PROGRESSIVE] lamp lights when signals are output in the film mode.

2 Video Mode

The video information recorded on the DVD disc is filtered and converted to a progressive output.

- This mode is suitable for playing DVD discs recorded as video presentations.

3 Film Mode

When playing a DVD disc recorded as a film presentation, each frame of the film is converted into separate 3-frame and 2-frame progressive video signals in this mode.

- This mode is suited for film presentations since the progressive output can be utilized to the fullest. (The [DIRECT CINEMA PROGRESSIVE] lamp lights.)
- The picture may be disrupted when playing back video material. In this case, set the unit to “2 Video Mode.”
- Even if the Initial Settings of “1 Set Up” → “1 On-Screen Display” → “1 On-Screen Messages” is set to “1 Automatic” or “2 On,” “REC” and the counter display will not appear on the television screen.

■ 2. Gamma Selection

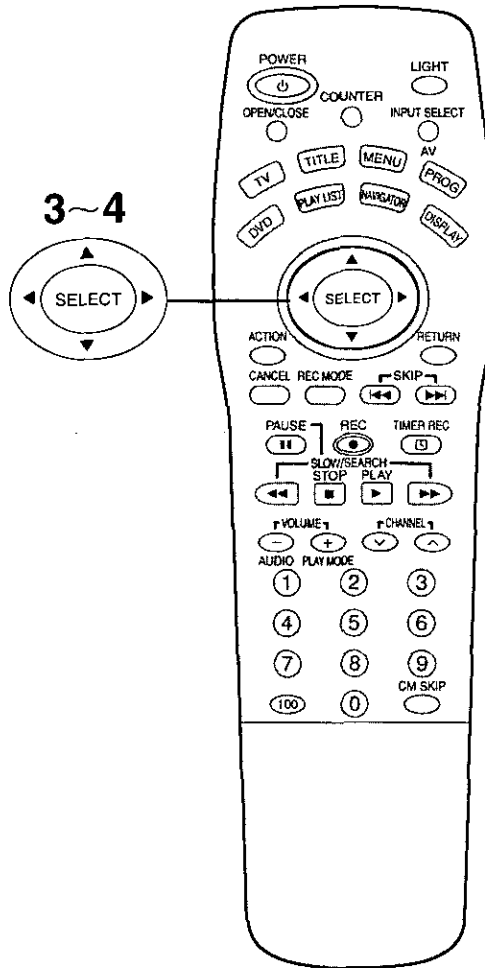
With movies containing numerous shady or shadowy scenes, this setting boosts the brightness of the intermediate tones while maintaining the brightness of the blackest and whitest parts on the TV screen: this prevents the loss of details in the dark scenes and helps to reproduce pictures with best details.

1 Light (low compensation)

2 Medium (medium compensation)

3 Dark (high compensation)

4 Off (factory setting)



■3. Sharpness (outline correction)

This is for correcting the sharpness of the images. This works only if you are using the "COMPONENT VIDEO OUT" terminals.

- 1 Slight
- 2 Medium
- 3 Strong
- 4 Off (factory setting)

■4. 4:3 Output

1 Full (factory setting)

This is used when playing wide-screen programs.

- Wide-screen programs are played on the full screen; 4:3 video programs are played on a screen that is extended toward the left and right.

2 Normal

This is used when playing 4:3 video programs.

- The programs are played on a screen that has black bands on both the left and right sides. Wide-screen programs without the pan & scan designation are played on a screen with black bands at the top and bottom and left and right.

■DVD disc video information

There are generally two kinds of DVD disc video information.

•Film presentations

The film images are recorded at a rate of 24 frames/second.

•Video presentations

The video information is recorded at 30 frames/second.

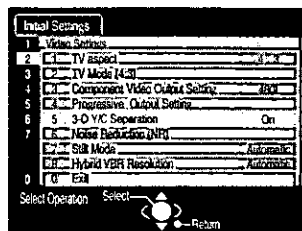
- Some movies are recorded in the form of video presentations. If DVD programs like these are played in the auto mode, the mode is automatically switched to video. (The [DIRECT CINEMA PROGRESSIVE] lamp does not light.)

Notes:

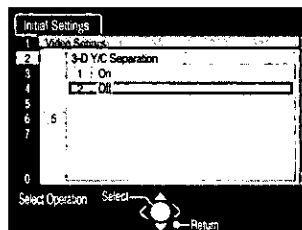
- Some kinds of DVD discs have both film presentation and video presentation recordings. When they are played in the auto mode, the picture may occasionally break up. If this happens, change the transfer mode setting to video.
- Output system (progressive/interlace) flags have been recorded on some DVD discs for frame-by-frame playback. Depending on the disc concerned, some of these flags may not have been recorded properly. Problem-free play of these discs is possible using an interlace system player. However, when they are played in the auto or film mode using this unit's progressive output, some of the pictures will shake and appear double. If this happens, change the transfer mode to video.
- "3 3-D NR" (p. 121) will be automatically disabled only when 480P video signals are output while playing discs in the "1 Auto mode" or "3 Film Mode". This is done in order to optimize the progressive conversion of material recorded on DVD discs as film presentations. To give priority to the 3-dimensional NR effect, select "2 Video Mode."
- When outputting images with macrovision signals, the images may not be output properly, depending on the TV being used.

5. 3-D Y/C Separation

- 3 After performing steps 1 and 2 on p. 108, select "5 3-D Y/C Separation" using [▲] and [▼], and press [SELECT].



- 4 Select the item to be set using [▲] and [▼], and press [SELECT].



1 On (factory setting)

Use this setting when the Y (luminance) signals and C (chrominance) signals received from the broadcast station are to be separated precisely and recorded with the noise level minimized.

2 Off

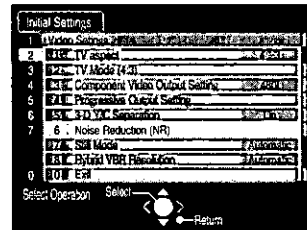
This is for reducing the lag that occurs when recording fast-moving images.

2 Video Settings (continued)

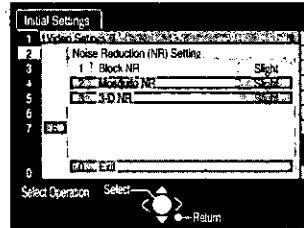
6. Noise Reduction (NR)

The three noise reduction settings performed as described below can be turned ON or OFF using [DNR] on the unit.

3 After performing steps 1 and 2 on p. 108, select "6 Noise Reduction (NR)" using [▲] and [▼], and press [SELECT].



4 Select the item to be set using [▲] and [▼], and press [SELECT].



■ 1. Block NR

The encoded noise occurring at the boundaries between neighboring blocks is detected pixel-by-pixel and compensated for.

1 Slight (factory setting)

2 Strong

3 Off

- This noise reduction effect is boosted at the Strong setting. Use the Slight setting if the contours of the playback images become fuzzy at the Strong setting.
- Since the unit is designed to conduct processing for playing back the images more clearly, the picture quality may conversely deteriorate when the unit is used as a player for editing on another recorder. In this case, set to "3 Off".

■ 2. Mosquito NR

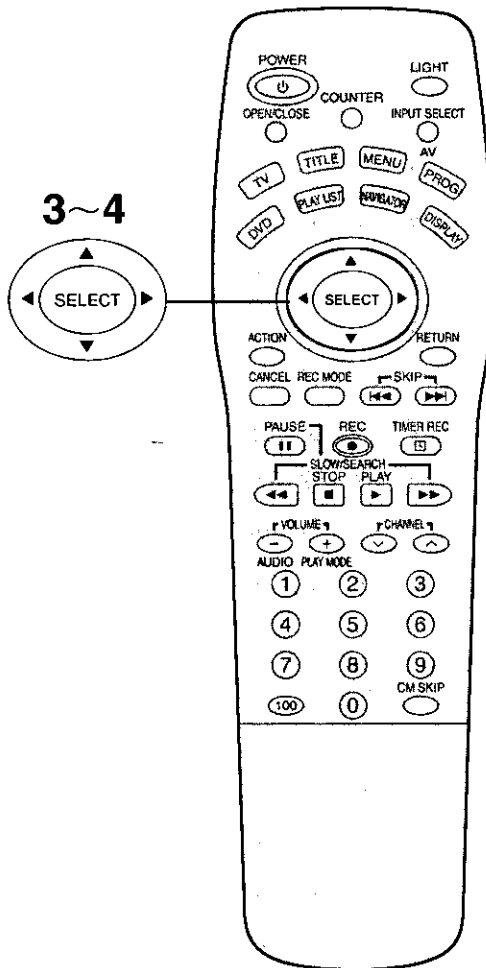
The encoding distortion along the edges of the images is detected pixel-by-pixel and compensated for.

1 Slight (factory setting)

2 Strong

3 Off

- This noise reduction effect is boosted at the Strong setting. Use the Slight setting if the contours of the playback images become fuzzy at the Strong setting.
- Since the unit is designed to conduct processing for playing back the images more clearly, the picture quality may conversely deteriorate when the unit is used as a player for editing on another recorder. In this case, set to "3 Off."



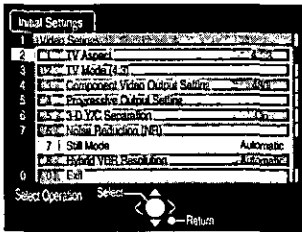
■ 3. 3-D NR

- 1 Slight (factory setting)
- 2 Medium
- 3 Strong
- 4 Off

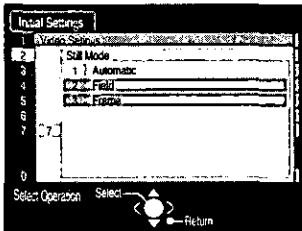
- This effect eliminates the luminance noise (flicker and roughness) and chrominance noise (blur and roughness) contained in the video signals to ensure playback with sharper and clearer pictures. Reduce the level if the contours of the playback images become fuzzy.
- Since the unit is designed to conduct processing for playing back the images more clearly, the picture quality may conversely deteriorate when the unit is used as a player for editing on another recorder. In this case, set to "4 Off."

7. Still Mode

- 3 After performing steps 1 and 2 on p. 108, select "7 Still mode" using [▲] and [▼], and press [SELECT].



- 4 Select the item to be set using [▲] and [▼], and press [SELECT].



1 Automatic (factory setting)

- The still field mode or still frame mode is automatically selected.

2 Field

- The still field mode is set. Select this when the picture shakes in "1 Automatic" setting.

3 Frame

- The still frame mode is set. Select this when fine print or detailed patterns are not clearly visible in "1 Automatic" setting.

■ Still Field and Still frame modes

(With 480i = interlace output)

• Still Field (containing 240 scanning lines)

A "field" refers to the video information (signals) in one-half of a frame. In a regular TV set, 1 frame (screen) consists of 2 fields.

• Still Field

Since only one field (half of the video information) is shown on the TV screen, the pictures appear rough to the eye but does not shake.

• Frame (containing 480 scanning lines)

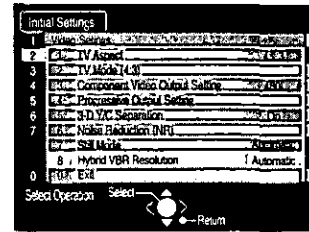
A "frame" refers to the total area occupied by each picture on the TV screen.

• Still Frame

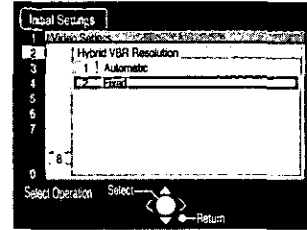
Two fields are alternatively shown on the TV screen. The picture shakes but the resulting picture quality is superior to the still field pictures. In progressive output, the still frame pictures do not shake.

8. Hybrid VBR (variable bit rate) Resolution

- 3 After performing steps 1 and 2 on p. 108, select "8 Hybrid VBR Resolution" using [▲] and [▼], and press [SELECT].



- 4 Select the item to be set using [▲] and [▼], and press [SELECT].



1 Automatic (factory setting)

During recording, the VBR recording resolution is switched automatically.

- By selecting the optimal resolution, the block noise occurring during MPEG compression can be minimized.

2 Fixed

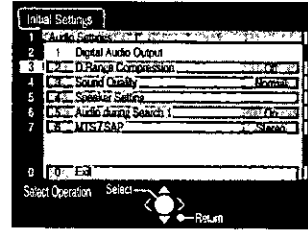
The VBR (variable bit rate) recording resolution is not switched automatically.

- This enables recording at a fixed resolution, and this setting is therefore selected in cases when the resolution is not to be reduced.

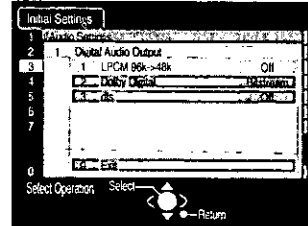
3 Audio Settings

1. Digital Audio Output

- 3** After performing steps 1 and 2 on p. 108, select “1 Digital Audio Output” using [▲] and [▼], and press [SELECT].



- 4** Select the item to be set using [▲] and [▼], and press [SELECT].



■ 1. LPCM 96k → 48k

1 On

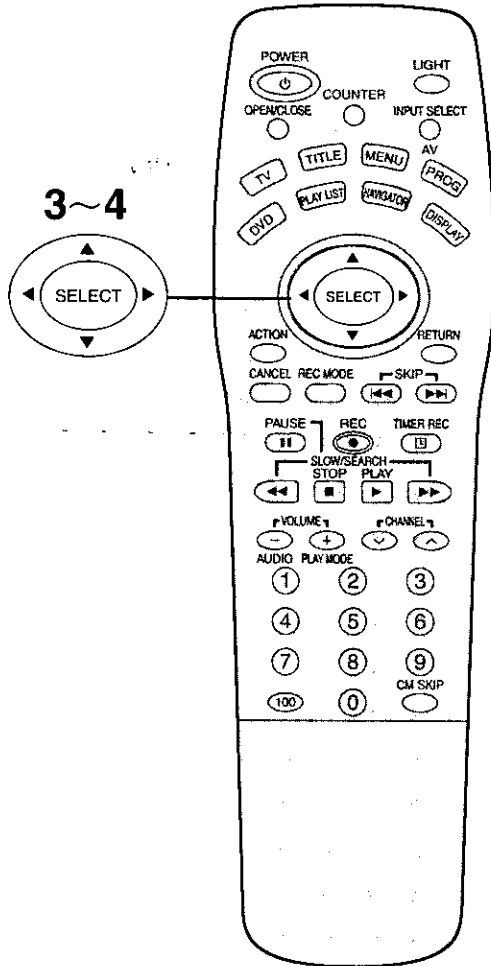
When playing DVD discs recorded using the 96 kHz linear PCM system, the signals are converted to a 48 kHz/16-bit format and output from the digital audio output connectors. When playing DVD discs recorded with 20 bits or 24 bits using the 48 kHz linear PCM system, the signals are converted to a 48 kHz/16-bit format and output from the digital audio output connectors.

- Due to copyright restrictions, the PCM audio digital output is not greater than 48 kHz/16 bits.

2 Off (factory setting)

When playing DVD discs recorded using the 96 kHz linear PCM system, the signals are not output from the digital audio output connectors. When playing DVD discs recorded using the 48 kHz linear PCM system, the signals are converted to a 48 kHz/16-bit format and output from the digital audio output connectors.

- In the case of DVD discs with no copyright protection, the signals are output using their original audio recording system.



■ 2. Dolby Digital

1 Bitstream (factory setting)

When playing DVD discs recorded using Dolby Digital, the Dolby Digital bitstream sound is output from the digital audio output connectors.

- This setting is selected when a Dolby Digital decoder is to be connected.

2 PCM

When playing DVD discs recorded using Dolby Digital, the signals are converted to the 48 kHz/16-bit PCM (2 channels) format and output from the digital audio output connectors.

■ 3. dts

1 Bitstream

When playing DVD discs recorded using dts, the dts bitstream sound is output from the digital audio output connectors.

- This setting is selected when a dts decoder is to be connected.

2 off (factory setting)

When playing DVD discs recorded using dts, the sound is not output from the digital audio output connectors.

■ Recommended digital output settings

The digital output settings differ depending on the component connected to the digital audio output connectors.

• When not connecting a component to the digital audio output connectors

1. LPCM 96 → 48k → 2 Off
2. Dolby Digital → 1 Bitstream
3. dts → 2 off

• When connecting an amplifier, which is equipped with a digital audio input connector but which does not contain a Dolby Digital decoder/dts decoder, to the digital audio output connectors

1. LPCM 96 → 48k → 1 On (*1)
2. Dolby Digital → 2 PCM (*2)
3. dts → 2 Off (*2)

• When connecting a Dolby Digital decoder to the digital audio output connectors

1. LPCM 96 → 48k → 1 On (*1)
2. Dolby Digital → 1 Bitstream
3. dts → 2 off

• When connecting a Dolby Digital decoder/dts decoder to the digital audio output connectors

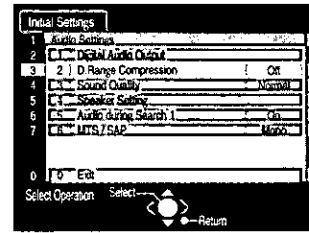
1. LPCM 96 → 48k → 1 On (*1)
2. Dolby Digital → 1 Bitstream
3. dts → 1 Bitstream

*1 As when the digital audio output connectors are used, the sound from the unit's audio output connectors is converted to the 48 kHz/16-bit format. To enjoy high sound quality, do not connect an amplifier, decoder or other component to the digital audio output connectors (set "1 LPCM 96 → 48k" → "2 Off"). Instead, connect the amplifier directly to the audio output connectors.

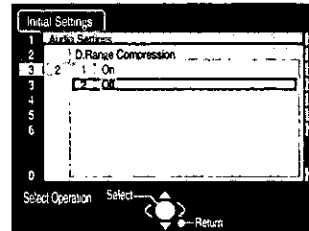
*2 Setting "2 Dolby Digital" → "2 PCM" and "3 dts" → "1 Bitstream" when a component other than a Dolby Digital decoder/dts decoder is connected may generate a level of noise that may be harmful to your eardrums, and the speakers.

2. D.Range Compression

- 3 After performing steps 1 and 2 on p. 108, select "2 D.Range Compression" using [▲] and [▼], and press [SELECT].



- 4 Select the item to be set using [▲] and [▼], and press [SELECT].



1 On

Setting the audio dynamic range of the sound, which is to be output when playing DVD discs recorded using Dolby Digital, to narrow.

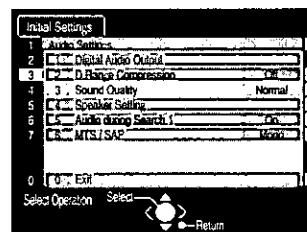
- Dynamic range compression is a function that narrows down the dynamic range (playback level range) of the audio signals. It is used to keep the volume level down when, for instance, watching movies late at night.

2 Off (factory setting)

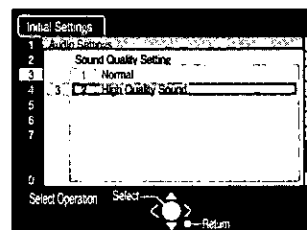
- When playing a DVD disc recorded using Dolby Digital, set the volume level of the sound which is to be output to the reference level.

3. Sound Quality

- 3 After performing steps 1 and 2 on p. 108, select "3 Sound Quality" using [▲] and [▼], and press [SELECT].



- 4 Select the item to be set using [▲] and [▼], and press [SELECT].



1 Normal (factory setting)

This setting is used when performing video (audio) recordings at the standard sound quality.

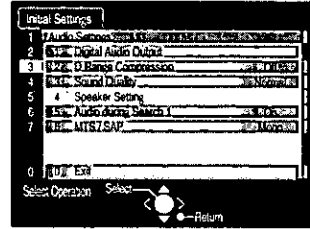
2 High Quality Sound

This setting is used when performing video (audio) recordings with priority given to the sound quality.

3 Audio Settings (continued)

4. Speaker Setting

- 3** After performing steps 1 and 2 on p. 108, select "4 Speaker Setting" using [▲] and [▼], and press [SELECT].



- 4** Select the item to be set using [◀], [▲], [▼] and [▶], and press [SELECT]. Then select the detailed setting using [▲] and [▼], and press [SELECT].

■ Speaker modes

Set the speaker sizes and whether the speakers are connected or not.

Front speaker, left (L)

Connected "large" (factory setting) ↔ Connected "small"

Front speaker, right (R)

Connected "large" (factory setting) ↔ Connected "small"

Center speaker

Not connected (factory setting) ↔ Connected "large" ↔ Connected "small"

Sub-woofer

Not connected (factory setting) ↔ Connected

Surround speaker, left (SL)

Not connected (factory setting) ↔ Connected "large" ↔ Connected "small"

Surround speaker, right (SR)

Not connected (factory setting) ↔ Connected "large" ↔ Connected "small"

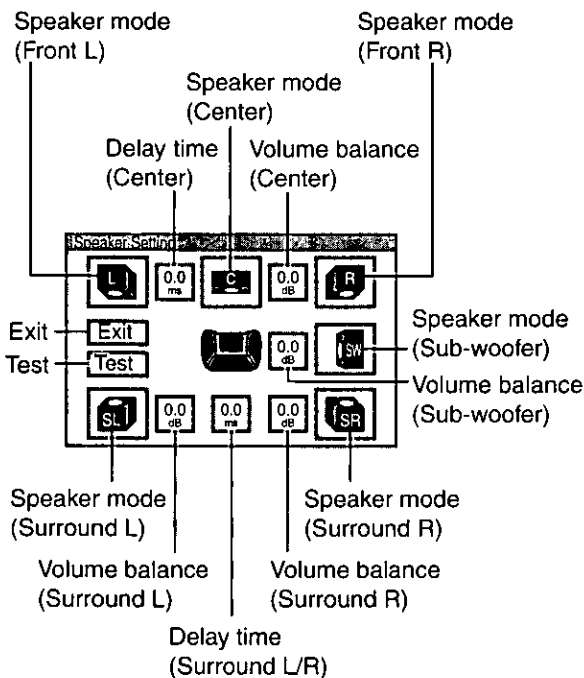
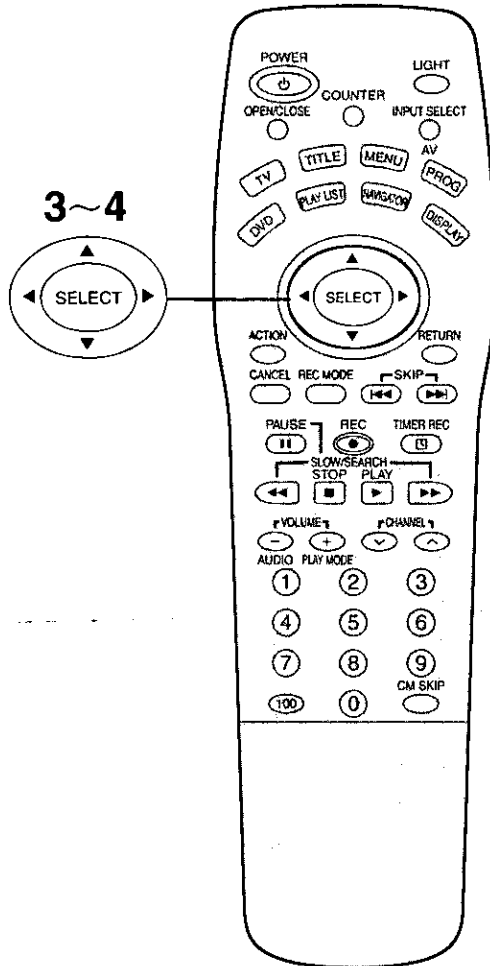
Display example (for surround, left)

Not connected Connected "large" Connected "small"



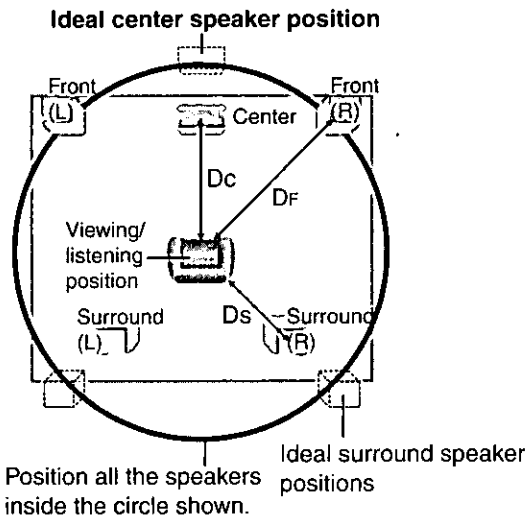
- Make the large/small selection using the general principle that "large" can reproduce frequencies of 100 Hz and below whereas "small" cannot.

- When "Not connected" is selected for the sub-woofer, front speakers capable of reproducing frequencies of 100 Hz and below are recommended.



■Delay time

This compensates for variations in the distance between the viewing/listening position and speakers. The ideal layout for Dolby Digital 3/2.1 channel surround sound is for the distance to be the same between the viewing/listening position and each of the speakers except for the sub-woofer. By setting the delay time to delay the time at which the sound is delivered from the center speaker and surround speakers, the sound from all the speakers will reach the viewing/listening position at the same time. (This time cannot be adjusted for dts.)



Center speaker

Use the 0 ms setting if distance D_f in the above figure is shorter than or equal to distance D_c .

Distances $D_f - D_c$	Setting
Approx. 1½ feet (50 cm)	1.3 ms
Approx. 3 feet (100 cm)	2.6 ms
Approx. 5 feet (150 cm)	3.9 ms
Approx. 6 feet (200 cm)	5.3 ms

Surround speakers

Use the 0 ms setting if distance D_f in the above figure is equal to distance D_s .

Distances $D_f - D_s$	Setting
Approx. 6 feet (200 cm)	5.3 ms
Approx. 12 feet (400 cm)	10.6 ms
Approx. 18 feet (600 cm)	15.9 ms

■Test (volume balance adjustment)

When "Test" is selected, a test signal that sounds like water rushing is delivered clockwise in the following sequence starting from the front left speaker.

Front (L) → Center → Front (R) → Surround (R) → Surround (L) → Front (L) ...

Using the front speaker volume level as a reference, adjust the volume of the sound delivered through the other speakers to the same level.

To adjust the volume level

Use [▲] and [▼] to adjust the volume at each speaker when the test sound is delivered through it. (While the volume at one speaker is being adjusted, the test signal will not move to the other speakers.)

To stop the test signal

Press [SELECT].

To adjust the sub-woofer volume

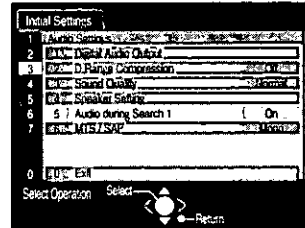
After hearing some actual sound (From a DVD), use [▲] and [▼] to adjust the volume balance of the sub-woofer.

■To exit the settings

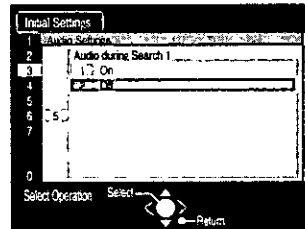
Select "Exit" using [◀], [▲], [▼] and [▶], and press [SELECT].

5. Audio during Search 1

3 After performing steps 1 and 2 on p. 108, select "5 Audio during Search 1" using [▲] and [▼], and press [SELECT].



4 Select the item to be set using [▲] and [▼], and press [SELECT].



Select whether sound is to be heard during forward search 1 (when [▶▶●●●] appears on the TV screen).

- This setting is for DVD-RAM discs and DVD-Video discs only. With CDs, the sound is always heard during forward search.
- With some discs, the sound is not heard when this setting is selected.

1 On (factory setting)

Sound is heard.

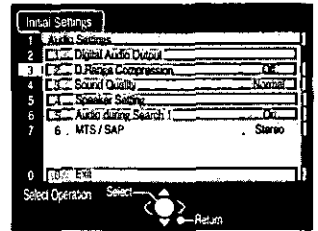
2 Off

Sound is not heard.

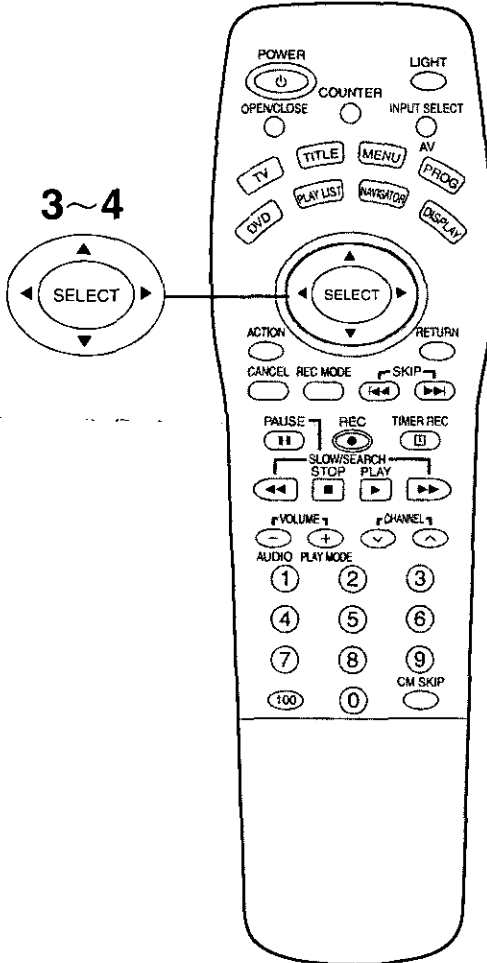
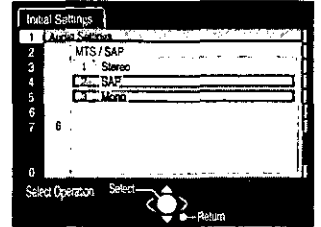
3 Audio Settings (continued)

6. MTS/SAP

- 3** After performing steps 1 and 2 on p. 108, select "6 MTS/SAP" using [▲] and [▼], and press [SELECT].



- 4** Select the item to be set using [▲] and [▼], and press [SELECT].



The table below shows the TV broadcast type, MTS settings, and audio recording patterns.

TV Broadcast	MTS Setting	Recording Sound	
		L	R
Mono	Stereo	Mono	Mono
	SAP	Mono	Mono
	Mono	Mono	Mono
Stereo	Stereo	L	R
	SAP	L+R (Mixed)	L+R (Mixed)
Mono and SAP	Stereo	L+R (Mixed)	L+R (Mixed)
	Mono	L+R (Mixed)	L+R (Mixed)
Stereo and SAP	Stereo	L+R (Mixed)	SAP
	SAP	L+R (Mixed)	SAP
	Mono	L+R (Mixed)	L+R (Mixed)

MONO Position

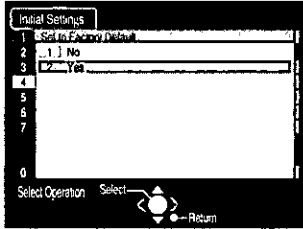
If the sound of a Stereo or SAP broadcast is impaired by noise due to weak reception, set MTS to MONO.

To resume stereophonic recording, set MTS to Stereo or SAP.

4 Re-initialize Setting (Restoring the factory setting)

After performing step 1 on p. 108, select "4 Re-initialize Setting" using [▲] and [▼], and press [SELECT].

3 Select the item to be set using [▲] and [▼], and press [SELECT].



1 No

This keeps in place whatever changes have been made to the items in Settings "1 Set Up," "2 Video Settings" and "3 Audio Settings".

2 Yes

This returns the settings changed in "1 Set Up," "2 Video Settings" and "3 Audio Settings" to the factory settings.

- However, the settings made for "8 Ratings" of "1 Set Up" in the Initial Settings and the input password will not be restored to their initial settings.

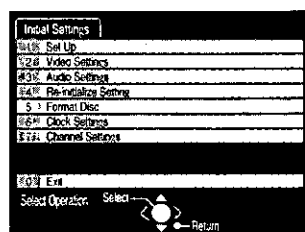
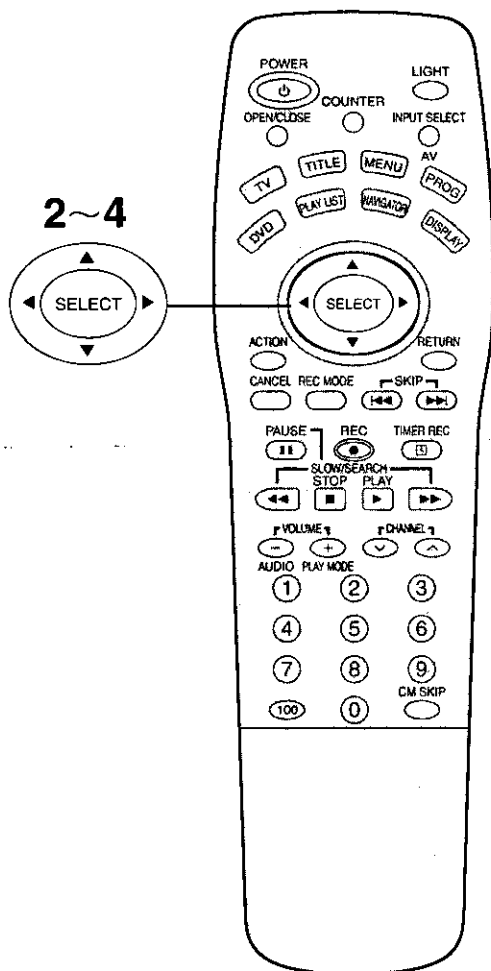
5 Format Disc

Some DVD-RAM discs for audio-video applications sold on the market are not formatted. This setting enables these discs to be formatted so that they can be used by this unit for recording.

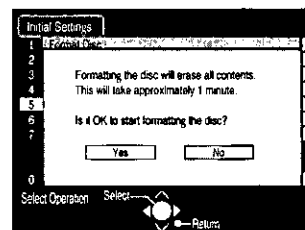
- This unit automatically detects the disc's logical format and physical format, and formats the disc. For this reason, it takes some time (max. 70 minutes) for a disc to be formatted.

- When a disc is formatted, all its recordings are erased and cannot be restored. Be sure to check the disc contents before formatting the disc.

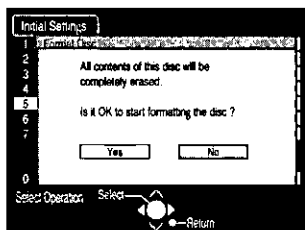
2 After performing step 1 on p. 108, select "5 Format Disc" using [▲] and [▼], and press [SELECT].



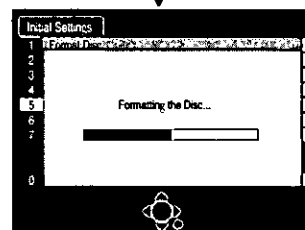
3 Select "Yes" using [◀], and press [SELECT].



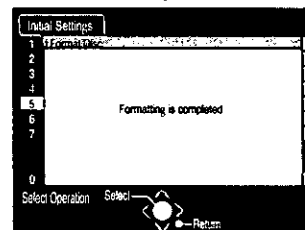
4 Select "Yes" using [◀], and press [SELECT].



- Disc formatting now commences.



- When formatting is completed, the "Formatting is completed" message appears on the screen.



■ To stop the disc formatting

Select "No" in step 3 or 4, and press [SELECT].

- When "Yes" is selected in step 4 and [SELECT] is pressed, formatting can no longer be stopped.

Note:

- Under no circumstances must the power be turned off or the power cord disconnected while the "Formatting the Disc..." display is on the screen. Failure to heed this warning may render the disc unusable.

Hints:

- All data, including video data recorded with this unit, will be erased when the disc is formatted.
- Only DVD-RAM discs can be formatted: no other discs can be formatted.
- A disc cannot be formatted when its write protect tab has been set to PROTECT. Release the tab from this position before proceeding.
- When program protection or disc protection has been set by the direct navigator, the "Contents on the disc have been protected" message appears in step 4. To proceed with formatting, select "Yes." In this case, all the recordings will be erased despite the protection.
- If the formatting is taking 2 minutes or more, it can be suspended at any time by pressing [RETURN]. However, if formatting has been suspended midway, the disc cannot be used as is: it must be formatted again.
- If the "Unable to Format. Please use 4.7GB DVD-RAM Disc." message was displayed when "Yes" was selected in step 3, it may mean that the disc in question cannot be used with this unit.

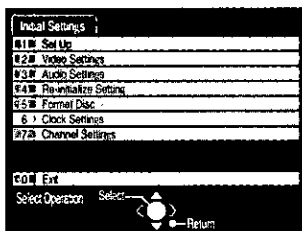
6 Clock Settings

Usually, the DVD Video Recorder's auto setup function automatically adjusts the clock to the correct time. Under some reception conditions, however, the DVD Video Recorder cannot set the clock automatically. In this case, follow the steps below to manually set the clock.

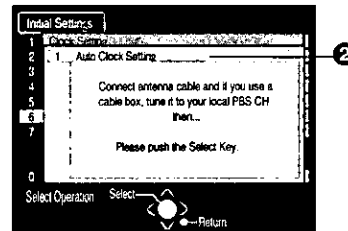
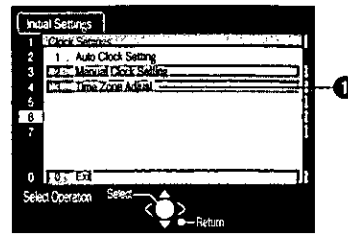
1 Auto Clock Setting

If a TV station transmits a signal for time setting, performing the steps below activates the automatic time setting function and the time is corrected automatically.

- 3** After performing steps 1 and 2 on p. 108, select "6 Clock Settings" using [▲] and [▼], and press [SELECT].



- 4** Select "Auto Clock Setting" using [▲] and [▼], and press [SELECT].



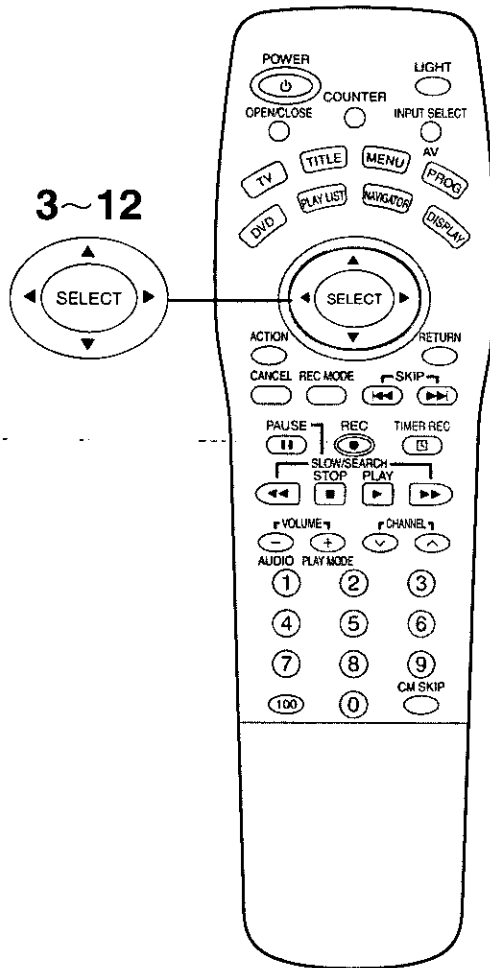
- Item "3 Time Zone Adjust" ① is displayed when the settings for "1 Auto Clock Setting" have been completed. (Item ① will not appear if the settings for "1 Auto Clock Setting" have not been completed or if "2 Manual Clock Setting" has been set.)
- If the channel settings have been performed, "1 Auto Clock Setting" will be displayed for title ②; if the channel settings have not been performed, "1 Auto Channel/Clock Setting" will be displayed.
- Under adverse reception conditions, etc., the automatic time setting function may not work. If the reception conditions improve later on, it may be possible to activate this function.

Notes:

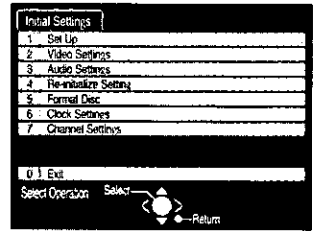
- The built-in clock employs the 12-hour system.
- In case of a power failure, an automatic back-up system maintains the operation of the clock for at least 5 years.
- The automatic time setting function checks and if necessary adjusts the time every day. The automatic time setting function only works when the DVD Video Recorder is switched off.
- The clock setting is performed automatically when the auto channel setting is performed.
- When the power to the unit is off, the clock is adjusted 3 times a day (7:00 a.m., 12:00 p.m. and 7:00 p.m.) based on time information signals sent from TV broadcast stations.

6 Clock Settings (continued)

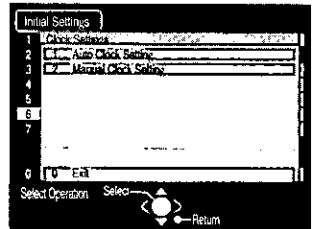
2. Manual Clock Setting



- 3** After performing steps 1 and 2 on p. 108, select “6 Clock Settings” using [▲] and [▼], and press [SELECT].

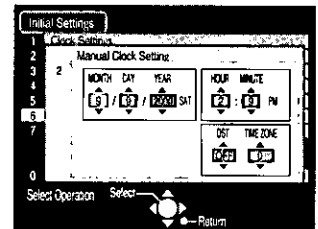


- 4** Select “Manual Clock Setting” using [▲] and [▼], and press [SELECT].



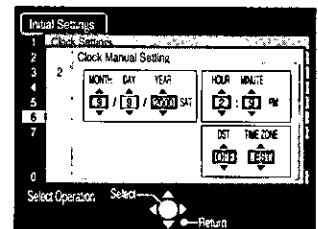
- 5** Set the “MONTH” using [▲] and [▼].

- After setting the month, press [▶] to advance to “DAY.”



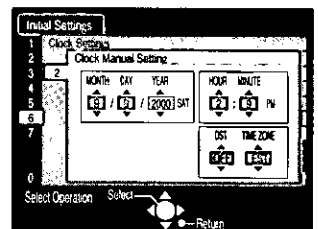
- 6** Set the “DAY” using [▲] and [▼].

- After setting the day, press [▶] to advance to “YEAR.”



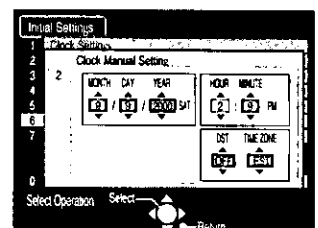
- 7** Set the “YEAR” using [▲] and [▼].

- Any year from 1988 to 2087 can be set.
- After setting the year, press [▶] to advance to “HOUR.”



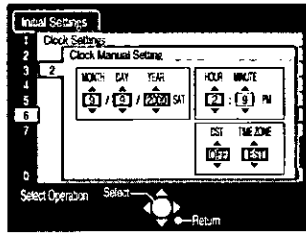
- 8** Set the “HOUR” using [▲] and [▼].

- The clock display is based on the 12-hour system.
- After setting the hour, press [▶] to advance to “MINUTE.”

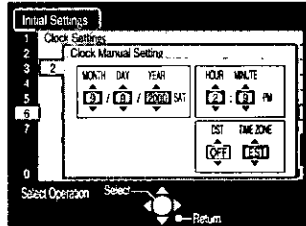


9 Set the "MINUTE" using [▲] and [▼].

- After setting the minutes, press [▶] to advance to "DST" (Daylight Savings Time).

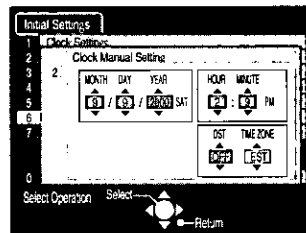


10 Select "ON" or "OFF" using [▲] and [▼].



11 Select "TIME ZONE" using [▶], and set time zone using [▲] and [▼].

- It is possible to select from the following time zones.
EST, CST, MST, PST, HST



12 Press [SELECT].

- The clock now starts running.

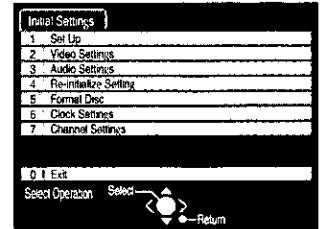
Note:

- Time Zone indicates the time difference with the standard time. If "+9 hr" is indicated, this means the time zone is 9 hours ahead of the standard time.

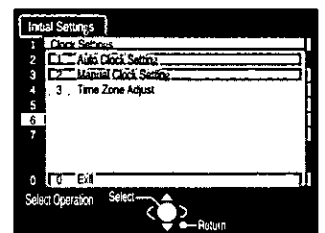
3. Time Zone Adjust

If the time zone information received via radio transmission differs to the actual time zone when "Auto Clock Setting" has been selected, adjust the time zone using the following procedure.

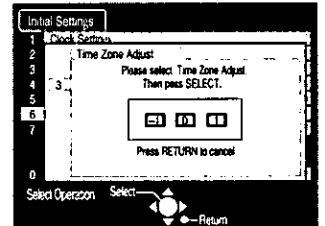
3 After performing steps 1 and 2 on p. 108, select "6 Clock Settings" using [▲] and [▼], and press [SELECT].



4 Select "Time Zone Adjust" using [▲] and [▼], and press [SELECT].



5 Select "-1", "0" or "+1" using [◀] and [▶], and press [SELECT].



Notes:

- If "Auto Clock Setting" is not possible, it is also not possible to perform "3 Time Zone Adjust" on the "Clock Settings" screen.
- If the "Time Zone" setting is adjusted with the clock settings and saved, the date information recorded on the disc will also be adjusted accordingly.

7 Channel Settings

1. Antenna System

Refer to p. 18.

2. Auto Channel Setting

Refer to p. 18.

3. Manual Channel Setting

Refer to p. 19.

4. Channel Captions


















Refer to p. 19.

5. VCR Plus+CH Setting

Refer to p. 20.

TV screen line-up

Depending on the combination of the type of disc format and TV set screen proportions (and the picture quality mode), the images appearing on the TV screen will be one of the picture formats shown below.

TV screen (picture quality mode) Disc format	4:3	16:9 (full mode)	16:9 (zoom mode)	16:9 (auto mode)
Wide-screen format (with pan & scan specification) 	Picture cut off at the left and right 	Full screen 	Picture cut off at the top and bottom 	Full screen 
Wide-screen format (without pan & scan specification) 	Letterbox (with black bands at the top and bottom) 			
4:3 format 	Full screen 	Picture extended to the left and right 	Picture cut off at the top and bottom 	Full screen (with black bands at the left and right) 
4:3 format (letter-box) 	Letterbox (with black bands at the top and bottom) 	Picture extended to the left and right (with black bands at the top and bottom) 	Full screen 	Picture extended at the left and right edges (with black bands at the top and bottom) 

- The specifications given to describe the types of disc format and picture quality modes may differ from one manufacturer to another.
- “Pan & Scan” refers to showing the pictures with both (or one) of the side edges of wide-screen format cut off so that the whole TV screen is filled with the image.

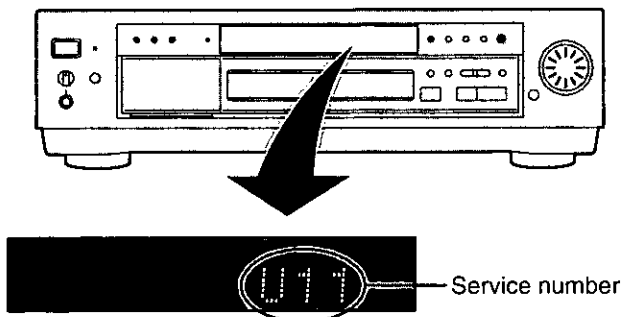
Troubleshooting

Self-diagnosis display function

This unit comes with a self-diagnosis display function for alerting the user to any abnormalities.

When the function detects a problem during installation or operation, one of the service numbers in the table below appears on the unit display window.

• Service numbers are indicated with a letter followed by a 2-digit number, such as “U11” shown in the example below.



Service number	Unit status	Remedial action	Page
U11	Disc is dirty or disc has some major scratches or marks.	▶ DVD-Video discs, video CDs and CDs • If the disc is dirty, wipe it clean using a soft cloth.	7
	A disc that the unit is not capable of recording onto and/or playing back has been inserted.	▶ DVD-RAM discs • If the disc is dirty, be absolutely sure to use the dedicated LF-K200DCA1 (optional accessory) DVD-RAM/PD disc cleaner to wipe it clean. • If the disc has some major scratches or marks, it cannot be played unless this display is cleared.	7
U14	The temperature inside the unit has risen.	▶ • Insert a disc which the unit can record and play.	6
U99	Unit fails to operate properly.	▶ • The power is forcibly turned off to ensure safety, and the unit is no longer operable. Wait (about 30 minutes) until the display goes off. Select an installation location for the unit that is as well ventilated as possible. Do not block the cooling fan in the unit's rear panel.	–
		▶ • Hold down the unit's [POWER] for about 10 seconds to turn off the power. Then press [POWER] to turn the power back on.	–

Troubleshooting (continued)

Check the following symptoms before calling in a service engineer to repair the unit.

If the problem is not rectified by taking the suggested remedial action or if the symptoms are not listed, contact your dealer or your nearest service center.

◆ Power supply

"No power."

- ☞ Power plug has been disconnected from the power outlet.

"Power is on but the unit cannot be operated."

- ☞ Unit is still in the programmed recording standby mode. (The TIMER REC lamp is on.)
→ Press [TIMER REC] to turn off the unit's TIMER REC lamp.
- ☞ The unit's inside temperature has risen. (Service number "U14" has appeared on the unit display window.)
→ Wait (about 30 minutes) until the display goes off.
- ☞ One of the safety devices may have been activated, in which case proceed as follows.
→ 1. Press the unit's [POWER] to turn off the power. If the power fails to be turned off, press and hold [POWER] for about 10 seconds. (Alternatively, disconnect the power plug from the power outlet and wait about a minute before re-connecting the power plug to the outlet.)
2. Press [POWER] to turn on the power.

"Power is automatically set to off."

- ☞ The "2 Off Timer" setting selected from "1 Set Up" in the Initial Settings has been activated.
→ Press [POWER] to turn on the power.
- ☞ One of the safety devices may have been activated.
→ Press [POWER] to turn on the power.

◆ TV screen

"Unit's picture fails to appear."

- ☞ TV input has not been selected.
→ Press [INPUT SELECT] to select the appropriate input (L1, L2, L3).
- ☞ When a TV that does not support 480i has been connected to the unit using the component video connector, select "2 Video Settings" → "3 Component Video Output Setting" → "2 480P" in the Initial Settings. (p. 117)

"Poor picture quality."

- ☞ This happens because the TV signals are split between the TV set and the unit.
→ A booster, etc. sold on the market will improve the picture. (If this has no effect, consult your dealer.)

"There is something wrong with the picture size."

- ☞ Check the TV set's settings.
- ☞ "1 TV Aspect" and "2 TV Mode (4:3)" selected from "2 Video Settings" in the Initial Settings have not been set properly.

"Playback picture shakes vertically."

- ☞ Try adjusting the TV set's vertical hold. (For details on how to make this adjustment, check the TV set's operating instructions or consult your dealer.)

"Screen messages fail to appear."

- ☞ Perform the following settings: "1 Set Up" in the Initial Settings → "1 On-Screen Display" → "1 On-Screen messages" → "1 Automatic" or "2 On."
- ☞ Not available in progressive video mode. (p. 117)

"No blue background for the screen."

- ☞ Perform the following settings: "1 Set Up" in the Initial Settings → "5 Blue Background" → "1 On."
- ☞ Blue background screen is not available in progressive video mode. (p. 117)

"The Menu bar is hard to see or cut off."

- ☞ Change the color and position of the Menu bar screen by performing the following settings: "1 Set Up" in the Initial Settings → "1 On-Screen Display" → "2 Color and position of Menu Bar."

◆ Audio

"No sound, volume level is low or there is something wrong with the sound."

- ☞ The components have not been connected properly.
→ When the unit has been connected to the amplifier, check the input setting selected for the amplifier, etc.
- ☞ The speaker settings have not been performed.
→ Perform the following settings especially when a 3/2.1 channel sound system has been connected: "3 Audio Settings" in the Initial Settings → "4 Speaker Setting." (p. 124)
- ☞ V.S.S. setting is ON.
→ Press [V.S.S.] several times to select "OFF"
- ☞ The master volume on the Menu bar is set low.
→ Press [DISPLAY] twice to show the unit information screen, select the Master Volume icon and adjust the volume. (p.42)

"The desired sound cannot be heard."

- ☞ The correct sound has not been selected.
→ Press [AUDIO] and select the correct sound.

◆ Playback

"Play fails to start even when [PLAY] is pressed or play stops immediately."

"The screen stops or the sound cuts out during playback." "U11," "NO DISC" or "NO PLAY" is displayed in the unit's display window.

- ☞ Place the disc properly on the tray with its label surface facing up.
- ☞ A disc which is not a DVD-RAM disc, DVD-Video disc, video CD or music CD has been inserted.
- ☞ Disc is dirty.
→ Wipe the disc clean.
- ☞ A disc with some major scratches or marks has been inserted.
- ☞ An unrecorded DVD-RAM disc has been inserted.

"Unit fails to operate."

- ☞ Operation may be prohibited with some discs.
- ☞ If the unit does not operate at all, try turning the unit's power off and back on again.
→ The unit may not be operating properly because of lightning, static, etc.

"Playback fails to start even when a title or chapter is selected (on a DVD-Video disc)."

- ☞ Some titles or chapters cannot be played if viewing/listening restrictions have been set.

"Picture is disrupted during forward/reverse skip."

- ☞ The picture is disrupted to some extent but this is normal and not indicative of trouble.

"Pictures are frequently accompanied by lag."

- ☞ Press the [DNR] to release the DNR effect (and turn off the button's lamp).
- ☞ Alternatively, lower the three noise reduction levels by performing the following settings: "2 Video Settings" in the Initial Settings → "6 Noise Reduction (NR)." (p. 120)

"The audio or subtitle language cannot be switched."

- ☞ No more than one language was recorded on the disc to begin with.
- ☞ With some types of discs, this facility is selected by menu settings only and not by the sound and subtitle icons on the Menu bar.

"Preset audio or subtitle language is not selected."

- ☞ The language concerned was not recorded on the disc to begin with.

"Subtitles fail to appear."

- ☞ Subtitles were not recorded on the disc to begin with.
- ☞ The subtitles icon on the Menu bar has not been set to "On."

"Angle cannot be switched."

- ☞ Even with a multi-angle DVD disc, the angle can be switched only at places where multiple angles have been recorded. ("⏏" lights on the unit display window. In many cases, the multi-angle display appears on the TV screen.)

"Password for the viewing/listening restrictions were set has been forgotten."

- ☞ Performing the steps below can release the viewing/listening restrictions.
→ Press [◀◀] and [▶▶] on the unit at the same time for at least 5 seconds while the disc tray is open.

◆ Unit display window

"Displays are dark."

- ☞ Change the brightness by making the following selection: "1 Set Up" in the Initial Settings
→ "4 FL Display." (p. 111)

"0:00" flashes for time display."

- ☞ The unit's clock does not show the correct time.
→ Readjust the time by making the following selection: "6 Clock settings" in the Initial Settings. (p. 129)

◆ Recording/programmed recording

"No recording possible."

- ☞ No disc has been inserted; alternatively, a disc not supported by the unit has been inserted.
→ Use a 4.7GB DVD-RAM disc.
- ☞ Disc has not been formatted. (Recording may not be possible even with a DVD-RAM disc.)
→ Format the disc to enable the unit to record on it.
- ☞ The disc cartridge's write protection tab has been set to "PROTECT".
→ Use the tip of a ballpoint pen or other pointed object to release PROTECT.
- ☞ The disc is full; alternatively, it is nearly full.
→ Delete the programs that are no longer required or use a new disc.

"VCR Plus+ cannot be performed correctly."

- ☞ The guide channels have not been set properly.
→ Set the guide channels properly.
- ☞ The unit's clock does not show the correct time.
→ Readjust the time by making the following selection: "6 Clock Settings" in the Initial Settings.

"Programmed recording cannot be performed properly."

- ☞ One or more of the programming details (such as the programming channel, start time or end time) are wrong.
→ Repeat the programming steps in their proper sequence. Then check the programming details.
- ☞ The unit is not set to the programmed recording standby mode. (The unit's TIMER REC lamp is off.)
→ Press [TIMER REC] to turn on the unit's TIMER REC lamp.
- ☞ One programmed recording time period overlaps another.
- ☞ The unit's clock does not show the correct time.
→ Readjust the time by making the following selection: "6 Clock Settings" in the Initial Settings.

"Unit's power is turned off during programmed recording."

- ☞ When the disc fills up during programmed recording, the unit's power is turned off.
→ Insert a disc with more free time on it than the recording time of the program that has been programmed.

"The programming details are not cleared even when programmed recording has ended."

- ☞ The programming details for daily or weekly recording are not cleared.

"Programmed recording fails to end even when [STOP] is pressed."

- ☞ Press [TIMER REC] to turn off the unit's TIMER REC lamp. (Recording now ends, and the unit's power is left on.)

Troubleshooting (continued)

◆Editing

"Black band noise has been recorded."

- ☞ Since the player component is situated near the TV set, it is picking up interference from the TV set.
 - Place the player component at a distance from the TV set.

"No editing possible"

- ☞ The components have not been connected properly.
- ☞ External input channel "L1," "L2" or "L3" to which the player component is connected has not been selected on the recorder component.

"The post-edited pictures are disturbed or their coloring has deteriorated."

- ☞ The material edited was protected by copy safeguards.
 - Some video media (including rental videos) available on the market are protected by copy safeguards to prevent illegal copying. Media protected by copy safeguards cannot be recorded properly.

◆Remote control

"The remote control does not work."

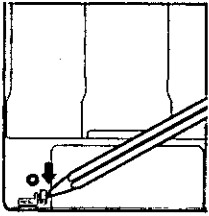
- ☞ The unit is still set to the programmed recording standby mode. (The unit's TIMER REC lamp is lighted.)
 - Press [TIMER REC] to turn off the unit's TIMER REC lamp.
- ☞ The "DVD" mode has not been established.
 - The [DVD] must be pressed when the unit is to be operated.
- ☞ The unit and remote control mode do not correspond.
 - Set the remote control mode to match the unit's mode. (p. 95-p. 96)
- ☞ The remote control batteries' life has expired.
 - Replace with new batteries.
- ☞ The remote control was not pointed at the unit's remote control sensor when it was operated.
- ☞ There is an obstruction between the remote control and unit.

"TV set cannot be operated. "

- ☞ The remote control's manufacturer number setting is not the correct one.
 - The TV button must be pressed when the TV is to be operated.
- ☞ The "TV" mode has not been established.
 - This must be at the TV position when the TV is to be operated.

Error Messages

When an error has occurred, a message is displayed on the TV screen.

Error message	Cause(s) and countermeasure(s)	Page
"This is a non-recordable disc."	<ul style="list-style-type: none"> ●The disc you are attempting to use is a DVD-Video, video CD, music CD or other disc of a format that is not supported by this unit. <ul style="list-style-type: none"> → Insert a DVD-RAM disc that can be recorded onto by this unit. ●The disc you are attempting to use is an unformatted DVD-RAM disc. <ul style="list-style-type: none"> → Format the disc to enable the unit to record on it. 	6 128
"Please check write protect tab on the disc."	<ul style="list-style-type: none"> ●The write-protect tab of the cartridge is set to "protect." <ul style="list-style-type: none"> → Release the write-protect setting using a ball point pen or other pointed object. 	—
"Contents of this disc are protected."	<ul style="list-style-type: none"> ●The program is write-protected. <ul style="list-style-type: none"> → Release the protect by selecting "Cancel" protection in the sub menu of the direct navigation program list. ●The entire contents of the disc are write-protected. <ul style="list-style-type: none"> → Release the write-protect by selecting "Cancel" in the sub menu of the direct navigator disc list. 	73 79

◆Power supply

Q: Will I be able to use the unit when I move?

A: The unit can be used in North America only.
→ Set the reception channels again properly.

◆Connections

Q: Can a microphone be connected?

A: No, it cannot.
→ Connect the microphone to an amplifier or other component connected to the unit.

Q: Can speakers be connected directly?

A: No, they cannot.
→ Connect them to an amplifier or other component connected to the unit.

Q: Why are the video/audio cable plugs and connectors color-coded?

A: This enables the colors of the plugs and connectors to be matched to facilitate the connections.
(Yellow: video, white: left channel sound, red: right channel sound, black or white: monaural sound)

◆Playback

Q: Can DVD discs purchased overseas be played?

A: Yes, they can, provided that region number is "1" or "ALL" and that they use the NTSC system. PAL system discs cannot be played.

Q: Can a DVD disc without a region number be played?

A: The region number indicates that the disc complies with the DVD standards. Discs which fail to meet these standards cannot be played.

Q: Can Video CDs purchased overseas be played?

A: Yes, they can, provided that they use the NTSC system. PAL system Video CDs cannot be played.

◆Recording

Q: Can the sound be switched over and heard while an MTS stereo broadcast is being recorded?

A: Yes, it can.
→ Use [AUDIO] to select the sound to be heard.

Q: Can the sound of only one channel of a stereo broadcast be recorded?

A: No, it cannot.
→ Use [AUDIO] to select the sound to be heard during play.

◆Programmed recording

Q: Are the programmed recordings recorded in the sequence in which they were programmed?

A: No, they are recorded in the date/time sequence.

Q: Can another disc be viewed up until the time when programmed recording is scheduled to commence? Can a disc be changed while the unit is in the programmed recording standby mode?

A: No, it cannot unless the programmed recording standby mode is released.
→ Press [TIMER REC] to turn off the unit's TIMER REC lamp, and then proceed with the operation.

Q: Is it OK for the TV set's power to remain off?

A: The TV set's power can be set on or off.

◆Editing

Q: Can the contents of discs be copied onto videotape?

A: This is not possible with discs which are protected by copy safeguards.

Glossary

Video terms

Field:

A field has one half of the video information contained in a frame. On a regular TV set, each frame is composed by showing these fields in succession one after the other.



Frame:

This is a single image of the connected multiple images on a moving-picture media. On a TV set, for instance, the images are made to move by showing 30 frames (still images) per second in succession.

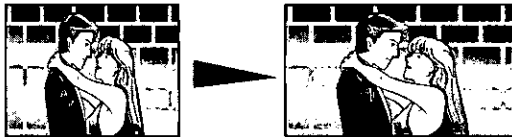


Frame still and field still:

Stills refer to the still pictures produced when the moving pictures are temporarily stopped. With frame still, two fields are alternatively shown on the TV screen so that the picture shakes but the resulting picture quality is superior to the field still pictures. With field still, only one half the video information is shown on the TV screen so that the pictures appear rough to the eye but they do not shake.

S1 video signals:

These are shown when the wide-screen disc format that was compressed to 4:3 is automatically restored to the 16:9 size



S2 video signals:

In addition to the S1 function, these automatically show letterbox format on the full screen.



Digital audio terms

Bitstream:

This refers to audio signals that have been replaced by digital codes and compressed. Using a decoder, the bitstream is decoded into the 2/3.1 channel or other individual channel audio data.

Dolby Digital:

This is a digital audio compression technology developed by Dolby Laboratories Inc. It supports stereo (2 channel) sound reproduction as a matter of course and 5.1 channel surround sound as well. It can store large volumes of audio data on discs very efficiently.

Dolby Pro Logic:

This is a surround sound system that records 4-channel signals on two channels and then restores them to the signals of the 4 separate channels for play. Surround signals are monaural signals that are played up to a frequency of 7 kHz.

dts (digital theater systems):

This is a digital audio recording system that was developed by DTS. It features a lower compression rate from the perspective of giving higher priority to the sound quality.

Dynamic range:

This refers to the difference between the softest sounds that are not overwhelmed by the noise generated from the component and the loudest sounds at which the sound will not break up.

Linear PCM (Pulse Code Modulation):

This refers to audio signals that are replaced with digital codes without compression. Compared with CD signals which are recorded using a 44.1 kHz/16-bit format, DVD signals are recorded using a 48 kHz/16-bit to 96 kHz/24-bit format. This means that DVD discs can be played back with a higher sound quality than CDs. In this unit, linear PCM sound is always output through 2 channels.

Sampling frequency:

Sampling refers to selecting samples of analog waves at recurring fixed time intervals and obtaining numerical values for the height of each wave in order to create digital codes (digital signals). The number of samples taken per second is called the sampling frequency, and the larger this number is, the more accurately the original sound can be reproduced.

Disc-related terminology

Chapter:

This is a subdivision of a title on a DVD-Video disc. The numbers used for these sub-divisions are called chapter numbers. They correspond to the tracks on a CD.

Interactive DVD discs:

These are discs on which multiple angles or stories have been recorded and whose elapsed play time is not displayed during playback.

Program:

This is a division of a DVD-RAM disc.

Title:

This is a major division on a DVD-Video disc. The numbers used for these divisions are called title numbers.

Video CDs with playback control (PBC):

Using the version 2.0 Video CD playback system, users can select scenes or information to be viewed by way of an interactive format while looking at the menu screens which are displayed during playback. In this manual, playback using menu screens is referred to as Video CD menu playback. (This unit does not support the auto pause function of playback control.)

Other terms

Component video output connectors:

The video information separated into luminance (Y) signals and component (C_B,C_R) signals is transferred straight through from these connectors to the TV set so that the colors are reproduced faithfully.

Interlace/progressive:

Whereas the conventional video signals (NTSC) were called 480I (I: interlace scanning) signals, the high-density video signals which have twice as many scanning lines as the 480I signals are called 480P (progressive scanning) signals. When connection is made to the component video output connectors (Y, P_B/C_B-P_R/C_R) on the unit's rear panel, progressive video signals can be output. This enables you to enjoy pictures with an even higher quality than that yielded when connection is made to the conventional video output connectors or S-video output connector.

Menu bar:

This means that operations can be performed while watching a screen. In the case of this unit, the long, thin strip of screen that displays the disc and unit information is called the "menu bar."

This screen enables a number of different operations to be performed during play by initiating changes to the settings while checking the information displayed.

Program navigator:

When [PROGRAM NAVIGATOR] is pressed, a list showing details of the recorded programs appears on the TV screen, making it possible to search for a desired program. The programs recorded on the disc are listed by date/time, channel and title (only for programs with titles that have been input), and the selected program is played as a moving picture in the background behind the list for easy confirmation. Programs can be write-protected to prevent accidental erasure or erased in part.

Play list:

The play list enables you to play in numerical order a series of favorite scenes which you have selected and put together. It also enables you to search specific scenes directly. Scenes no longer required can be removed and new scenes added at will. You can enjoy original videos consisting of all your favorite scenes of music or sports programs, for instance, or you can dub the pictures you have shot using a video camera, and then select only those scenes you need and play them one after the other, too.

Specifications

Power source:	AC 120V±10% 60 Hz±0.5%
Power consumption:	47 W (6 W during power "standby")

Recording system: DVD video recording standards complied with

Optical pick-up: System with 1 lens, 2 integration units (650nm wavelength for RAM/ROM, 780nm wavelength for CDs)

Recording modes: XP: Approx. 10 Mbps
SP: Approx. 5 Mbps
LP: Approx. 2.5 Mbps

Recordable discs: 4.7 GB DVD-RAM discs

Recording time: Max. 4 hours (using DY-HB47)
XP: 60 minutes (DY-HB47)
SP: 120 minutes (DY-HB47)
LP: 240 minutes (DY-HB47)

Video system

TV system: NTSC system, 525 lines, 60 fields (480I)/480P (progressive scanning)

Recording system: RTR MPEG2 (Hybrid VBR)

Input: LINE (pin jack), 1.0 Vp-p; 75 ohm
S connector Y: 1.0 Vp-p; 75 ohm
C: 0.286 Vp-p; 75 ohm

Output: LINE (pin jack), 1.0 Vp-p; 75 ohm
S connector Y: 1.0 Vp-p; 75 ohm
C: 0.286 Vp-p; 75 ohm

Component video output 480P/(480I): Y: 1.0 Vp-p; 75 ohm
P_B (C_B): 0.7 Vp-p; 75 ohm
P_R (C_R): 0.7 Vp-p; 75 ohm

Antenna reception

input: TV Channel 2ch-69ch (VHF 2ch-13ch,UHF 14ch-69ch) 75 ohm
CATV Channel 1ch-125ch (5A&A-5ch-EEE ch) 75 ohm

RF converter

output: Not provided

Audio system

Input: LINE (pin jack)
Reference input: 309 mVrms/
FS: 2 Vrms (1 kHz, 0 dB)
Input impedance: 47 kohm

Output: LINE (pin jack)
Reference output: 309 mVrms/
FS: 2 Vrms (1 kHz, 0 dB)
Output impedance: 1 kohm
(Load impedance: 10 kohm)
Headphones (M6 jack)
Input: -14 dBV
At max. H.P.VR: 180 mVrms
Load impedance: 32 ohm

Other input/output

connectors: Digital audio optical output connector/
Digital audio coaxial output connector

Dimensions:

Approx. 16^{15/16}" (W) x 4^{15/16}" (H) x 13^{7/8}" (D)
[Approx. 430(W) x 125(H) x 352(D) mm]

Unit weight:

Approx. 15.84 lbs (7.2 kg)

Operating ambient

temperature: 5°C – 40°C (41°F – 104°F)

Operating ambient

humidity: 35% – 80%

Clock unit:

Quartz-controlled 12-hour digital display

LASER Specification

Class I LASER Product

Wave Length: 775-815 nm 655-666nm

Laser Power: No hazardous radiation is emitted with the safety protection.

Weight and dimensions shown are approximate. Specifications are subject to change without notice.

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For U.S.A.

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PANASONIC DVD RECORDER Limited Warranty

Panasonic Consumer Electronics Company or Panasonic Sales Company (collectively referred to as "the Warrantor") will repair this product and all included accessories with new or refurbished parts, free of charge in the USA or Puerto Rico, from the date of the original purchase in the event of a defect in materials or workmanship as follows:

Parts – New or rebuilt parts in exchange for defective parts for one (1) year from the date of original purchase.

Labor – Carry-in or mail-in service for one (1) year from the date of original purchase.

Batteries – (if included) New rechargeable batteries in exchange for defective rechargeable batteries for ten (10) days from the date of original purchase. Non-rechargeable batteries are not warranted.

4.7 DVD-RAM Disc - New 4.7 DVD-RAM Disc in exchange for defective disc for ten (10) days from the date of original purchase.

Carry-in or mail-in service in the USA may be obtained during the warranty period by contacting a Panasonic Services Company (PASC) Factory Sevicenter listed in the Service Directory. Or call toll free 1-800-211-PANA(7262) to locate an authorized PASC Sevicenter. Carry-in or mail-in service in Puerto Rico can be obtained during the warranty period by calling the telephone number listed in the Sevicenter Directory.

This warranty is extended only to the original purchaser. A purchase receipt or other proof of date of original purchase will be required before warranty service is rendered.

This warranty only covers failures due to defects in materials and workmanship which occur during normal use. The warranty does not cover damage which occurs in shipment, or failures which are caused by products not supplied by the warrantor, or failures which result from accident, misuse, abuse, neglect, mishandling, misapplication, alteration, modification, faulty installation, set-up adjustments, improper antenna, inadequate signal pickup, maladjustment of consumer controls, improper operation, power line surge, improper voltage supply, lightning damage, commercial use such as hotel, office, restaurant, or other business or rental use of the product, or service by anyone other than a DVD Recorder authorized repair facility, or damage that is attributable to acts of God.

LIMITS AND EXCLUSIONS

There are no express warranties except as listed above.

THE WARRANTOR SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING, WITHOUT LIMITATION, DAMAGE TO DISCS) RESULTING FROM THE USE OF THIS PRODUCTS, OR ARISING OUT OF ANY BREACH OF THE WARRANTY. ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE, ARE LIMITED TO THE APPLICABLE WARRANTY PERIOD SET FORTH ABOVE

Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above exclusions or limitations may not apply to you.

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

If you have a problem with this product that is not handled to your satisfaction, then write to the Consumer Affairs Department at the Company address indicated above.

For CANADA

Panasonic Canada Inc.
5770 Ambler Drive, Mississauga, Ontario L4W 2T3

PANASONIC / TECHNICS PRODUCT – LIMITED WARRANTY

Panasonic Canada Inc. warrants this product to be free from defects in material and workmanship and agrees to remedy any such defect for a period as stated below from the date of original purchase.

Panasonic DVD Recorder One (1) year, parts and labour

LIMITATIONS AND EXCLUSIONS

This warranty does not apply to products purchased outside Canada or to any product which has been improperly installed, subjected to usage for which the product was not designed, misused or abused, damaged during shipping, or which has been altered or repaired in any way that affects the reliability or detracts from the performance, nor does it cover any product which is used commercially. Dry cell batteries are also excluded from coverage under this warranty.

This warranty is extended to the original end user purchaser only. A purchase receipt or other proof of date of original purchase is required before warranty service is performed.

THIS EXPRESS, LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, EXCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

IN NO EVENT WILL PANASONIC CANADA INC. BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES.

In certain instances, some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, or the exclusion of implied warranties, so the above limitations and exclusions may not be applicable.

WARRANTY SERVICE

For product operation and information assistance, please contact your Dealer or our Customer Care Centre at:
Telephone #: (905) 624-5505 Fax #: (905) 238-2360 Web: www.panasonic.ca

For product repairs, please contact one of the following:

- Your Dealer who will inform you of an authorized Servicentre nearest you.
- Our Customer Care Centre at (905) 624-5505 or www.panasonic.ca
- A Panasonic Factory Servicentre listed below:

Richmond, British Columbia

Panasonic Canada Inc.
13131 Bathgate Place
Richmond, BC V6V 1Z3
Tel: (604) 278-4211
Fax: (604) 278-5627

Calgary, Alberta

Panasonic Canada Inc.
6835-8th St. N. E.
Calgary, AB T2E 7H7
Tel: (403) 295-3955
Fax: (403) 274-5493

Mississauga, Ontario

Panasonic Canada Inc.
5770 Ambler Dr.
Mississauga, ON L4W 2T3
Tel: (905) 624-8447
Fax: (905) 238-2418

Lachine, Québec

Panasonic Canada Inc.
3075, rue Louis A. Amos
Lachine, QC H8T 1C4
Tel: (514) 633-8684
Fax: (514) 633-8020

CUSTOMER'S RECORD: _____

Customer Name: _____

Model Number: _____ **Serial Number:** _____

Date of Purchase: _____

Dealer's Name: _____

Address: _____ **Phone Number:** _____

IF YOU SHIP THE PRODUCT TO A SERVICENTRE

Carefully pack and send prepaid, adequately insured and preferably in the original carton.
Include details of the defect claimed, and proof of date of original purchase.

Ref: Audwar0600

Region Management Information

Region Management Information: This DVD Video Recorder is designed and manufactured to respond to the Region Management Information that is recorded on a DVD disc. If the Region number described on the DVD disc does not correspond to the Region number of this recorder, this recorder cannot play this disc.

The Region number for this recorder is 1.



Apparatus Claims of U.S. Patent Nos. 4, 631,603, 4,577,216, and 4,819,098, licensed for limited viewing uses only.

This product incorporates copyright protection technology that is protected by method claims of certain U.S. patents and other intellectual property rights owned by Macrovision Corporation and other rights owners. Use of this copyright protection technology must be authorized by Macrovision Corporation, and is intended for home and other limited viewing uses only unless otherwise authorized by Macrovision Corporation. Reverse engineering or disassembly is prohibited.

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