Panasonic®

LCD TV / DVD-Recorder Combination
Operating Instructions

Model No. TC-22LR30

• Initial Setup and Connection Procedures are on page 21.

DOLBY DIGITAL

RAM COMPATIBLE RECORDER

COMPACT disc DIGITAL VIDEO

dts 2.0+DIGITAL OUT™

DVD VIDEO RAM

DVD AUDIO

VCR Plus+®

SD™

HDMI™ HIGH-DEFINITION MULTIMEDIA INTERFACE

MULTI FORMAT PLAYBACK

DVD-RAM* DVD-R video playback

CD-R/RW* playback

MP3 PLAYBACK

JPEG Playback

* Ability to play back may depend on recording conditions.

ENERGY STAR

As an ENERGY STAR® Partner, Matsushita Electric Corporation of America has determined that this product or product model meets the ENERGY STAR® guidelines for energy efficiency.

READY TO PLAY!

Please read these instructions carefully before attempting to connect, operate, or adjust this product. Please save this manual.
Spanish Quick Use Guide is included.
(Guía para rápida consulta en español está incluida.)

LSQT0853 A

Before Using

Congratulations

On your purchase of one of the most sophisticated and reliable products on the market today. Used properly, it will bring you and your family years of enjoyment. Please fill in the information below. The serial number is on the tag located on the back of your unit.

Date of Purchase _____

Dealer Purchased From _____

Dealer Address _____

Dealer Phone No. _____

Model No. _____

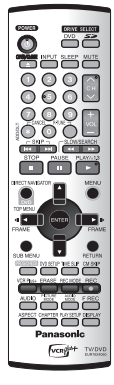
Serial No. _____

Accessories

Please check and identify the supplied accessories.
Use numbers indicated in parentheses when asking for replacement parts.

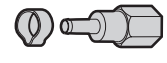
To order accessories, call toll free 1-800-332-5368.

☐ 1 Remote Control (EUR7624060)



☐ 2 Batteries “AA”

☐ 1 F-Type Antenna Connector (for 4C-2V) (K1RKZBA00001)



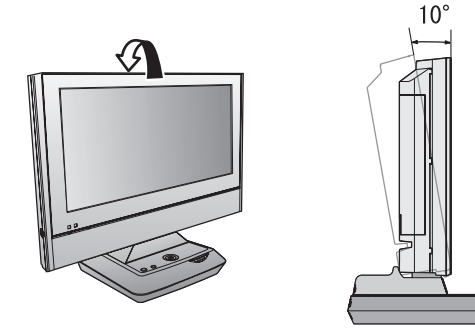
Installation

Receiver Location
Locate for comfortable viewing. Avoid placing where sunlight or other bright light (including reflections) will fall on the screen. Use of some types of fluorescent lighting can reduce Remote Control transmitter range.
Adequate ventilation is essential to prevent internal component failure. Keep away from areas of excessive heat or moisture.

Optional External Equipment
The Video / Audio connection between components can be made with shielded video and audio cables. For best performance, antenna cables should utilize 75 Ω coaxial shielded wire. Cables are available from your dealer or electronic supply store. Before you purchase any cables, be sure you know what type of output and input connectors your various components require. Also determine the length of cable you’ll need.

For optimum quality picture
When the LCD is exposed to light from outdoors or lighting fixtures, high-contrast pictures may not be displayed clearly. Turn off florescent lamps near the LCD and place in a location not exposed to outdoor light.

Adjust viewing position
The LCD screen can be tilted up to 10° rearward.



About LCD Panel

The red, blue, and green dots on the screen are a characteristic of the LCD panel and not a malfunction.

- Please note that extremely high precision technology is employed to produce the LCD Monitor screen resulting in a 99.99 % pixel effective rate. This leaves only 0.01 % pixels inactive or always lit.

For assistance, please call : 1-800-211-PANA(7262) or, contact us via the web at:http://www.panasonic.com/contactinfo

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Important Safety Instructions

The lightning flash with arrow head within a triangle is intended to tell the user that parts inside the product are a risk of electric shock to persons.

The exclamation point within a triangle is intended to tell the user that important operating and servicing instructions are in the papers with the appliance.

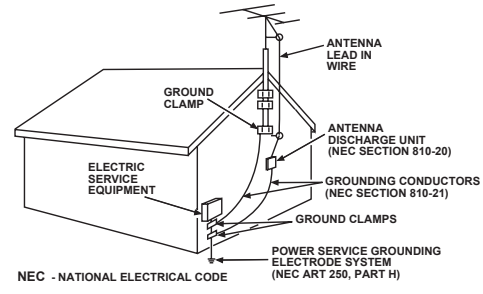
■ Note to CATV System Installer:

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

■ Important Safety Instructions for this unit

1) Read these instructions.
   All the safety and operating instructions should be read before the appliance is operated.
2) Keep these instructions.
   The safety and operating instructions should be retained for future reference.
3) Heed all warnings.
   All warnings on the appliance and in the operating instructions should be adhered to.
4) Follow all instructions.
   All operating and use instructions should be followed.
5) Do not use this apparatus near water.
   For example, near a bathtub, wash bowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool, and the like.
6) Clean only with dry cloth.
   Do not use liquid cleaners or aerosol cleaners. Use a dry cloth for cleaning.
7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
   Slots and Openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface.
8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
   This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.
9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11) Only use attachments / accessories specified by the manufacturer.
12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart / apparatus combination to avoid injury from tip-over. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

13) Unplug this apparatus during lightning storms or when unused for long periods of time.
    This will prevent damage to the product due to lightning and power-line surges.
14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15) To prevent electric shock, ensure the grounding pin on the AC cord power plug is securely connected.
16) If an outside antenna is connected to the television equipment, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges. In the U.S. Selection 810-21 of the National Electrical Code provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.



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17) An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.

18) Unplug this unit from the wall outlet, and refer servicing to qualified service personnel under the following conditions:
   a. When the power cord or plug is damaged or frayed.
   b. If liquid has been spilled into the unit.
   c. If the unit has been exposed to rain or water.
   d. If the unit does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the unit to normal operation.
   e. If the unit has been dropped or the cabinet has been damaged.
   f. When the unit exhibits a distinct change in performance - this indicates a need for service.

19) When replacement parts are required, be sure the service technician uses replacement parts specified by the manufacturer that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.

20) **WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE.**
DO NOT PLACE LIQUID CONTAINERS (FLOWER VASES, CUPS, COSMETICS, ETC.) ABOVE THE SET. (INCLUDING ON SHELVES ABOVE, ETC.)

21) **CAUTION:** TO PREVENT ELECTRIC SHOCK DO NOT USE THIS PLUG WITH A RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

NOTE:
- This equipment is designed to operate in the U.S.A. and other countries where the broadcasting system and AC house current is exactly the same as in the U.S.A..
- The marking or retained image on the LCD panel resulting from fixed image use is not an operating defect and as such is not covered by Warranty. This product is not designed to display fixed image patterns for extended periods of time.

■ Important Information Regarding Use of Video Games, Captions or Other Fixed Image Displays.

The extended use of fixed image program material can cause a permanent “shadow image” on the LCD panel. This background image is viewable on normal programs in the form of a stationary fixed image. This type of irreversible LCD panel deterioration can be limited by observing the following steps:

A. Reduce the brightness / contrast setting to a minimum viewing level.
B. Do not display the fixed image for extended periods of time.
C. Turn the power off when not in actual use.

■ This product utilizes tin-lead solder, and has a fluorescent lamp containing a small amount of mercury. Disposal of these materials may be regulated in your community due to environmental considerations. For disposal or recycling information please contact your local authorities, or the Electronics Industries Alliance: www.eiae.org.

CAUTION:
UNIT IS A CLASS I LASER PRODUCT.
HOWEVER THIS UNIT USES A VISIBLE LASER BEAM WHICH COULD CAUSE HAZARDOUS RADIATION EXPOSURE IF DIRECTED. BE SURE TO OPERATE THE UNIT CORRECTLY AS INSTRUCTED.
WHEN THIS UNIT 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 UNIT.
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 ATTEMPT TO REPAIR THE UNIT YOURSELF. REFER SERVICING TO QUALIFIED PERSONNEL.

CAUTION:
LASER RADIATION WHEN OPEN. DO NOT STARE INTO BEAM.

ATTENTION:
RAYONNEMENT LASER EN CAS D'OUVERTURE.
NE PAS REGARDER DANS LE FAISCEAU.

(Inside of product)

Apparatus Claims of U.S. Patent Nos. 4,631,603, 4,577,216, 4,819,098, 4,907,093, and 6,516,132 licensed for limited viewing uses only.

This product incorporates copyright protection technology that is protected by U.S. Patents and other intellectual property rights. Use of this copyright protection technology must be authorized by Macrovision, and is intended for home and other limited viewing uses only unless otherwise authorized by Macrovision. Reverse engineering or disassembly is prohibited.

⚠ WARNING

AS WITH ANY SMALL OBJECT, SD CARS CAN BE SWALLOWED BY YOUNG CHILDREN. DO NOT ALLOW CHILDREN TO HANDLE THE SD CARD.

Dear Panasonic Customer

Welcome to the Panasonic family of customers.
We hope that you will have many years of enjoyment from your new LCD TV/DVD-Recorder.
To obtain maximum benefit from your set, please read these instructions before making any adjustments, and retain them for future reference.
Retain your purchase receipt, and record the model number and serial number of your set in the space provided on the rear cover of these instructions.

For assistance, please call : 1-800-211-PANA (7262)
or send e-mail to : consumerproducts@panasonic.com
or visit us at www.panasonic.com/contactinfo **(U.S.A.)**

For assistance, please call : 787-750-4300
or visit us at www.panasonic.com/contactinfo
(Puerto Rico)

Federal Communication Commission Information

This equipment has been tested and found to comply with the limits for a TV Broadcast Receiver, 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 or receive interference, which can be determined by turning 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 TV antenna.
Increase the separation between TV and other equipment.
Connect TV into separate outlet from other equipment.
Consult the dealer or an experienced radio / TV technician for help.

FCC Caution: Pursuant to 47CFR, Part 15.21 of the FCC rules, any changes or modifications not expressly approved by Matsushita Electric Corporation of America could result in harmful interference and would void the user's authority to operate this equipment.

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

"DTS" and "DTS2.0 + Digital Out" are trademarks of Digital Theater Systems, Inc.

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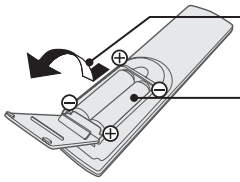
MPEG Layer-3 audio decoding technology licensed from Fraunhofer IIS and Thomson multimedia.

Information

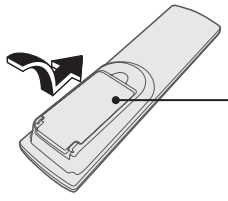
Information (Unit)

Loading the Batteries



1 Open the cover.

2 Insert batteries as marked.



3 Close the cover.

• Slide in direction of "⇪" mark until cover snaps shut.

• Insert so the poles (+ and -) match those in the Remote Control.
• Do not use rechargeable type batteries.

Do not:
• Mix old and new batteries.
• Use different types at the same time.
• Heat or expose to flame.
• Take apart or short circuit.
• Attempt to recharge alkaline or manganese batteries.
• Use batteries if the covering has been peeled off.

Mishandling of batteries can cause electrolyte leakage which can damage items the fluid contacts and may cause a fire.
Remove if the Remote Control is not going to be used for a long period of time. Store in a cool, dark place.

DST (Daylight Saving Time)

Unit auto adjusts clock for DST (Daylight Saving Time.)

■ Spring (First Sunday in April)
DST: ON → Sets clock ahead one hour.

■ Autumn (Last Sunday in October)
DST: ON → Turns clock back one hour.

• If your area does not observe Daylight Saving Time, select DST : OFF (refer to "Manual Clock Setting" on page 23).
• Keep these time changes in mind when programming the unit for timer recording.

Information (Disc)

Play-only discs

Disc type	Disc Logo	Instructions	Indication in these operating instructions
DVD-Audio	DVD AUDIO	High fidelity music discs • Played on this unit in 2 channels.	DVD-A
DVD-Video	DVD VIDEO DVD VIDEO	High quality movie and music discs	DVD-V
Video-CD	COMPACT disc DIGITAL VIDEO	Music and video recorded (including CD-R/RW)	VCD
Audio-CD	COMPACT disc DIGITAL AUDIO	Music and audio recorded (including CD-R/RW) CD-R and CD-RW with music recorded in MP3 (p. 47)	CD (CD-DA) or MP3 (MP3)

• The producer of the material can control how DVD-Video and Video CDs are played. This means that you may not be able to control play of a disc with some operations described in these operating instructions. Read the disc's instructions carefully.
• This unit can play CD-R/CD-RW (audio recording disc) recorded with CD-DA (digital audio), video CD (video CD format 2.0 or above) or MP3. Finalize* the disc after recording.
  * A process that allows play on compatible equipment.
• This unit cannot record onto CD-R or CD-RW.

■ Discs that cannot be played
• 2.6 and 5.2 GB DVD-RAM, 12 cm (5″)
• 3.95 and 4.7 GB DVD-R for Authoring
• Unfinalized DVD-R recorded on other equipment (refer to "Finalize" on page 70)
• PAL discs (you can still play the audio on DVD-Audio)
• DVD-Video with a region number other than "1" or "ALL"
DVD-ROM, DVD-RW, +R, +RW, CD-ROM, CDV, CD-G, Photo CD, CVD, SVCD, SACD, MV-Disc, PD , Divx Video Disc, etc.

■ DVD-Video
You can play discs with these symbols.

DOLBY DIGITAL	**Dolby Digital:** This unit can play Dolby Digital in stereo (2 channels). Connect an amplifier with a built-in Dolby Digital decoder to enjoy surround sound.
DIGITAL dts SURROUND	**DTS Digital Surround:** Connect this unit to equipment that has a DTS decoder to enjoy DVDs with this mark.

■ CD-R and CD-RW discs
This unit can play finalized* CD-R/CD-RW (audio recording disc) recorded in CD-DA (digital audio), Video CD or MP3 format. Some CD-R or CD-RW may not be played due to the condition of the recording.

* A process that allows play on compatible equipment.

For assistance, please call : 1-800-211-PANA(7262) or, contact us via the web at:http://www.panasonic.com/contactinfo

Discs you can use for recording and play

Disc type	Disc Logo	Indication in these operating instructions
DVD-R	DVD R R4.7	DVD-R
DVD-RAM	DVD RAM RAM4.7	RAM

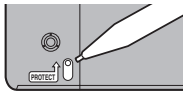
Notes:
- We recommend using Panasonic discs. DVD-R from other manufacturers may not be recorded or played due to the condition of the recording.
- This unit cannot record to discs containing both PAL and NTSC signals. Play of discs recorded with both PAL and NTSC on another unit is not guaranteed.
- Some parts of the disc, for example where one program ends and another begins, may not play smoothly.

■ DVD-RAM discs

Re-writable discs
- You can record up to 16 hours [in EP (8 H) mode on double-sided disc. You cannot record or play continuously on two sides]. (Refer to “Recording modes and approximate recording times” on page 39.)
- You can perform chasing playback (p. 42).
- Scratch and dust resistant cartridge discs and large capacity double sided discs (9.4 GB) are commercially available.
- You can record digital broadcasts that allow “One time only recording” when using CPRM (Content Protection for Recordable Media) compatible discs (p. 70).

Capacity	• 12 cm (5″) 9.4 GB (double-sided) and 4.7 GB (single-sided) • 8 cm (3″) 2.8 GB (double-sided)

Protection (Cartridge discs)
With the write-protect tab in the protect position, you cannot record to, edit, or erase from the disc.
Play automatically starts when inserted in the unit.



■ DVD-R discs

One time recording discs (recordable until the disc is full)
- You can record up to 8 hours [in EP (8 H) mode].
- **By finalizing the disc, you can play it in a DVD player as DVD-Video (Play only) (pp. 62, 70).**
- You cannot record digital broadcasts that allow “One time only recording”.
- This unit is compatible with 1×-4× recording speed discs.

Capacity	• 12 cm (5″) 4.7 GB, 8 cm (3″) 1.4 GB for General Ver. 2.0 • 4.7 GB, 12 cm (5″) for General Ver. 2.0 / 4× - SPEED DVD-R Revision 1.0

Discs or Card you can use

Type		Possible operations*				
		A	B	C	D	E
DVD-RAM	RAM	○	○	○	○	○
DVD-R	Before Finalizing DVD-R	○	○	○**	×	×
	After Finalizing DVD-V	×	○	×	×	×
DVD-Audio	DVD-A	×	○	×	×	○
DVD-Video	DVD-V	×	○	×	×	○
Audio-CD	CD-DA Format CD	×	○	×	×	×
	MP3 Format MP3	×	○	×	×	×
Video-CD	VCD	×	○	×	×	○
Card	SD	×	○	○***	×	×

* Possible operations (○: enable, × : unable)

A: **Recording**

B: **Playback**

C: **Title erase/Entering text**

D: **Creating play lists**

E: **Selecting audio**

** The remaining capacity of the disc will not be increased even if erased.
*** Only titles in folders can be input.

Disc Composition Examples

Disc Type		Disc Composition
DVD-RAM	RAM	Title (Program): Title 1 (Program 1) | Title 2 (Program 2) | Title 3 (Program 3) | Title 4 (Program 4) | Title 5 (Program 5) Play List: Chapter 1 (Scene 1) | Chapter 2 (Scene 2) | Chapter 3 (Scene 3) | Chapter 4 (Scene 4) | Chapter 5 (Scene 5) **Note:** • You can create chapters for your recorded title/ program. And, you can arrange created chapters into a desired scene list (Play List).
DVD-R	Before Finalizing DVD-R	Title (Program): Title 1 (Program 1) | Title 2 (Program 2) | Title 3 (Program 3) | Title 4 (Program 4) | Title 5 (Program 5)
	After Finalizing DVD-V	Title: Title 1 | Title 2 Chapter: Chapter 1 | Chapter 2 | Chapter 3 | Chapter 1 | Chapter 2
DVD-Audio	DVD-A	Group: Group 1 | Group 2 Track: Track 1 | Track 2 | Track 3 | Track 1 | Track 2
DVD-Video	DVD-V	Title: Title 1 | Title 2 Chapter: Chapter 1 | Chapter 2 | Chapter 3 | Chapter 1 | Chapter 2
Audio-CD	CD-DA Format CD	Track: Track 1 | Track 2 | Track 3 | Track 4 | Track 5
	MP3 Format MP3	Group: Group 1 | Group 2 Track: 1 | 2 | 3 | 1 | 2 | 3 Total Track: 1 | 2 | 3 | 4 | 5 | 6
Video-CD	VCD	Track: Track 1 | Track 2 | Track 3 | Track 4 | Track 5

Which should I use, DVD-RAM or DVD-R?

The following chart indicates the differences. Select based upon what you require.

	DVD-RAM	DVD-R
Re-writable	YES	NO
Edit	YES	YES *1
Play on other players	YES *2	YES *3
Recording both Main and SAP of MTS broadcast	YES *4	NO *4
Recording broadcasts that allow one copy	YES *5	NO
Recording 16:9 aspect picture	YES	YES *6

*1 You can erase, enter name and change thumbnail. Available space does not increase after erasing.

*2 Only on DVD-RAM compatible players.

*3 After finalizing the disc (pp. 62, 70).

*4 Only one is recorded ("Select MTS" on page 69).

*5 CPRM (p. 70) compatible discs only.

*6 The picture is recorded in 4:3 aspect.

Region Management Information

This unit 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 unit, this unit cannot play this disc.

For U.S.A. and Canada

• The region number of this player is "**1**".

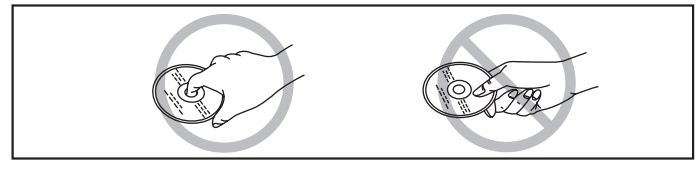
• The player will play DVD-Video marked with labels bearing "**1**" or "**ALL**".

Example:

Disc Handling

■ How to hold a disc

Do not touch the recorded surface.



■ If there is dirt or condensation on the disc

RAM DVD-R

• Clean with an optional DVD-RAM/PD Disc cleaner (**LF-K200DCA1**, where available).

• Do not use cleaners for CDs or cloths.

DVD-A DVD-V VCD CD

Wipe with a damp cloth and then wipe dry.

■ Handling precautions

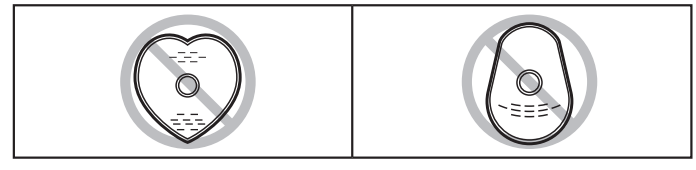
• Do not attach labels or stickers to discs. (This may cause disc warping and un-balanced rotation, rendering it unusable.)

• Do not write on the label side with a ball-point pen or other writing instrument.

• Do not use record cleaning sprays, benzine, thinner, static electricity prevention liquids or any other solvent.

• Do not use scratch-proof protectors or covers.

• Do not use the following discs:
- Disc with exposed adhesive from removed stickers or labels (rented discs, etc.).
- Discs that are badly warped or cracked.
- Irregularly shaped discs, such as heart shapes.



• Do not place in the following areas:
- In direct sunlight.
- In very dusty or humid areas.
- Near a heater.

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Information (Card)

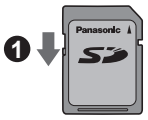
Cards capable of displaying and saving

Card type	Card Logo	Indication in these operating instructions
SD Memory Card	SD	SD
MultiMediaCard	MultiMediaCard™	

- Use a genuine SD Memory Card or MultiMediaCard. (We recommended using a Panasonic SD card.)
- You cannot use SD cards that exceed 2 GB.
- Compatible with: FAT 12 or FAT 16
- Use this unit to format a memory card when using for the first time (p. 61). Note that the memory card may no longer be usable on other equipment once formatted on this unit.
- This unit operates in accordance with the DPOF (Digital Print Order Format) (p. 56). (Card only)
- Only use the memory cards recommended above.

■ SD Memory Card Write Protection

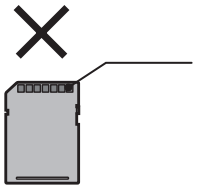
You can protect valuable images, etc. from accidental erasure.



❶ Move switch to LOCK : erase/edit not possible.

❷ Move switch back : erase/edit possible.

■ Card Handling



Do not touch terminal side of card.

Still Pictures

- The unit can play DCF* compliant JPEG and TIFF files taken on a digital camera.

* Design rule for Camera File system: unified standard established by Japan Electronics and Information Technology Industries Association (JEITA).

- Picture definition:

  Compatible in the range 34 × 34 – 6 144 × 4 096 (sub sampling is 4:2:2 or 4:2:0)
- This unit can handle a maximum of 300 folders (including header folders) and 3 000 files. Files and folders with numbers which exceed the maximum cannot be displayed, copied or erased.
- Audio, video and still pictures (MOTION JPEG etc.) that are not compliant with the DCF standard and still pictures other than JPEG and TIFF cannot be displayed.
- Still pictures created or edited on a computer may not be playable.
- TIFF is compatible with uncompressed RGB chunky formats. Other types of TIFF files cannot be played.
- When playing TIFF files, it may take time for them to be displayed.
- When there are a lot of folders and files, it may take a long time to display, copy or erase.
- Folder titles that were input on equipment other than this unit may not be displayed properly.

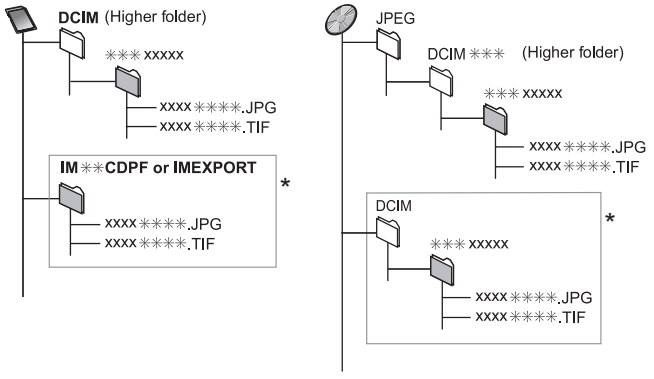
Notes:

- JPEG and TIFF files on a CD-R/CD-RW cannot be played back.
- JPEG and TIFF files on a DVD-RAM can played back.

■ Still picture folder structure

The following can be displayed on this unit.

✱✱✱ : Numbers
xxxxx : Letters



* Folders can be created on other equipment. However, these folders cannot be selected as a transferring (dubbing) destination.

- The folder cannot be displayed if the numbers are all “0” (e.g., DCIM000 etc).
- If a folder name or filename has been input using other equipment, the name may not be displayed properly or you may not be able to play or edit the data.

Information (MP3)

■ Tips for making MP3 discs

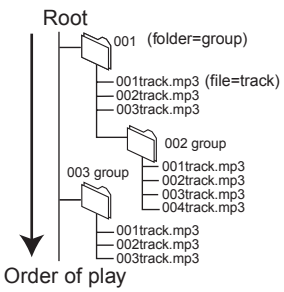
- Discs must conform to ISO9660 level 1 or 2 (except for extended formats).
- Compatible compression rate: between 32 kbps and 320 kbps
- Compatible sampling rate: 16 kHz, 22.05 kHz, 24 kHz, 32 kHz, 44.1 kHz and 48 kHz
- Maximum number of tracks and groups recognizable: 999 tracks and 99 groups
- This unit is compatible with multi-session.
- This unit is not compatible with ID3 tags or packet writing.
- Depending on the recording, some items may not be playable.
- Reading or play of the disc may take time if there are a lot of still pictures or sessions.
- The display order may differ from how the order is displayed on a computer.

Note:

- MP3 recordings on a DVD-RAM or DVD-R cannot be played back.

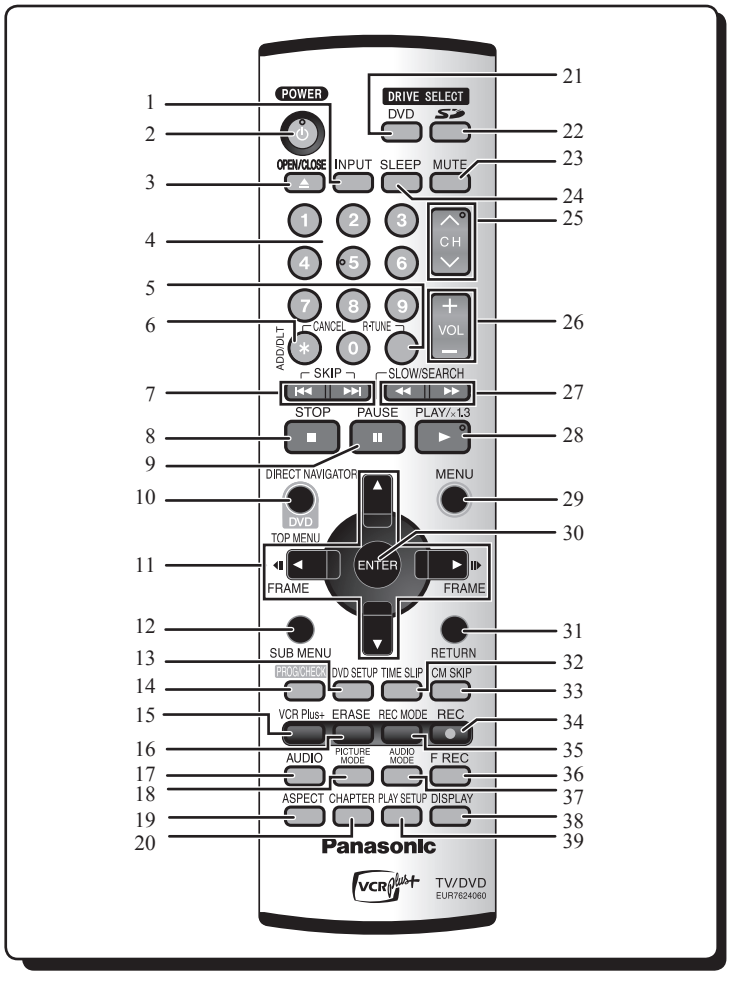
■ Naming folders and files

- MP3 files must have the extension “.MP3” or “.mp3”.
- At the time of recording, give folder and file names a 3-digit numeric prefix in the order you want them to play (this may not work at times).
- English alphabets and Arabic numerals are displayed correctly. Other characters may not be displayed correctly.



Location of Controls

Remote Control Buttons



No.	Part Name	Description	Page
1	**INPUT**	Changes input mode.	25
2	**POWER**	Turns power on and off.	21
3	**OPEN/CLOSE**	Opens/closes disc tray.	34
4	**NUMBER keys**	Directly inputs numerical data.	25
5	**R-TUNE**	Displays the last channel you were watching.	25
6	**CANCEL** **ADD/DLT**	Cancels input data. Adds/deletes channels in unit memory.	63 22
7	**SKIP ⏮/⏭**	Skips to previous/next chapter or track.	45
8	**STOP**	Stops playback, cancels resume, and stops recording.	38, 44
9	**PAUSE**	Pauses playback/recording.	38, 44
10	**DIRECT NAVIGATOR**	Displays Direct Navigator when playing a DVD-RAM and non-finalized DVD-R. Displays Disc Menu when playing a DVD Video and finalized DVD-R.	45, 51, 54

No.	Part Name	Description	Page
11	**▲▼◄►**	Use to move cursor for item selection in menu and operation screens. During a paused picture, ◄II / II► operates Frame Advance.	22 46
12	**SUB MENU**	Displays sub menu while using Direct Navigator or Play list for editing.	51, 56, 58
13	**DVD SETUP**	Use to perform initial DVD setup.	67
14	**PROG/CHECK**	Use when programming a timer recording and when displaying timer recording information.	41
15	**VCR Plus+**	Makes setting timer recordings quick and easy.	40, 41
16	**ERASE**	Erases recording content.	47
17	**AUDIO**	Switches the Audio mode.	27, 48
18	**PICTURE MODE**	Changes picture adjust mode. (STANDARD, CINEMA, VIVID)	32
19	**ASPECT**	Changes display aspect ratio.	26
20	**CHAPTER**	Records the playback position.	48
21	**DRIVE SELECT-DVD**	Selects DVD drive.	34
22	**DRIVE SELECT-SD**	Selects SD (card) drive.	34
23	**MUTE**	Places unit in Mute mode.	26
24	**SLEEP**	Sets the sleep timer.	25
25	**CH ▲▼**	Changes channels.	25, 38
26	**VOL +/-**	Adjusts volume.	25
27	**SLOW/SEARCH ◄◄/►►**	Searches for previous/next scene. Pressing during pause mode starts slow motion playback. Pressing ◄◄ or ►► to change slow motion direction.	45, 46
28	**PLAY/×1.3**	Begins playback. Holding down for 1 second switches to fast playback.	44
29	**MENU**	Displays TV menu.	22
30	**ENTER**	Uses when finalizing menu entries.	22
31	**RETURN**	Uses when returning to the normal screen from a menu. Uses when returning to the previous screen during setup.	22
32	**TIME SLIP**	Skips over a specified time on the disc.	42, 46
33	**CM SKIP**	During playback, skips ahead 1 minute.	45
34	**REC**	Begins recording.	38
35	**REC MODE**	Sets to DVD Record mode.	38
36	**F REC**	Sets Flexible Recording.	39
37	**AUDIO MODE**	Changes audio adjust mode. (AUTO, STANDARD, DYNAMIC)	31
38	**DISPLAY**	Displays operation status.	27, 35, 54
39	**PLAY SETUP**	Changes the initial playback settings during play.	49

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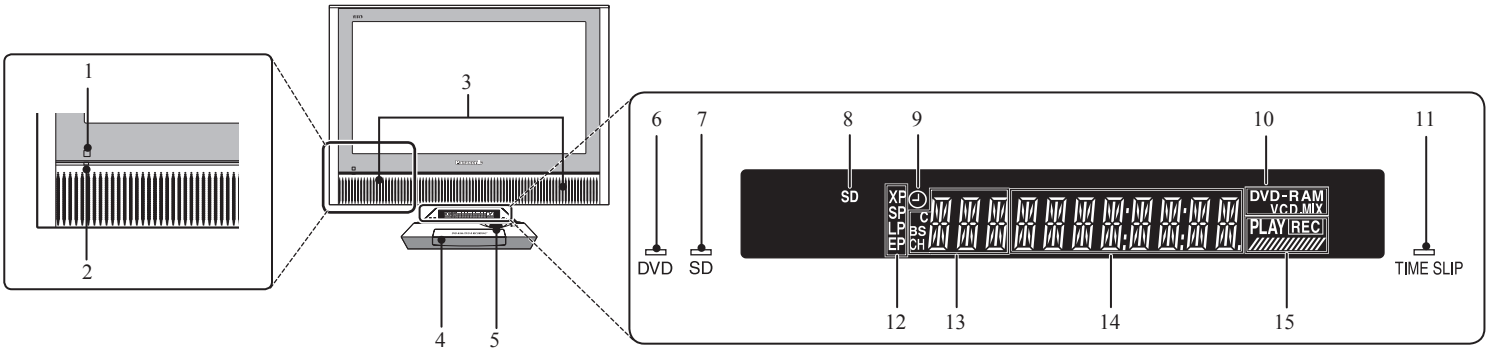
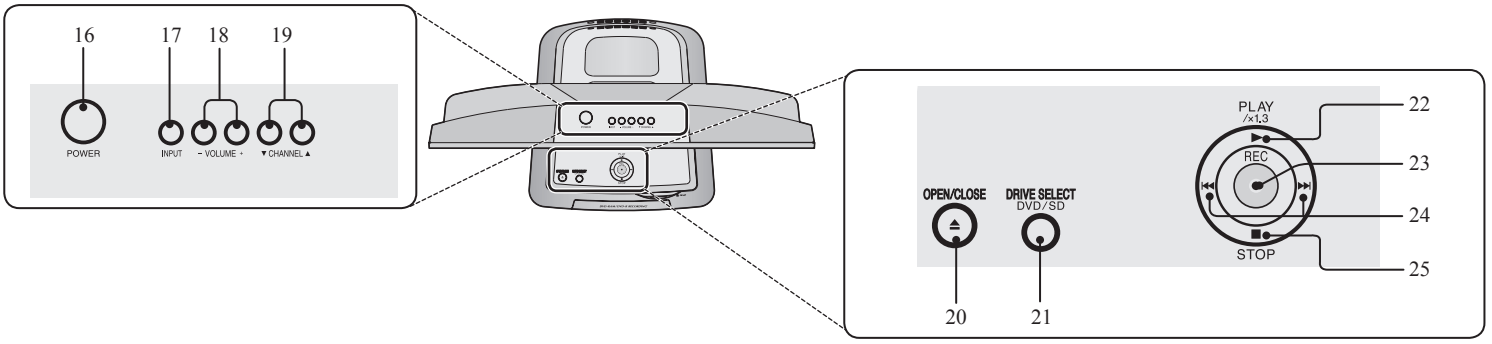
Unit Buttons

■ Front View



■ Top View

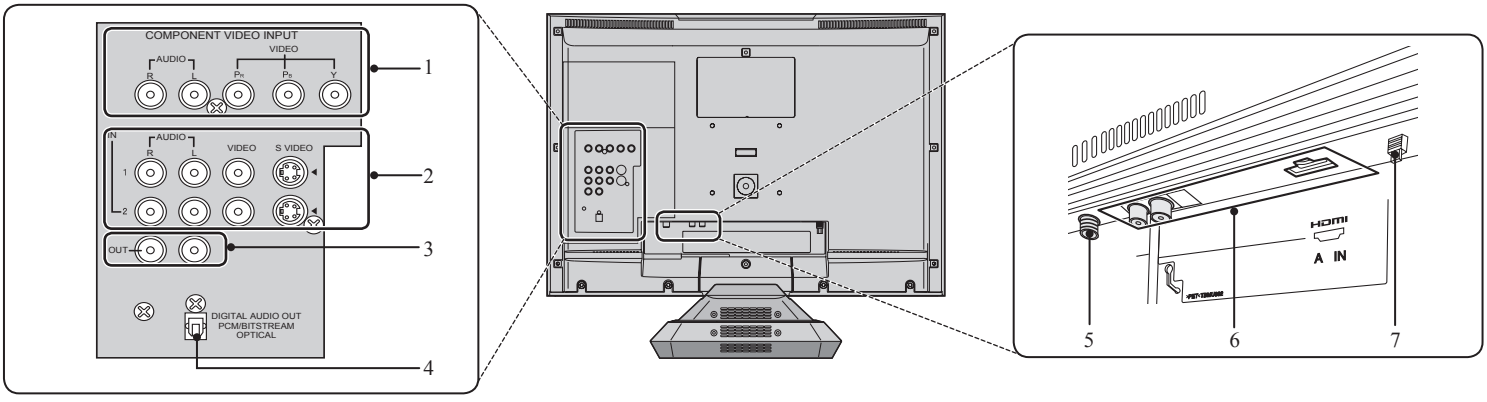


No.	Part Name	Description	Page
1	**Remote Sensor**	Receives infrared signal from Remote Control.	–
2	**POWER Indicator**	Lights when power is on. Standby: Red On: Green	–
3	**Built-in Speaker**	Equipped with a front speaker.	–
4	**Disc Tray**	Place compatible discs here.	34
5	**SD Card Slot**	Place compatible cards here.	34
6	**DVD Indicator**	Lights when in DVD mode.	34
7	**SD Indicator**	Lights when in SD mode.	34
8	**SD Indicator**	On: When a card is set in this unit. Flashes: When a card is being read or written.	34
9	**Timer Recording display**	On: When timer recording is on standby. Flashes: When the unit couldn't go to timer recording standby.	40, 41
10	**Disc Type***	Displays Disc media being used.	–
11	**TIME SLIP Indicator**	Lights when simultaneously playing and recording a DVD.	42
12	**Recording mode**	Recording Mode Displays Disc of recording. (When FR is selected all lights go out.)	39

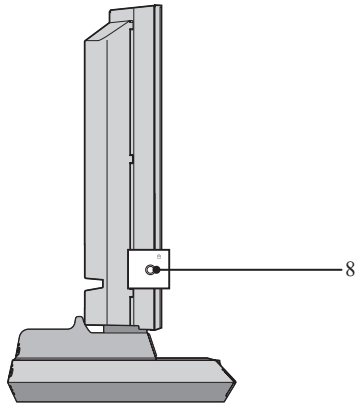
No.	Part Name	Description	Page
13	**Channel**	Displays channel. Displays title number during playback.	38
14	**Main display section**	Recording and play counter, and other miscellaneous messages.	38, 44
15	**Disc operation status**	Displays condition of playback/ recording.	38, 44
16	**POWER**	Turn the unit on or off.	21
17	**INPUT**	Changes Input position.	25
18	**VOLUME +/-**	Adjusts volume.	25
19	**CHANNEL ▲▼**	Changes channels.	25, 38
20	**OPEN/CLOSE**	Opens/closes disc tray.	34
21	**DRIVE SELECT DVD/SD**	Select the drive.	34
22	**PLAY/×1.3**	Begins playback. Holding down for 1 second switches to fast playback.	44
23	**REC**	Begins recording.	38
24	**SKIP I◀◀/▶▶I**	Skips to previous/next chapter or track.	45
25	**STOP**	Stops playback, cancels resume, and stops recording.	38, 44

* D. MIX (Multi-channel DVD-Audio only)
On: Down-mixed audio is played. (p. 70)
Off: The disc prevents down-mixing so only the two front channel can be played.

■ Rear View



■ Left Side View



No.	Part Name	Description	Page
1	**Component signal Input connector**	Input the Component signal (Y, P_B, P_R) from other equipment.	16
2	**Video Input 1, 2 connector**	Connect from other equipment.	16
3	**Audio Out connector**	Outputs audio signal. (Analog)	19
4	**Optical digital Audio Out connector**	Outputs audio signal. (Digital)	18
5	**VHF/UHF Antenna Input terminal**	Input terminal for an antenna or cable box signal.	15

No.	Part Name	Description	Page
6	**HDMI Input terminal**	Connect the HDMI cable. (For analog, also connect the audio cables.)	17
7	**AC Power Plug**	When plugged into an AC outlet, this unit consumes 0.8 W of electric power in OFF condition.	–
8	**Phones Jack (M3)**	Connect a Headphones.	20

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Connections

Notes on connections
- Turn off the power supply for all components before making any connections.
- If the cables necessary for connecting a component to the system are not included with the component or available as an option, you may need to fashion a cable to suit the component concerned.
- Read the instruction manual for each system component carefully before connecting it.

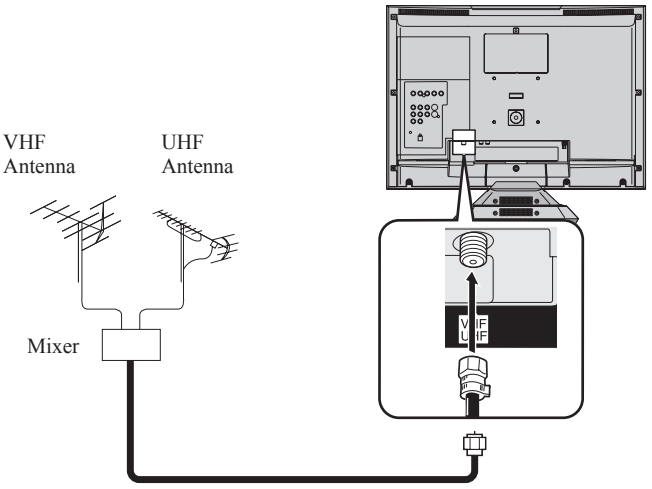
Connecting the RF in Terminal

⚠ CAUTION

Overtightening "Nut type" RF coaxial cables may damage jacks. Finger tighten only.

Antenna Connection

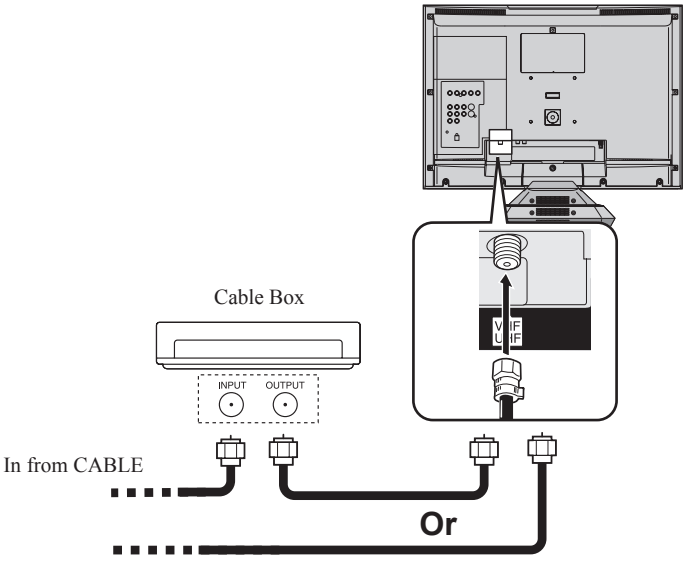
Connect the cable from Antenna to the VHF/UHF terminal on the unit.



Cable Connection

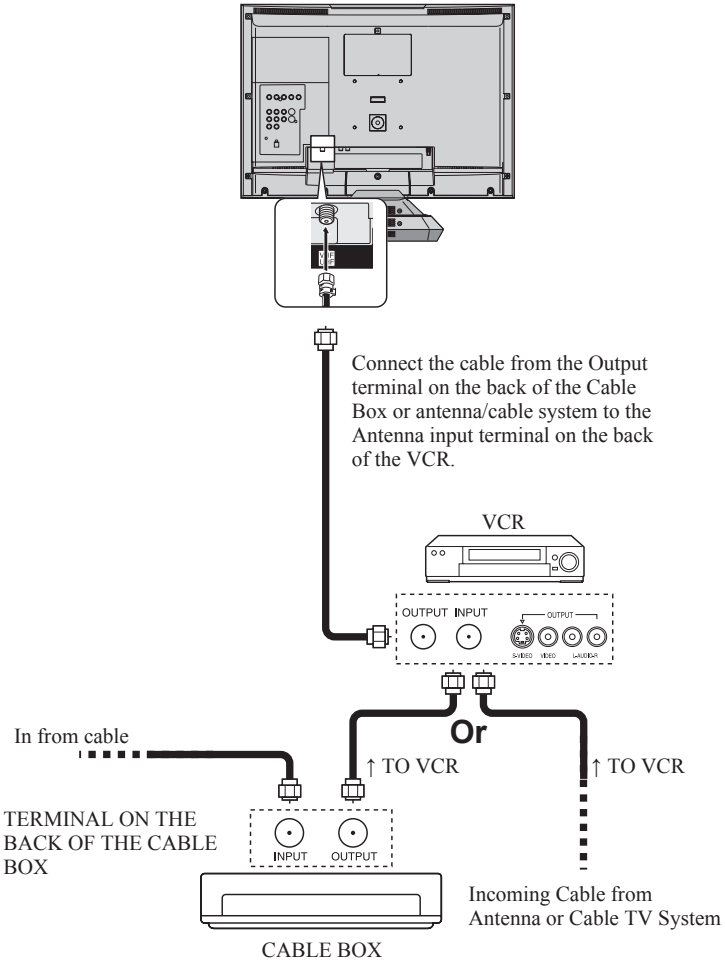
Connect the cable supplied by your local cable company to VHF/ UHF terminal on the unit.

Note to CABLE system installer:
This reminder is provided to call the CABLE (Cable TV) System Installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.



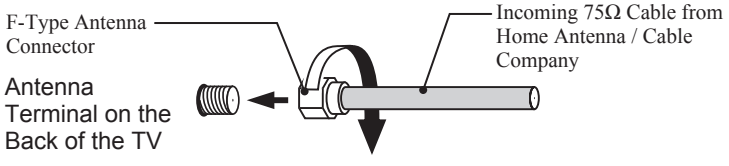
Connecting the Antenna / Cable to the RF IN Terminal (VCR)

Use this configuration when connecting the LCD TV Antenna and Cable TV system using VCR.



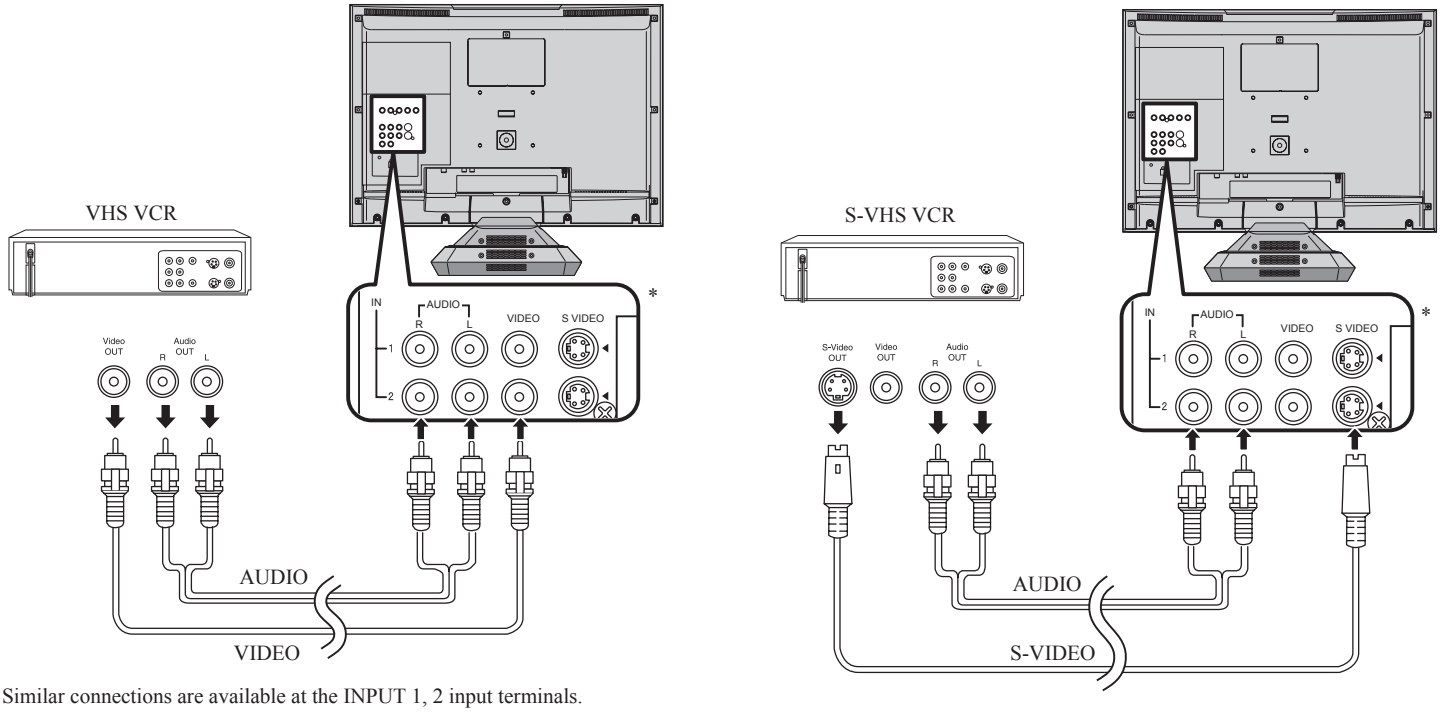
Note:
- When the RF coaxial cable is connected to the projection display VHF/ UHF terminal via a cable box or VCR, set the TV channel to CH3 or CH4. This does not apply when signal is input from VIDEO INPUT.

■ Cable / Antenna Connection



Connecting the “1, 2” AV Input Terminals

■ Connects VCRs and other peripheral equipment



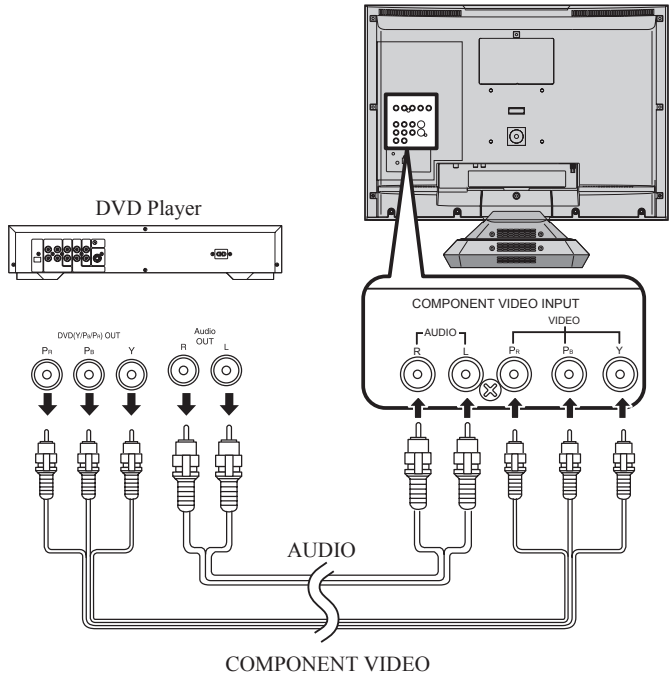
* Similar connections are available at the INPUT 1, 2 input terminals.

Notes:

- When connecting video cables, priority is given to the S-Video cable when both the S-VIDEO input terminal and the VIDEO input terminal are connected.
- Please make inquiries to video game manufacturers concerning component cables to connect with video game console.
- Select the desired VIDEO input position by pressing the INPUT button. (p. 25)

Connecting the COMPONENT VIDEO Input Terminals

Because each Y, PB, and PR signal is input independently, the Component signal allows for more accurate color reproduction. The Component signal output terminal indication will differ according to the output device (Y, PB, PR). Please read the operating instructions included with the output device.



Notes:

- Select the desired COMPONENT VIDEO INPUT position by pressing the INPUT button. (p. 25)
- Component video signals that can be input are 480i, 480p, 720p, and 1 080i.
- You cannot record the programs using this connection.

■ Component Signals (Y, PB, PR) that can be Input

Mode type		Signal data			Information menu display
		No. of dots (H × V)	Horizontal frequency (kHz)	Vertical frequency (Hz)	
DTV Format Signals	480i	664 × 485	15.73	29.97	480 i
	480p	720 × 483	31.47	59.94	480 p
	*720p	1 280 × 720	45.00	60.00	720 p
	1 080i	1 920 × 1 080	33.75	30.00	1 080 i

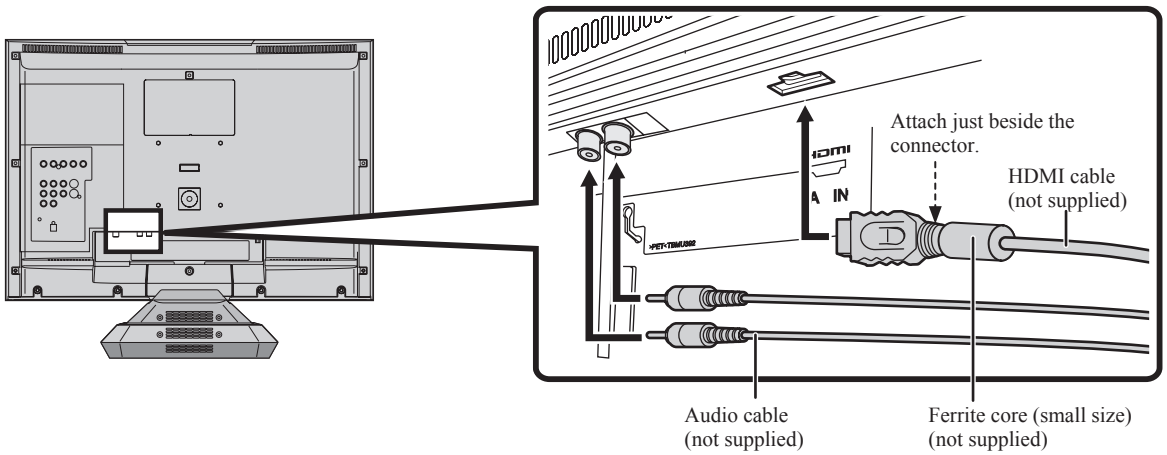
- Input signals, other than those listed with a * mark, will give you a beautiful, stable picture.

For assistance, please call : 1-800-211-PANA(7262) or, contact us via the web at:http://www.panasonic.com/contactinfo

HDMI Connection

HDMI[*1] (High Definition Multimedia Interface) is the first all digital consumer electronics A/V interface that supports uncompressed standard. The HDMI terminal supports both video and audio information.
You can connect an EIA / CEA-861 / 861B[*2] compliant consumer electronic device, such as a Set Top Box or DVD player with HDMI or DVI output terminal to the HDMI[*1] input terminal.

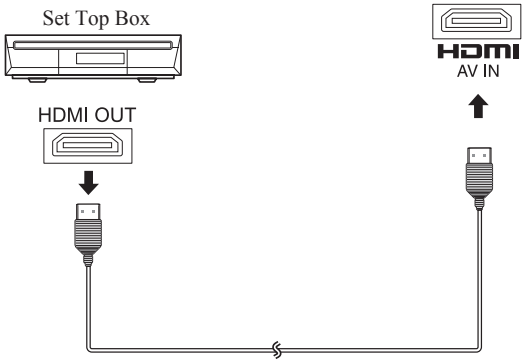
Input a High-bandwidth Digital Content Protection (HDCP) high-definition picture source to this HDMI terminal, so you can display high-definition pictures on this TV in the digital form.



Connection diagram

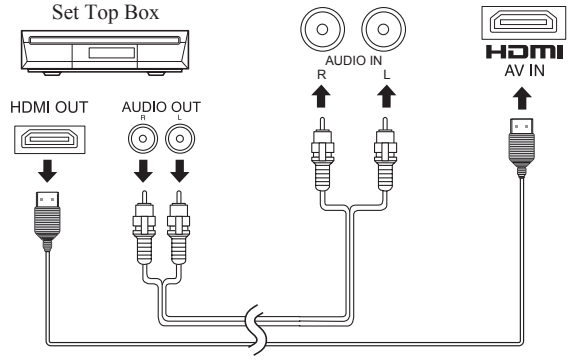
Follow the diagram below to connect the unit to a set top box or a DVD player.

■ When audio signal input is digital



The connector on the unit is HDMI Type A connector.

■ When audio signal input is analog



The connector on the unit is HDMI Type A connector.

Notes:

- If the external device has DVI output only, use a DVI to HDMI adapter cable[*3] to connect to the HDMI terminal.
- Connect the audio cables to the AUDIO IN terminals for HDMI.
- Select the audio setting in HDMI IN. (p. 32)
- You cannot record the programs using this connection.

■ Compatible VIDEO Signal

	No. of dots (H × V)	Vertical scanning frequency (Hz)
1080i	1 920 × 1 080i	59.94 / 60
720p	1 280 × 720p	59.94 / 60
480p	720 × 480p 640 × 480p	59.94 / 60 59.94 / 60
480i	720 (1 440) × 480i	59.94 / 60

This input terminal is not intended for use with computers.

■ Compatible sampling frequency of AUDIO signal (L.PCM) : 48 kHz / 44.1 kHz / 32 kHz

Notes:

- This HDMI connector is Type A.
- If you connect an equipment without a digital output terminal, connect to the COMPONENT VIDEO, S-VIDEO or VIDEO input terminal on the TV so you can enjoy an analog signal.

[*1] HDMI, the HDMI logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing LLC.

[*2] EIA / CEA-861 / 861B profiles compliance covers profiles for transmission of uncompressed digital video including high bandwidth digital content protection.

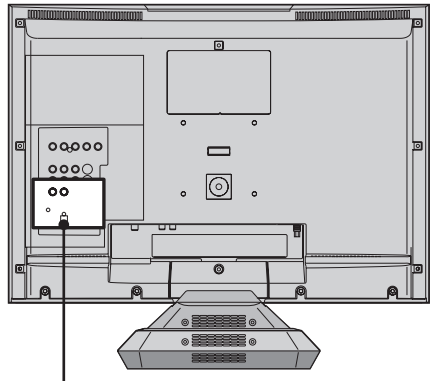
[*3] HDMI-DVI conversion cable (TY-SCHO3DH): available on Panasonic website (www.panasonic.com). Consult your consumer electronics dealer for availability details.

Connecting the Audio Output Terminal

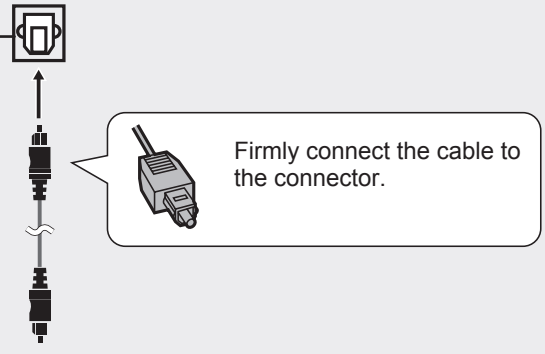
Enjoy the powerful movie theater and hall-like sound available with multiple channel audio found on DVDs by connecting an amplifier and speakers. There are two types of connection, digital and analog.

Note:

• It is outputted in DVD playback only.



■ Digital connection

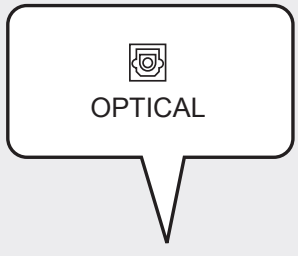


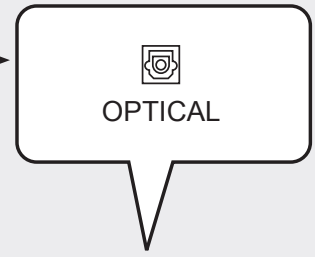
Connect an AV amplifier with Dolby Digital or DTS decoders

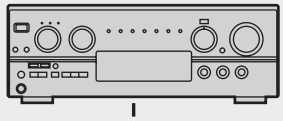
Enjoy “Dolby Digital” or “DTS” surround sound.

Connect a Digital amplifier

Smart one-line connection is possible.

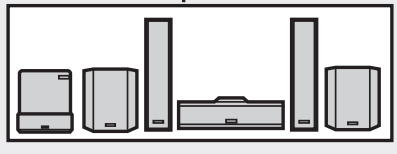




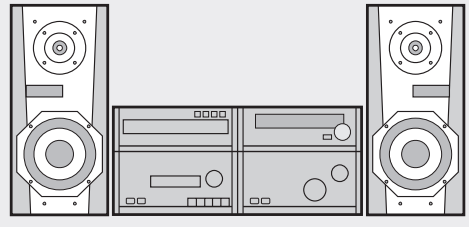


Amplifier with built in Dolby Digital or DTS decoders.

Speakers (example)



Please see amplifier manual for speaker requirements.



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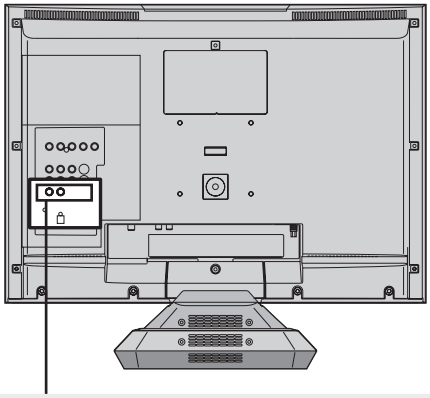
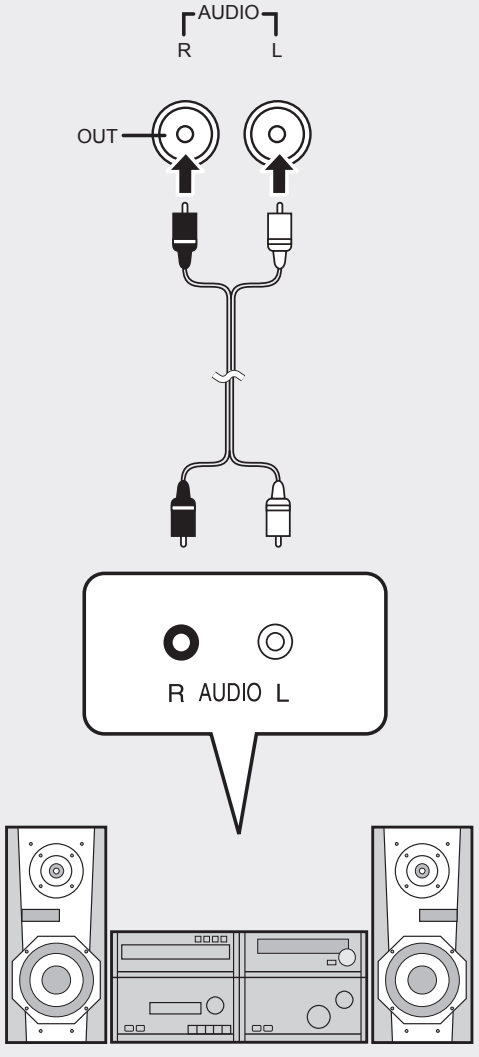


■ Analog connection

Connect an analog amplifier to enjoy high-quality stereo sound.



IMPORTANT NOTE:

Caution for optical digital audio output connector:

- Be sure to refer to pages 67~69 regarding output settings of Dolby Digital, dts, and PCM.
- CDs can be played as usual.
- Audio from the Digital Audio Out terminal is only output during playback.
- When connecting an amplifier which contains the Dolby Digital or dts decoder, be sure to select “Bitstream”. When connecting an amplifier which does not contain the Dolby Digital or dts decoder, be sure to select “PCM”. (pp. 67~69) Otherwise, attempting to play a DVD may cause such a high level of noise that it may harm your hearing and damage your speakers.

Notes:

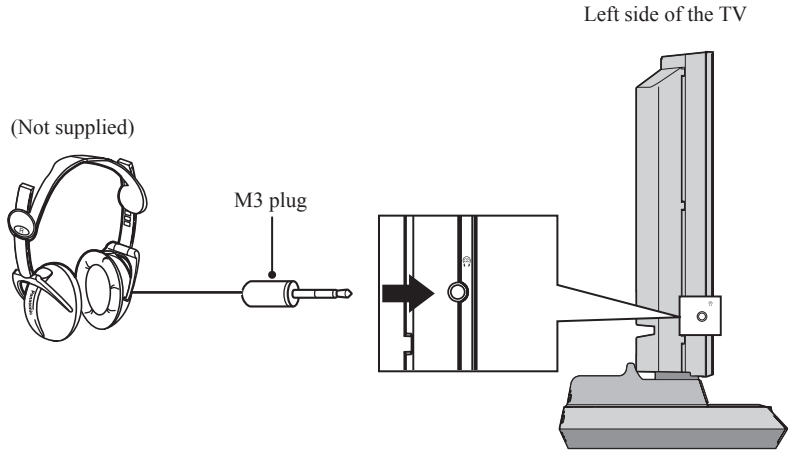
- Some dts decoders which do not support DVD-dts Interface may not work properly with the unit.
- Avoid bending/ twisting the optical digital cable when connecting.

For your reference:

- Dolby Digital is a digital sound compression technique developed by the Dolby Laboratories Licensing Corporation. Supporting 5.1-channel surround sound, as well as stereo (2-channel) sound, this technique enables a large quantity of sound data to be efficiently recorded on a disc.
- LPCM is a signal recording format used in CDs. While CDs are recorded in 44.1 kHz/16 bit, DVDs are recorded in 48 kHz/16 bit up to 96 kHz/24 bit.
- If you have a Dolby Pro Logic Surround decoder, you will obtain the full benefit of Pro Logic from the same DVD movies that provide full 5.1 channel Dolby Digital soundtracks, as well as from titles with the Dolby Surround mark. For information on Panasonic or Technics Dolby Pro Logic Surround Sound Decoders please contact your local dealer.

Manufactured under license from Digital Theater Systems, Inc. US Pat. No’s. 5,451,942, 5,956,674, 5,974,380, 5,978,762, 6,487,535 and other U.S. and world-wide patents issued and pending. “DTS” and “DTS 2.0 + Digital Out” are trademarks of Digital Theater Systems, Inc. Copyright 1996, 2003 Digital Theater Systems, Inc. All Rights Reserved.

Connecting the Headphones / Earphones Jack



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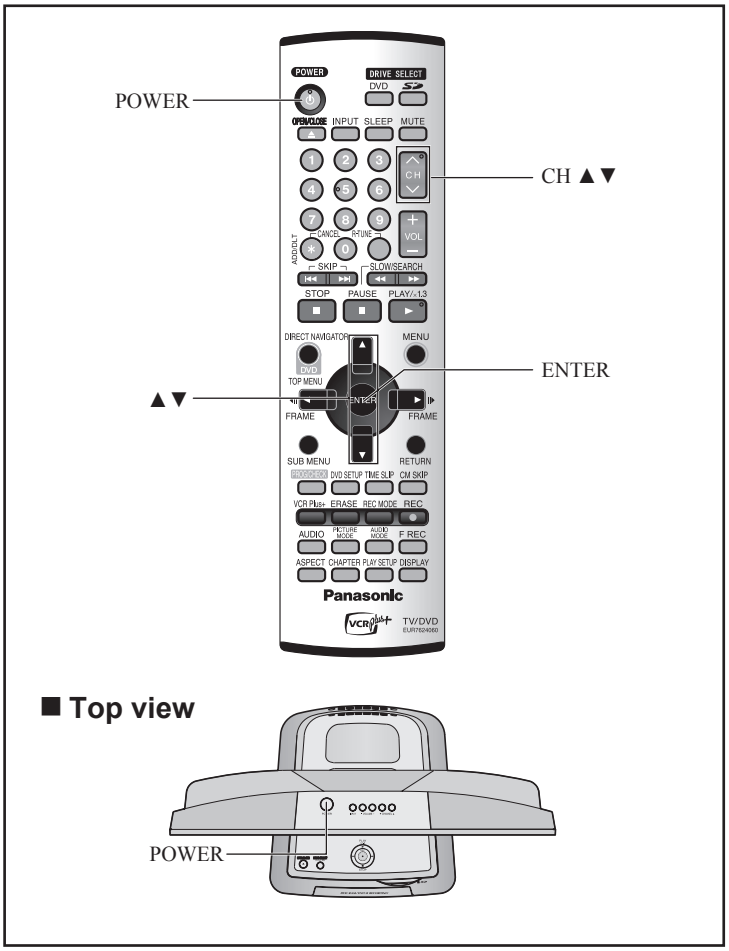
Initial Setup –Ready to Play–



Initial Setup (Ready to Play)

After plugging the unit into your household AC outlet and pressing POWER to turn the unit on for the first time, the unit assists you to set the on-screen language, and automatically tunes in all the channels it can receive and sets the clock.

The unit automatically determines the type of transmission (airwaves or cable) and puts them into channels as follows.

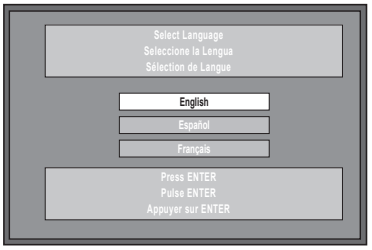
	Band	Channel
TV Mode (Airwaves)	VHF	2-13
	UHF	14-69
CATV Mode (Cable)	VHF	2-13
	CATV LOW BAND	95-99
	CATV MID/SUPER BAND	14-36
	CATV HYPER BAND	37-65
	ULTRA BAND	66-94 100-125
	SPECIAL CATV CHANNEL	1

Preparation

- Turn on the television and select the appropriate video input to suit the connections to this unit.
- Confirm that the antenna is connected correctly.

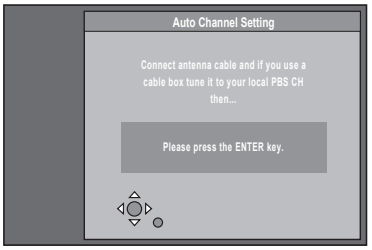
1 Press POWER.

- For remote POWER button to function, unit POWER must be ON.

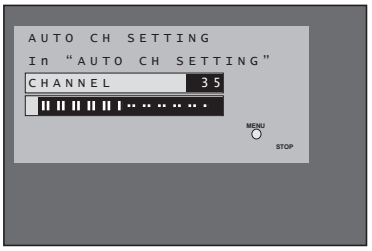


2 Press ▲▼ to select the language and press ENTER.

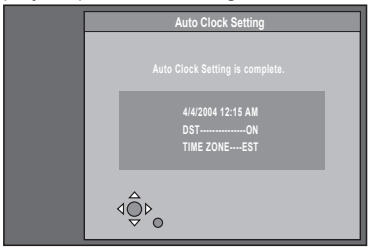
3 Press ENTER.



4 Press ENTER to start Auto Channel Setting.



- The unit then proceeds with Auto Clock Setting. The time is displayed when finished.
- If "No Channels found..." is displayed, press ENTER again.



- DST, Daylight Saving Time, shows the summertime setting.
- TIME ZONE shows the time difference from Greenwich meantime (GMT).

EST (Eastern Standard Time)	=	GMT –5
CST (Central Standard Time)	=	GMT –6
MST (Mountain Standard Time)	=	GMT –7
PST (Pacific Standard Time)	=	GMT –8
AST (Alaska Standard Time)	=	GMT –9
HST (Hawaii Standard Time)	=	GMT –10
For other areas: xx hr		

5 Press ENTER.

■ If the clock is an hour slower or faster than the actual time

Select "–1" or "+1" in "Time Zone Adjust" in the SETUP menu. (p. 23)

■ If the unit couldn't set the clock automatically

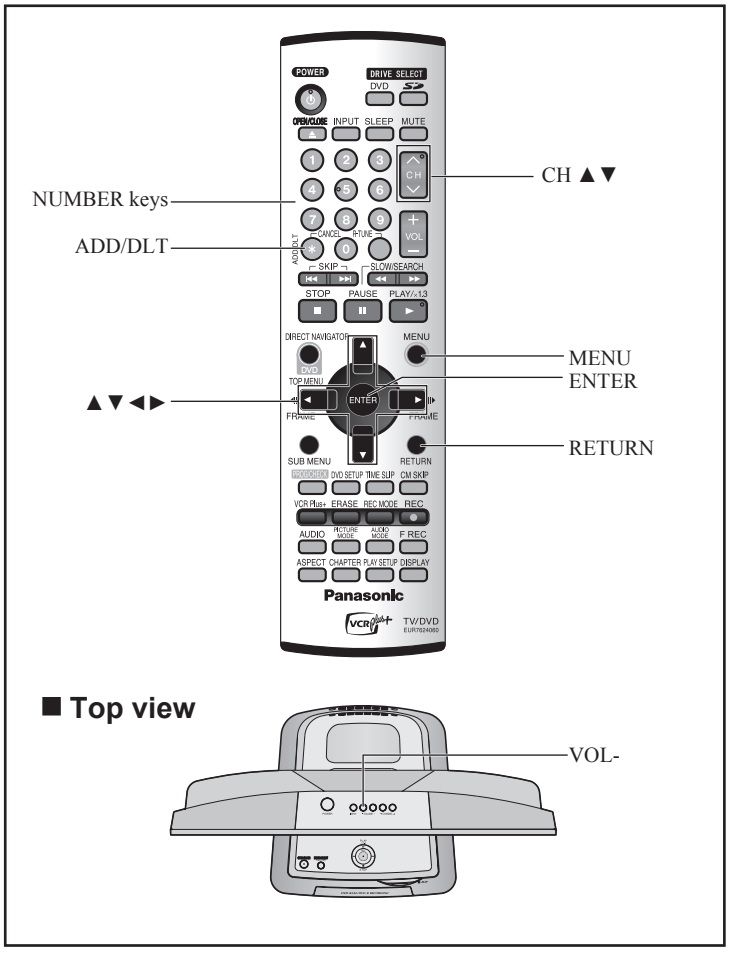
Set the time manually. (Refer to "Manual Clock Setting" on page 23.)

■ To start Auto Channel Setting again (after relocation, for example)

Reset the unit. (Refer to "Reset all unit Memory Functions" on page 24.)

Antenna system and VCR Plus+ guide channel settings all revert to the default values.

Tuning TV

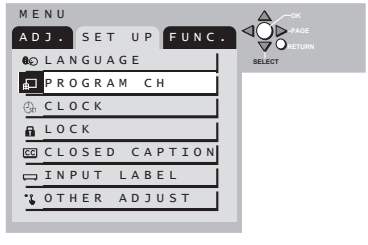


Automatic Channel Setting

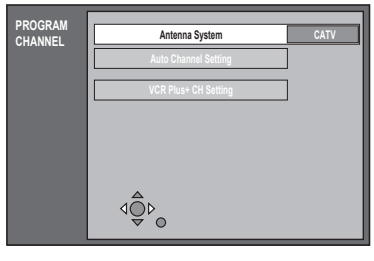
1 **Press MENU.**

2 **Press ◄► to select “SET UP.”**

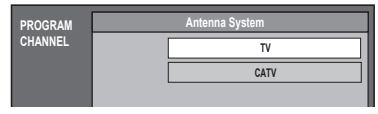
3 **Press ▲▼ to select “PROGRAM CH” and press ENTER.**



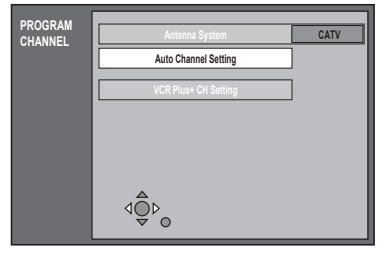
4 **Press ▲▼ to select “Antenna System” and press ENTER.**



5 **Press ▲▼ to select “TV” or “CATV” and press ENTER.**



6 **Press ▲▼ to select “Auto Channel Setting” and press ENTER.**



7 **Press ENTER.**

- Auto Channel Setting starts. This takes a few minutes.
- Channels will automatically advance until all channels have been scanned. Channel numbers with video signal received will be stored in the Channel Memory.

8 **Press ENTER.**

■ To exit the screen

Press RETURN.

Notes:

- After Auto Channel Setting finishes, the lowest channel number added will be displayed.
- When there are no receivable channels, channel 69 (for TV) or channel 125 (for cable TV) is displayed.

Adding and deleting channels

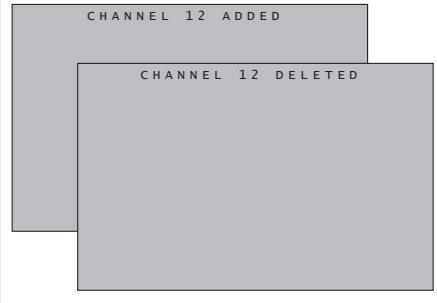
Add or delete channels if necessary channels are not set or unnecessary channels are set.

1 **Press NUMBER keys to select a channel.**

e.g., 5: [0] → [5]
15: [1] → [5]
115: [1] → [1] → [5]

- You also use CH ▲▼ when you are going to delete a channel.

2 **Press ADD/DLT.**



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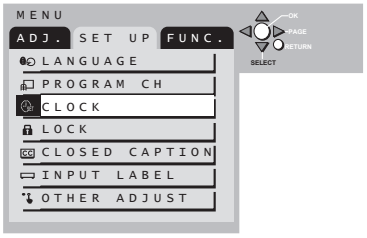
Clock Settings

1 **Press MENU.**

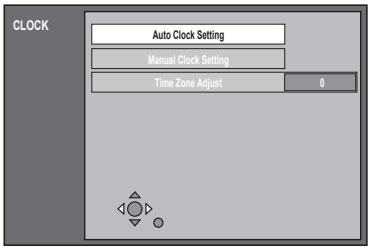
2 **Press ◄► to select “SET UP.”**

3 **Press ▲▼ to select “CLOCK” and press ENTER.**



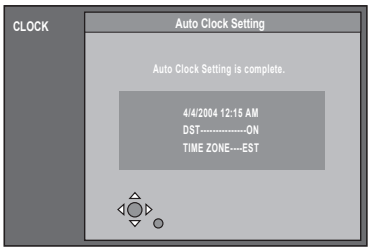
Auto Clock Setting

4 **Press ▲▼ to select “Auto Clock Setting” and press ENTER.**



5 **Press ENTER.**

- Auto Setting starts. This can take some time, up to a few hours in some cases. The following screen appears when setting is complete.



- DST, Daylight Saving Time, shows the summertime setting.
- TIME ZONE shows the time difference from Greenwich meantime (GMT).

EST (Eastern Standard Time)	=	GMT –5
CST (Central Standard Time)	=	GMT –6
MST (Mountain Standard Time)	=	GMT –7
PST (Pacific Standard Time)	=	GMT –8
AST (Alaska Standard Time)	=	GMT –9
HST (Hawaii Standard Time)	=	GMT –10

For other areas: xx hr

6 **Press ENTER.**

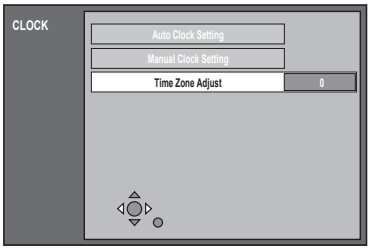
■ To cancel partway

Press RETURN.

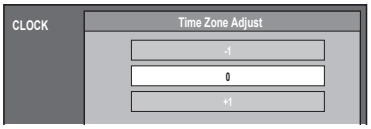
Time Zone Adjust

Adjust the time zone (-1 or +1) if it was not set correctly with auto clock setting.

4 **Press ▲▼ to select “Time Zone Adjust” and press ENTER.**

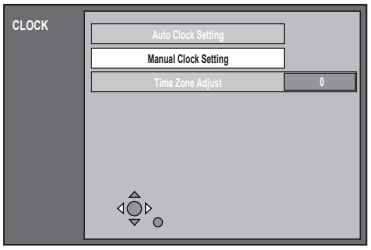


5 **Press ▲▼ to select “-1” or “+1” and press ENTER.**



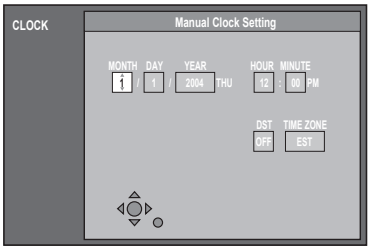
Manual Clock Setting

4 **Press ▲▼ to select “Manual Clock Setting” and press ENTER.**



5 **Press ◄► to select the item you want to change and press ▲▼ to change the setting.**

- DST (Daylight Saving Time): ON or OFF
  If you select “ON”, the clock is advanced one hour starting at 2 a.m. on the first Sunday in April and ending at 2 a.m. on the last Sunday in October.
- Time Zone (see above)



6 **Press ENTER.**

- The clock starts.

■ To return to the previous screen

Press RETURN.

VCR Plus+ guide channel Settings

Set these guide channels so you can use the VCR Plus+ programming number for timer recording. Before starting the settings, prepare a chart showing the channels, station names, and guide channels.

e.g.,

Station name	Guide channel	Channel number	Channel setting
CBS	04	04	Unnecessary
HBO	33	15	Enter channel 15 next to Guide Channel 33.
Nickelodeon	38	20	Enter channel 20 next to Guide Channel 38.

Look up the guide channels for the stations in magazines.

Write down all the stations you can receive.

Note:

- If you have connected a cable TV box or satellite receiver, the VCR Plus+ system does not work so you do not have to set the guide channels.

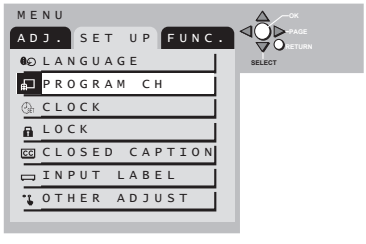
Preparation

- Complete Auto Channel Setting. (pp. 21, 22)

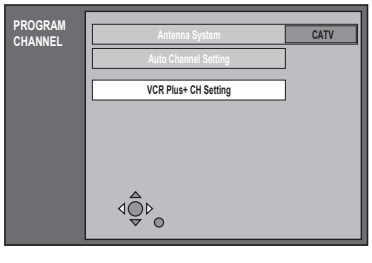
1 **Press MENU.**

2 **Press ◄► to select “SET UP.”**

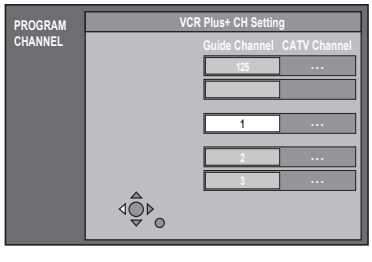
3 **Press ▲▼ to select “PROGRAM CH” and press ENTER.**



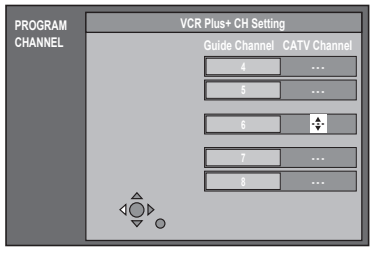
4 **Press ▲▼ to select “VCR PLUS+ CH Setting” and press ENTER.**



5 **Press ▲▼ to select the guide channel you want to set and press ►.**



- When selecting the guide channel, press and hold ▲▼ to scroll the screen up and down.



6 **Press ▲▼ to select the channel corresponding to the guide channel and press ◄.**

- To delete a number, press CANCEL.
- Repeat steps 5 and 6 to enter other channels.

7 **Press ENTER.**

■ To exit the screen

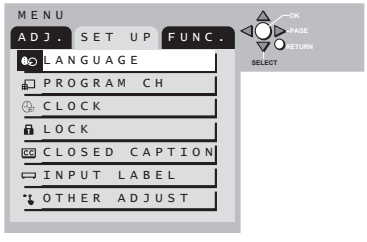
Press RETURN.

Change Language Setting

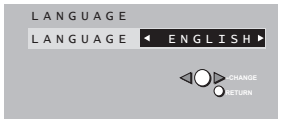
1 **Press MENU.**

2 **Press ◄► to select “SET UP.”**

3 **Press ▲▼ to select “LANGUAGE” and press ENTER.**



4 **Press ◄► to select Language.**



5 **Press RETURN twice to exit.**

Reset all unit Memory Functions

Returns to factory setting. Use if relocating unit, or if Initial Setup needs to be redone.

- Make sure a disc is not inserted in unit.

1 **Turn the unit Power on.**

2 **Press MENU.**

3 **Press ◄► to select “SET UP.”**

4 **Press ▲▼ to select “LOCK” and press ENTER.**

5 **Hold down both MUTE on the Remote Control and VOL- on the unit.**

- The power will shut off.

6 **Perform “Initial Setup” on page 21.**

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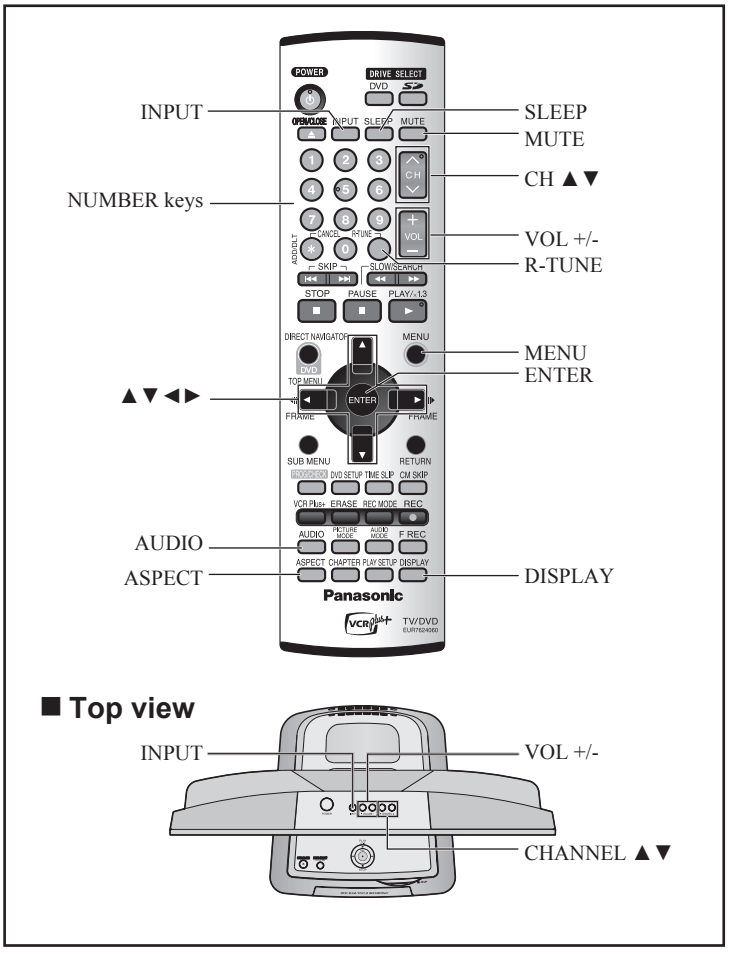
TV Operation



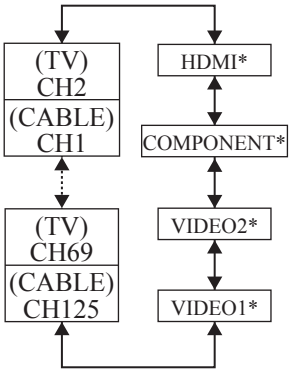
Selecting Input Mode

Method 1

1 Press CH ▲▼.
- The display will change as follows.

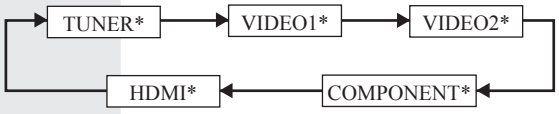
Notes:
- The diagram at right is an example.
- TV CH 2 and CABLE CH 1 represent the lowest channels in memory, while TV CH 69 and CABLE CH 125 represent the highest channels in memory.

* If SKIP is set as the INPUT LABEL setting, the mode will not be changed. (p. 28)



Method 2

1 Press INPUT.
- The display will change as follows.



* If SKIP is set as the INPUT LABEL setting, the mode will not be changed. (p. 28)

■ **TUNER:**
Signal of source connected to VHF/UHF terminal is displayed.

■ **VIDEO 1:**
Signal of source connected to AV Input terminal 1 is displayed.

■ **VIDEO 2:**
Signal of source connected to AV Input terminal 2 is displayed.

■ **COMPONENT:**
Signal of source connected to COMPONENT Input terminal is displayed.

■ **HDMI:**
Signal of source connected to HDMI Input terminal is displayed.

Using the CH/VOL Button

■ **Select desired channel:**
Press CH ▲▼ or NUMBER keys.

■ **Adjust desired volume level:**
Press VOL + or VOL –.

Using the NUMBER keys

When selecting CABLE channels 100 to 125 with the NUMBER keys.

■ **Example 1:**
To select channel 125, first press the 1 key, then 2, then 5.

■ **Example 2:**
To select channel 12, first press the 1 key, then 2.

■ **Example 3:**
To select channel 2, first press the 0 key, then 2.

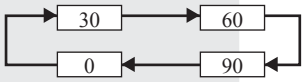
Rapid Tune

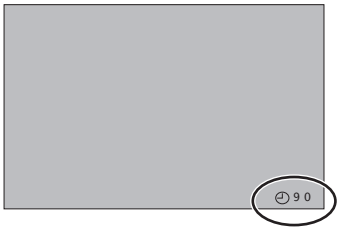
1 Press R-TUNE to display the last channel you were watching.

Sleep Timer

This unit can be set for auto power off.

1 Press SLEEP repeatedly to select the desired time.





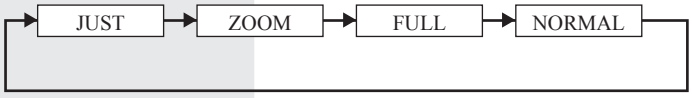
- To cancel, press SLEEP repeatedly until “0” appears.

2 The indication goes off a few seconds after the adjustment is finished.
- Pressing DISPLAY with sleep timer set displays remaining time.
- From 3 minutes prior to power off, 3, then 2, then 1 flashes on-screen.

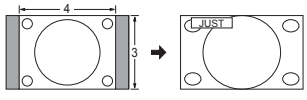
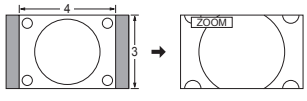
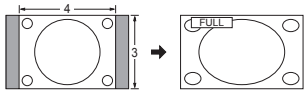
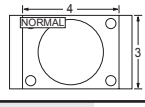
ASPECT Controls

This feature allows you to enjoy viewing the picture at its maximum size, including wide screen cinema format picture.

1 Press ASPECT to select the screen mode.



- When a 1080i or 720p signal is being received, the mode is set to FULL, and aspect is not possible.
- This feature does not work during SD mode.
- The aspect setting is stored separately for TV, VIDEO1, VIDEO2, COMPONENT, HDMI and DVD/SD.

Mode	Picture	Explanation
JUST		JUST mode will display a 4:3 picture at its maximum size but with aspect correction applied to the sides of the screen so that elongation is only apparent at the left and right edges of the screen. The size of the picture will depend on the original signal.
ZOOM		ZOOM mode magnifies the central section of the picture.
FULL		FULL will display the picture at its maximum size but with slight elongation.
NORMAL		NORMAL mode will display a 4:3 picture at its standard 4:3 size without any stretching.

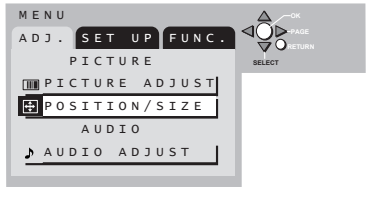
Notes:

- However, if the mode selected does not match the aspect ratio of the input signal, the original picture quality may be affected.
- If a normal (4:3) picture is projected in wide screen, distortion may occur around the edges so that part of the picture may no longer be visible. We recommend viewing in 4:3 mode so you can enjoy the picture as it was intended to be seen.

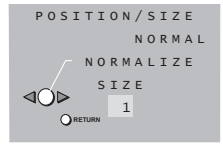
Position/Size

1 Press MENU.

2 Press ◄► to select "ADJ.".



3 Press ▲▼ to select "POSITION/SIZE" and press ENTER.

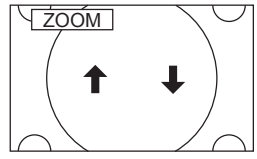


For "ZOOM" mode (See left)

■ **POSITION:**

Press ▲▼ to move the picture up or down.

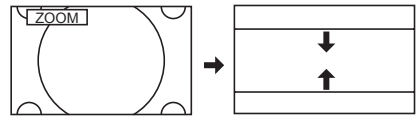
- Press ENTER to return to the original position.



■ **SIZE:**

Press ◄► to shrink the picture vertically [by 15 steps: 15 (original setting) down to 1].

- Press ENTER to return to the original setting.



For "NORMAL" and "JUST" mode (See left)

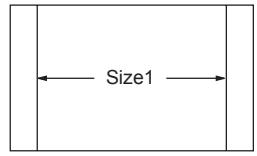
■ **SIZE:**

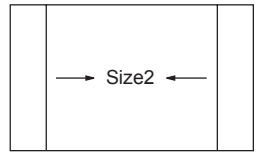
Press ◄► to select the size.

Size 1: reduces black bar.

Size 2: widens black bar.

- Press ENTER to return to the original position.





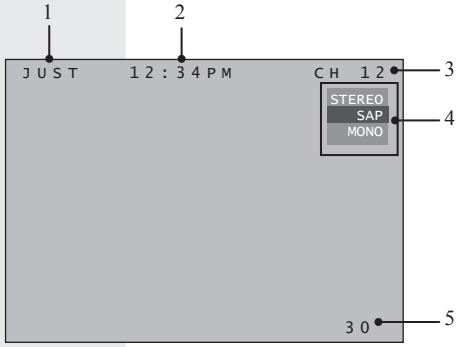
Audio Mute

1 Press MUTE to instantly mute the sound. Press again to restore the previous sound level.

For assistance, please call : 1-800-211-PANA(7262) or, contact us via the web at:http://www.panasonic.com/contactinfo

TV Status & Clock Display

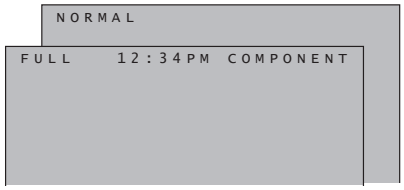
1 Press DISPLAY to display or remove the overlay.



1	Picture (Aspect) Mode
2	Current Time
3	Channel
4	Receivable Broadcast Types (see right)
5	Sleep Timer time remaining

■ Channel & Aspect Display

When you change channels or picture (aspect) mode, the channel number or picture mode will be displayed.



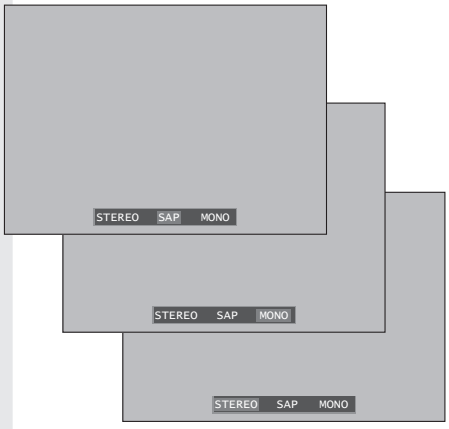
Audio Mode for TV Viewing

Equipped with dbx®-TV Noise Reduction for true MTS reproduction. dbx®-TV Noise Reduction is required for good stereo separation and audio fidelity. dbx® is a registered trademark, and is licensed by dbx® Technology Licensing.

1 Press AUDIO to select the desired audio mode as described above.

- Each press of AUDIO will change the audio mode as shown below.

< Example >



Receivable Broadcast Types

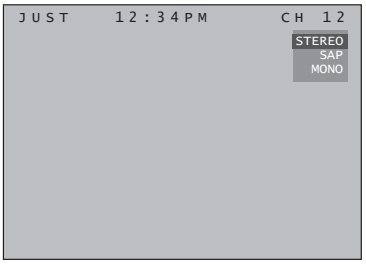
The following are possible audio broadcast types and on-screen displays.

1 Press DISPLAY to display the broadcast signal being received.

■ MTS Stereo broadcast:

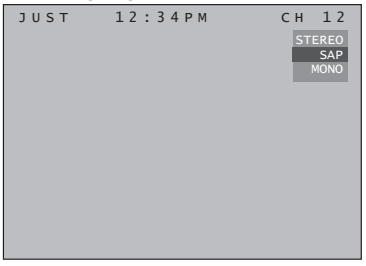
Multi-channel Television Sound Stereo broadcast. Select STEREO audio mode.

- If stereo broadcast is weak and the display flickers, select MONO audio mode for possible improvement.



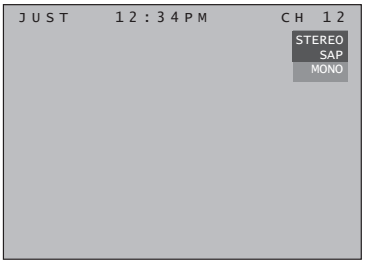
■ SAP broadcast:

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



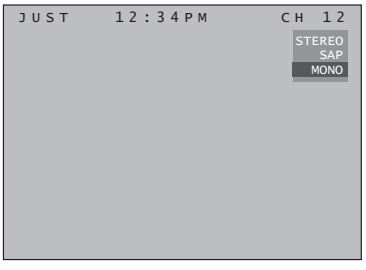
■ MTS Stereo and SAP broadcast:

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

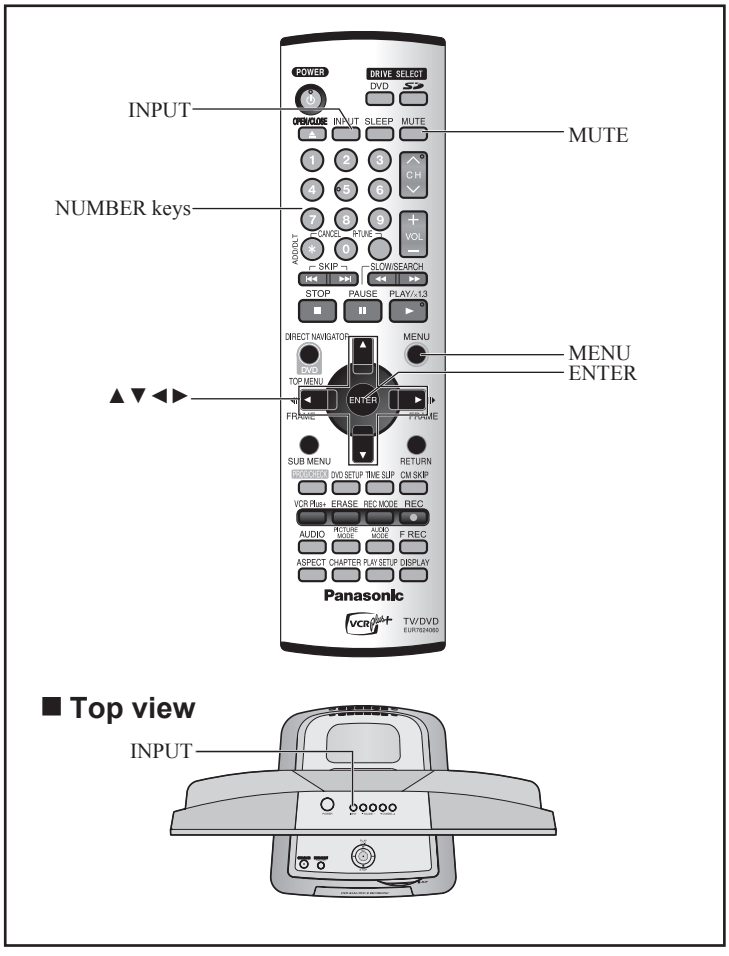


■ MONO broadcast:

Normal monaural sound broadcast.



TV Settings



■ **Top view**

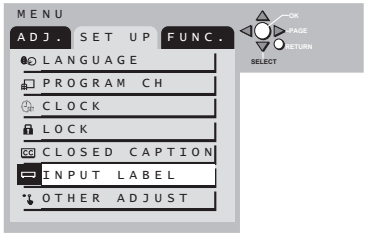
Input Label

You can change the video input labels displayed on the screen to match the connected device (VCR, DVD player etc.).

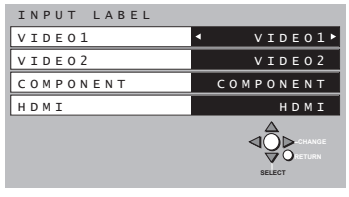
1 **Press MENU.**

2 **Press ◄► to select “SET UP”.**

3 **Press ▲▼ to select “INPUT LABEL” and press ENTER.**



4 **Press ▲▼ to select the video input, then press ◄► to select the INPUT LABEL.**
(VIDEO1/VIDEO2/COMPONENT/HDMI, VCR, LD, GAME, DVD, DTV, [BLANK] and SKIP*)
* Select to SKIP unused video input when pressing INPUT button.



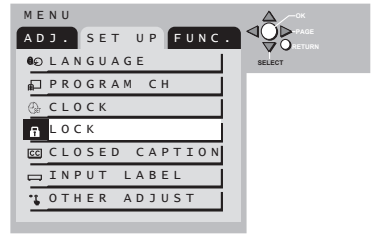
V-Chip Control Features

In the United States, the V-CHIP consists of two rating systems, which are MPAA (MOTION PICTURE) and TV PARENTAL GUIDELINES. Its function is to block programs by the rating data in the XDS data packets sent from broadcasting stations. The user can select which rating programs should be blocked by the LOCK MENU options.

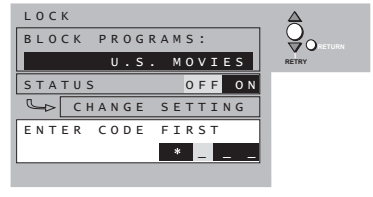
1 **Press MENU.**

2 **Press ◄► to select “SET UP.”**

3 **Press ▲▼ to select “LOCK” and press ENTER.**



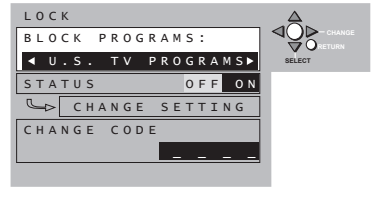
4 **Press NUMBER keys to input 4-digit code.**
- To clear the numbers while entering the code, press ▲▼.
- You will need the code to enter the LOCK menu.
- After entering your password for the first time, ENTER CODE FIRST will change to CHANGE CODE.



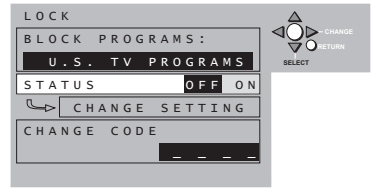
Notes:
- Use a code that is easy to remember and record it in a safe place.
- If you forget your secret code, refer to “Reset all unit Memory Functions” on page 24.

5 **Press ▲▼ to select “BLOCK PROGRAMS.”**

6 **Press ◄► to select “U.S. MOVIES,” “U.S. TV PROGRAMS,” “CANADIAN ENGLISH,” or “CANADIAN FRENCH.”**



7 **Press ▲▼ to select “STATUS” and press ◄► to select “ON” or “OFF.”**



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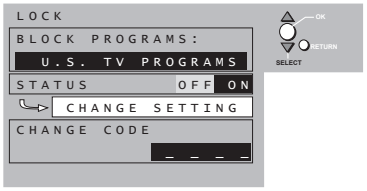
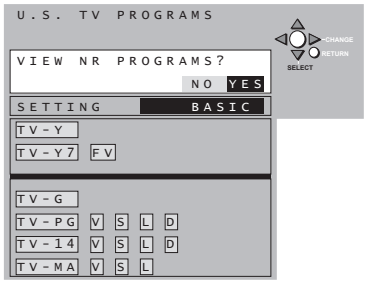
8 **Press ▲▼ to select “CHANGE SETTING” and press ENTER to enter the next menu.**



9 **Press ▲▼ to select “VIEW NR PROGRAMS?” and press ◄► to select “NO” or “YES.”**

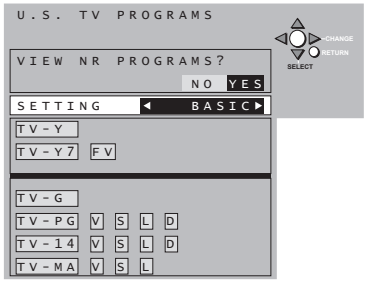
NO: Cannot view programs with NR signals.
YES: Can view programs with NR signals.



U.S. TV PROGRAMS only

10 **Press ▲▼ to select “SETTING” and press ◄► to select “BASIC” or “DETAILED.”**

BASIC:
You can select the titles.
DETAILED:
You can select the titles and options.



11 **Press ▲▼ to select the rating.**

- When a title field is selected, all ratings below this rating are selected.
- When options within an option field are selected, ratings below this rating within the same field are selected.

12 **Press ◄► to lock or unlock the rating.**

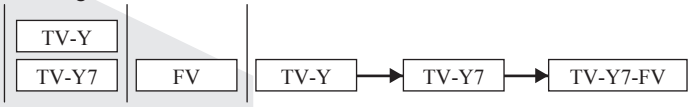
Lock (Red): Cannot view programs with NR signals.
Unlock (Green): Can view programs with NR signals.

■ U.S. MOVIES RATINGS

G	General audience
PG	Parental guidance suggested
PG-13	Parental guidance needed under 13 years old
R	Restricted
NC-17	No one under 17 is admitted
X	Pornography

■ U.S. TV PROGRAMS RATINGS

1. Ratings for children: Divided into ranks as follows.



2. Ratings for teenagers: Created out of these major categories to form various combinations. These combinations are described in the below diagram. Ratings for all ages are on top and ratings for adults are on the bottom.

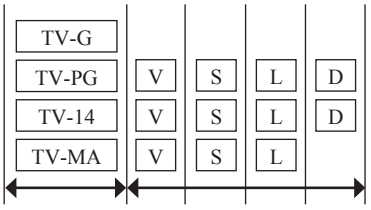


Chart 1

Age-based Group	Age-based Ratings	Possible Content Selections
NR (Not Rated)	TV-NR	• Viewable • Blocked
Youth	TV-Y	• Viewable • Blocked
	TV-Y7	• FV (Fantasy Violence) • Viewable • Blocked
Guidance	TV-G	• Viewable • Blocked
	TV-PG	• D, L, S, V (all selected) • Any combination of D, L, S, V
	TV-14	• D, L, S, V (all selected) • Any combination of D, L, S, V
	TV-MA	• L, S, V (all selected) • Any combination of L, S, V

Chart 2

TV-NR	Not Rated.
TV-Y	All Children. The themes and elements in this program are specifically designed for a very young audience including children from ages 2-6.
TV-Y7	Directed to older children. Themes and elements in this program may include mild physical or comedic violence or may frighten children under the age of 7.
TV-G	General Audience. It contains little or no violence, no strong language, and little or not sexual dialogue or situations.
TV-PG	Parental guidance suggested. The program nay contain infrequent coarse language, limited violence, some suggestive sexual dialogue and situations.
TV-14	Parents strongly cautioned. This program may contain sophisticated themes, sexual content, strong and explicit sexual content.
TV-MA	Mature Audiences only. This program may contain mature themes, profane language, graphic violence and explicit sexual content.

(Continued on next page.)

Chart 3

FV	Fantasy-Cartoon Violence.
V	Violence
S	Sex
L	Offensive Language
D	Dialogue with sexual content.

■ CANADIAN ENGLISH RATINGS

E	Exempt - Exempt programming includes: news, sports, documentaries and other information programming, talk shows, music videos, and variety programming.
C	Programming intended for children under age 8. No offensive language, nudity or sexual content.
C8+	Programming generally considered acceptable for children 8 years and over. No profanity, nudity or sexual content.
G	General programming, suitable for all audiences.
PG	Parental Guidance suggested. Some material may not be suitable for children.
14+	Programming contains themes or content which may not be suitable for viewers under the age of 14. Parents are strongly cautioned to exercise discretion in permitting viewing by pre-teens and early teens.
18+	18+ years old. Programming restricted to adults. Contains constant violence or scenes of extreme violence.

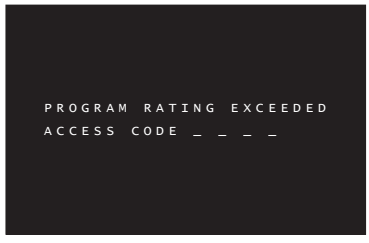
■ CANADIAN FRENCH RATINGS

E	Exempt - Exempt programming.
G	General - Programming intended for audience of all ages. Contains no violence, or the violence content is minimal or is depicted appropriately.
8ANS+	8+ General - Not recommended for young children. Programming intended for a broad audience but contains light or occasional violence. Adult supervision recommended.
13ANS+	Programming may not be suitable for children under the age of 13 - Contains either a few violent scenes or one or more sufficiently violent scenes to affect them. Adult supervision strongly suggested.
16ANS+	Programming may not be suitable for children under the age of 16 - Contains frequent scenes of violence or intense violence.
18ANS+	18+ years old. Programming restricted to adults. Contains constant violence or scenes of extreme violence.

Blocking Message

<When V-Chip Control is activated>

If a program or movie exceeds the ratings you have set, a message will appear on a black background and sound is muted.

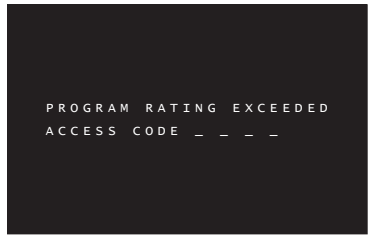


To View a Blocked Program/Movie

■ Temporarily Deactivate V-Chip Control

Press NUMBER keys to enter your secret code in the Blocking Message screen.

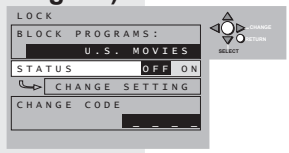
- V-Chip Control is reactivated when power is turned off or power failure occurs.



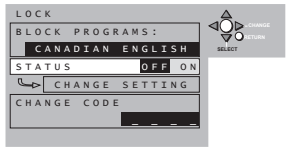
■ Deactivate V-Chip Control

1 Enter your secret code. (p. 28)

2 Then, set US MOVIES and/or US TV PROGRAMS and/or CANADIAN ENGLISH LANGUAGE and/or CANADIAN FRENCH LANGUAGE to “OFF” using ▲▼ and SET. (Ratings set on pages 28~30 are retained and will be in effect when V-Chip Control is activated again.)



<US Rating>



<Canadian Rating>

Closed Caption System

This unit has a built in decoder that provides a visual depiction of the audio portion of a television program in the form of written words across the screen (white or colored letters on a black background). It allows you to read the dialog of a television program or other information.

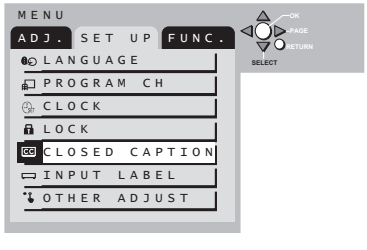
Notes:

- This feature is available only with the 480i input signal and with the programs including the closed caption.
- The closed caption is not displayed when using HDMI connection (p. 17) or when you set the aspect to “ZOOM” (p. 26).
- When a disc supporting closed captions is used, the subtitle and the closed caption may overlap. In this case, turn the subtitle or caption mode off. (p. 49)

1 Press MENU.

2 Press ◄► to select “SET UP.”

3 Press ▲▼ to select “CLOSED CAPTION” and press ENTER.



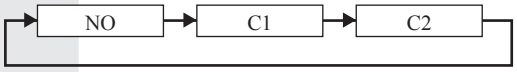
For assistance, please call : 1-800-211-PANA(7262) or, contact us via the web at:http://www.panasonic.com/contactinfo

CC ON MUTE

Displays the On-Screen Closed Caption when the MUTE button is pressed. To delete the closed caption, press the MUTE button again.

4 **Press ▲▼ to select "CC ON MUTE."**

5 **Press ◄► to select "NO (OFF)", "C1" or "C2".**



■ NO:

A narration will not be displayed when MUTE button is pressed for silence.

■ C1 or C2:

A narration of selected TV programs is displayed when MUTE button is pressed for silence.

Note:

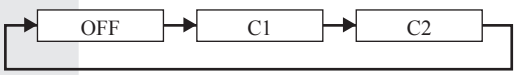
• To activate this feature, set CC MODE to OFF.

CC MODE

Displays the On-Screen Closed Caption.

4 **Press ▲▼ to select "CC MODE".**

5 **Press ◄► to select "OFF", "C1" or "C2".**



■ OFF:

Recommended mode when Closed Caption is not being used.

■ C1:

For video related information that can be displayed (up to 4 lines of script strategically placed on the television screen so that it does not obstruct relevant parts of the picture).

■ C2:

Another mode used for video related information.

Recording and Playing Back a Closed Caption Program

■ Record:

Record normally. Closed Caption signal, if present, is recorded automatically.

■ Playback:

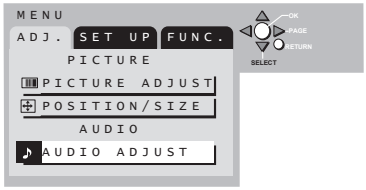
Start playback. Perform steps to select desired caption mode.

Audio Adjust

1 **Press MENU.**

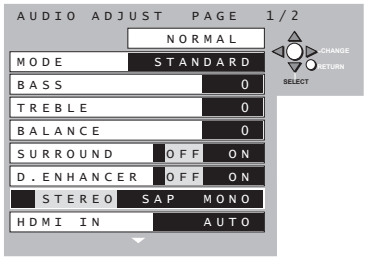
2 **Press ◄► to select "ADJ."**

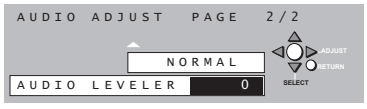
3 **Press ▲▼ to select "AUDIO ADJUST" and press ENTER.**



4 **Press ▲▼ to select the sub-menu.**

5 **Press ◄► to select the setting listening the sound.**





■ NORMAL/NORMALIZE

Select "NORMALIZE" and press ENTER to return each MODE to the factory default setting.

Notes:

• "NORMAL" means the MODE is in the factory default setting. "NORMAL" changes to "NORMALIZE" when you change the setting of BASS, TREBLE, BALANCE, SURROUND, D.ENHANCER or AUDIO LEVELER.

• You can normalize each MODE separately.

■ MODE

You can also change "MODE" by pressing AUDIO MODE on the Remote Control.

AUTO	Automatically adjusts for a wide Dynamic Range.
STANDARD	Emits the original sound.
DYNAMIC	Gives contrast to sound.

■ BASS, TREBLE, BALANCE, SURROUND, D.ENHANCER

You can change the level of each sub-menu (BASS, TREBLE, BALANCE, SURROUND, D.ENHANCER) for each MODE (AUTO, STANDARD and DYNAMIC) according to your personal preference.

BASS	Adjusts low frequencies.
TREBLE	Adjusts high frequencies.
BALANCE	Adjusts left and right volume.
SURROUND	To enjoy a concert hall effect.
D.ENHANCER	The volume of the center channel is raised to make dialog easier to hear. (DVD playback only)

(Continued on next page.)

■ STEREO / SAP / MONO

- Red display : With signal
  White display : No signal
  White display (All modes) : MONO
- To change the mode using AUDIO button.

STEREO	Two channel Audio reception.
SAP	Second Audio Programming (typically used for bilingual audio).
MONO	Use when stereo signal is weak.

■ HDMI

When using HDMI connection (p. 17), this feature will let you switch between Analog Input and Digital Input.

AUTO	Automatically selects Analog / Digital signal.
DIGITAL	Digital Input only.
ANALOG	Analog Input only.

■ AUDIO LEVELER

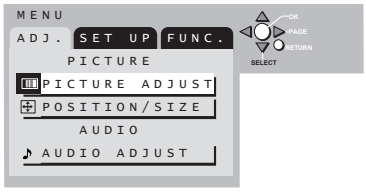
You can adjust the volume level for each of the input mode (TV, VIDEO1, VIDEO2, COMPONENT, HDMI and DVD/SD mode).

Picture Adjust

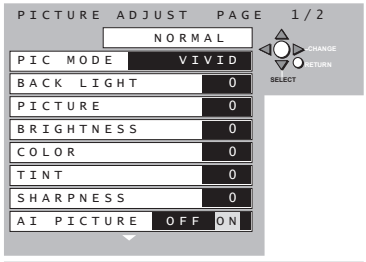
1 **Press MENU.**

2 **Press ◄► to select “ADJ.”**

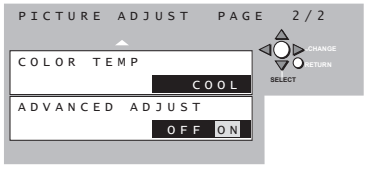
3 **Press ▲▼ to select “PICTURE ADJUST” and press ENTER.**



4 **Press ▲▼ to select the sub-menu.**



- “ADVANCED ADJUST” is displayed only when PIC MODE is set to CUSTOM.

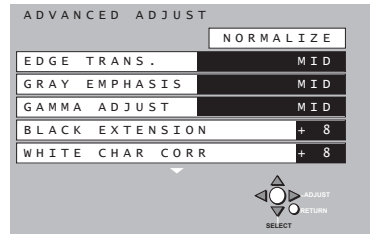


5 **Press ◄► to adjust the setting watching the picture behind the menu.**

■ ADVANCED ADJUST

6 **Press ▲▼ to select “ADVANCED ADJUST” and press ◄► to select “ON.”**

7 **Press ▼ to display the sub-menu.**



■ NORMAL/NORMALIZE

Select “NORMALIZE” and press ENTER to return each PIC MODE to the factory default setting.

Notes:

- “NORMAL” means the PIC MODE is in the factory default setting. “NORMAL” changes to “NORMALIZE” when you change the setting of BACK LIGHT, PICTURE, BRIGHTNESS, COLOR, TINT, SHARPNESS, AI PICTURE, COLOR TEMP or ADVANCED ADJUST.
- You can normalize each PIC MODE separately.

■ PIC MODE

You can also change “PIC MODE” by pressing PICTURE MODE on the Remote Control.

STANDARD	Displays a standard image.
CINEMA	Ideal for watching movies in a dark room.
VIVID	Displays a clear image with high contrast.
CUSTOM	You can customize the picture settings to suit your preference. (Refer to “ADVANCED ADJUST” on page 33.)

- PIC MODE setting is stored separately for TV, VIDEO1, VIDEO2, COMPONENT, HDMI and DVD/SD mode.

■ BACK LIGHT, PICTURE, BRIGHTNESS, COLOR, TINT, SHARPNESS, AI PICTURE, COLOR TEMP

You can change the level of each Item (BACK LIGHT, PICTURE, BRIGHTNESS, COLOR, TINT, SHARPNESS, AI PICTURE and COLOR TEMP) for each MENU (STANDARD, CINEMA, VIVID and CUSTOM) according to your personal preference.

Sub-menu	Function
BACK LIGHT	Luminance of the back light is adjusted.
PICTURE	Selects proper brightness and density for the room.
BRIGHTNESS	Adjusts for easier viewing of dark pictures such as night scenes.
COLOR	Adjusts the level of color.
TINT	Adjusts for flesh tone color.
SHARPNESS	Adjusts the degree of sharpness.
AI PICTURE	Displays black and white more accurately when turned ON.
COLOR TEMP (Color temperature)	Increases or decreases WARM (red) and COOL (blue) colors to suit personal preference.

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■ ADVANCED ADJUST

(Only when you selected CUSTOM in PIC MODE)

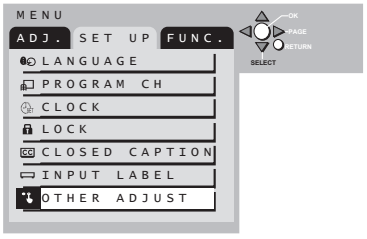
Item	Function
EDGE TRANS.	Improves edges in the background to reduce overshooting and improve the sense of depth.
GRAY EMPHASIS	Emphasizes the sharpness in density of many color differences.
GAMMA ADJUST	Increases the brightness of the center ranges to improve detail and contrast in dark scenes.
BLACK EXTENSION	Contrast level will be improved.
WHITE CHAR CORR	It makes white characters brighter.

Other Adjust

1 **Press MENU.**

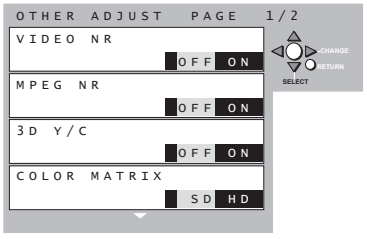
2 **Press ◄► to select "SET UP."**

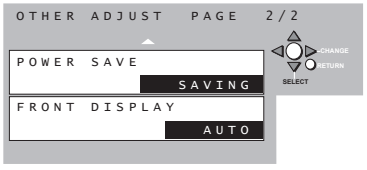
3 **Press ▲▼ to select "OTHER ADJUST" and press ENTER.**



4 **Press ▲▼ to select the item.**

5 **Press ◄► to select the setting.**





■ VIDEO NR

In the event of weak signal conditions, the VIDEO NR circuitry reduces noise in the luminance channel. It is important to note that VIDEO NR should remain OFF for maximum picture detail when receiving a strong signal or viewing high-quality video.

ON	When signal is noisy.
OFF	When signal is high-quality.

• PIC MODE setting is stored separately for TV, VIDEO1, VIDEO2, COMPONENT, HDMI and DVD/SD mode.

■ MPEG NR

Noise unique to DVD, STB, etc. will be reduced.

ON	Reduces noise in the picture.
OFF	Set to OFF if picture appears unnatural.

• PIC MODE setting is stored separately for TV, VIDEO1, VIDEO2, COMPONENT, HDMI and DVD/SD mode.

■ 3D Y/C

Minimizes noise and cross color in the picture. Not available for COMPONENT VIDEO INPUT, HDMI and DVD/SD mode input.

ON	Usually set to ON.
OFF	Set to OFF if picture appears unnatural.

■ COLOR MATRIX

Displays input signals (480p signals) in a natural color. Automatically adjusts color parameters for HD (high definition) and SD (standard definition).

SD	When the input signal is a normal TV system (NTSC).
HD	When the input signal is a High-definition system (HD).

■ POWER SAVE

The POWER SAVE mode is suitable for watching television at night. Power consumption will be reduced.

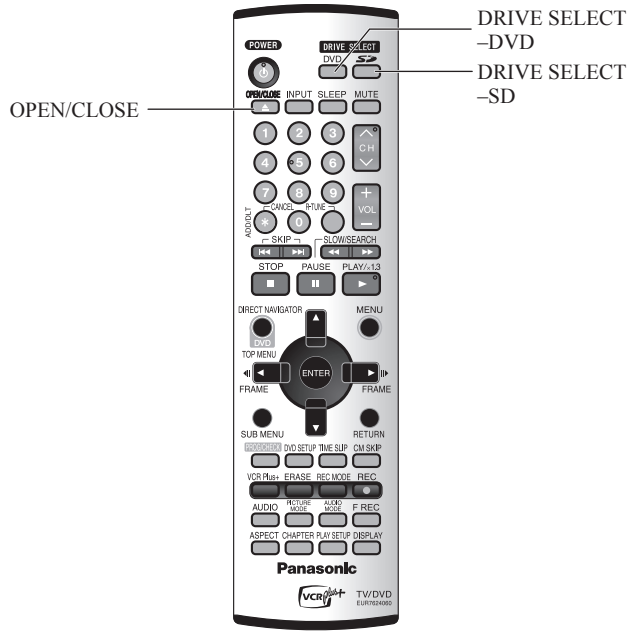
STANDARD	Set to STANDARD normally. The peak brightness is not reduced and you can view normal lighting transitions in the picture.
SAVING	The peak brightness of the brightest scenes is reduced conserving power while giving you a natural picture.

■ FRONT DISPLAY

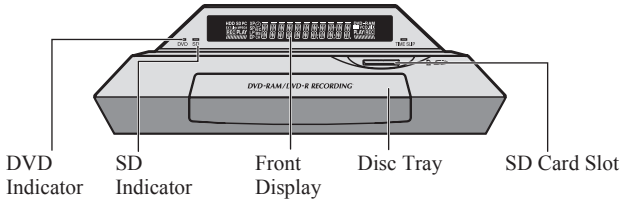
The Front Display brightness is adjustable. To display the clock even when power is off, please select DIM or BRIGHT.

AUTO	Display is bright only when power is ON. Display goes out when power is OFF, but lights dimly during recording, etc.
BRIGHT	Display is always bright.
DIM	Display is always dim.
OFF	Display is always off.

Before Using the Disc or Card



■ **Front view**



Before using Disc/Card Functions

1 **Confirm that disc or card is inserted.**

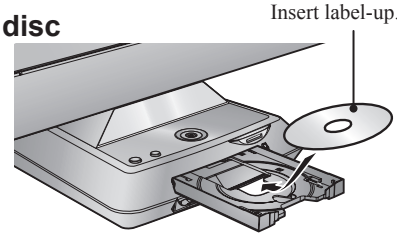
2 **Press DVD or SD to select the drive.**
- The “DVD” or “SD” indicator flashes on the Front Display.
- The DVD or SD indicator on the unit lights.

3 **Each operation is carried out.**

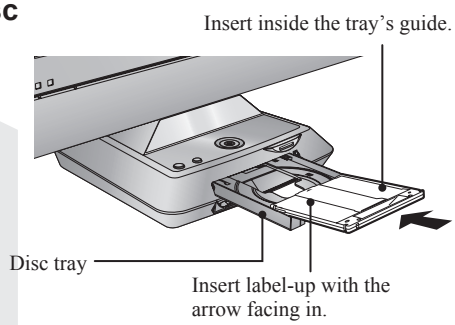
Inserting a Disc

1 **Press OPEN/CLOSE on the unit to open the tray and insert a disc.**
- Press the button again to close the tray.

■ **Non-cartridge disc**



■ **Cartridge disc**

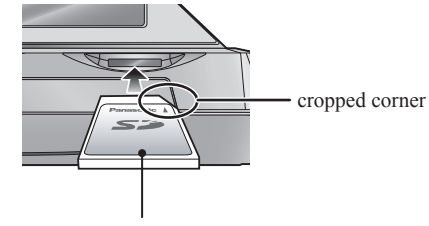


Notes:
- Load double-sided discs so the label for the side you want to record/play is facing up.
- When using 8 cm (3″) DVD-RAM, remove the disc from the cartridge and insert it, making sure you align it with the groove.

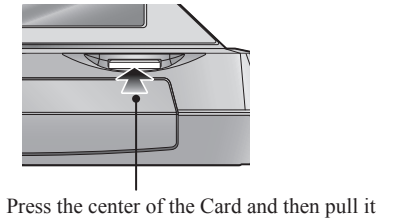
Inserting/Removing the Card

Only insert or remove the card after turning the unit off.
When the “SD” indicator on the unit display is flashing, the card is being read from or written to. Do not turn off the power or remove the card. Such action may result in malfunction or loss of the card’s contents.

■ **Inserting the Card**



■ **Removing the Card**



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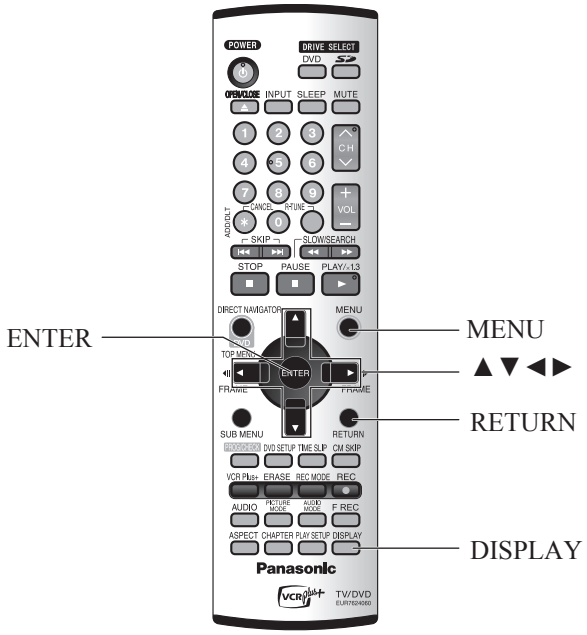
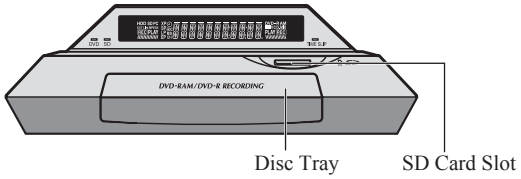
DVD/SD Functions Windows and Status Messages



■ **Front view**



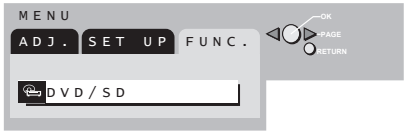
DVD/SD Functions Window

RAM | DVD-R | DVD-A | DVD-V | VCD | CD | MP3

By using the DVD/SD Functions window you may access the main functions quickly and easily.

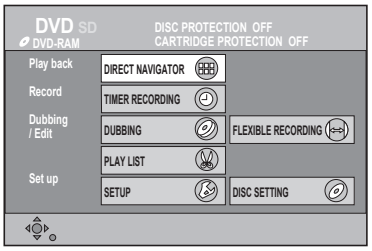
1 Press MENU in Stop mode, then press ◄► to select "FUNC."

2 Press ENTER.
- Opening the DVD/SD Functions Window automatically places unit into DVD mode.



3 Press ▲▼◄► to select an item and press ENTER.
- Functions displayed depend on the type of disc.

e.g., DVD-RAM



e.g., DVD-RAM

Function	The same operation with Remote Control Button	Pages
DIRECT NAVIGATOR	DIRECT NAVIGATOR	45, 51~53
TIMER RECORDING	PROG/CHECK	40~41
DUBBING		64~66
FLEXIBLE RECORDING	F REC	39
PLAY LIST		57~59
SET UP	DVD SETUP	67~69
DISC SETTING		60~62

e.g., SD CARD

Function	The same operation with Remote Control Button	Pages
DIRECT NAVIGATOR	DIRECT NAVIGATOR	54~56
TIMER RECORDING	PROG/CHECK	40~41
DUBBING		64~66
COPY ALL PICTURES		66
SET UP		67~69
CARD SETTING		60~61

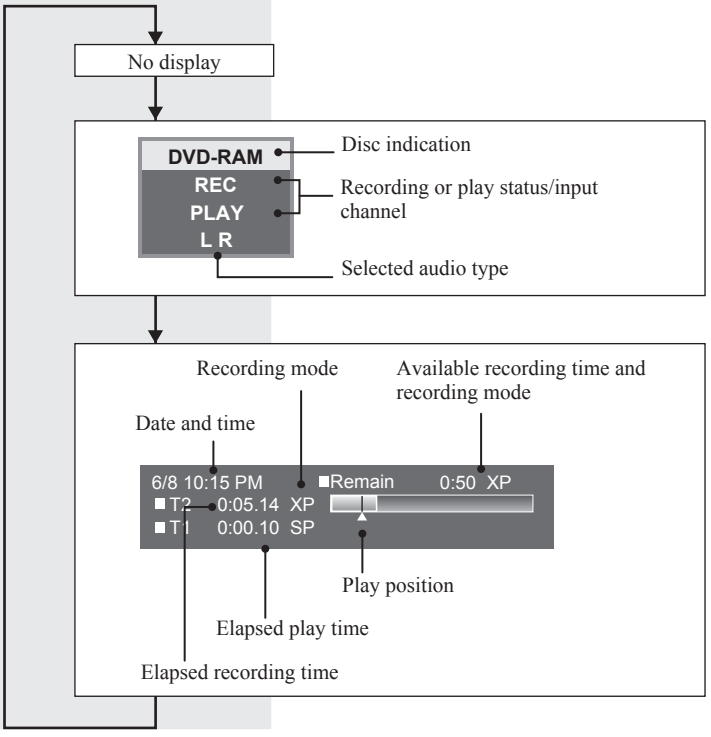
■ **To exit the DVD/SD Functions window**

Press RETURN.

Status messages (Disc)

Status messages appear on the television when you operate the unit to show the condition of the unit.
- About Still Picture, refer to "To display information about the Still Pictures" on page 54.

1 Press DISPLAY in play mode.
- The display changes each time you press the button.



Function List

Disc Type	Available Function		Page
RAM	Playback	Start from a selected item (using NUMBER keys)	46
		Fast forward and rewind (Search)	45
		Skip a program or track	45
		Quick View	46
		Slow-motion playback	46
		Frame-by-frame viewing	46
		Skip a minute forward (CM Skip)	45
		Display the television image as a picture-in-picture	46
		Skip the specified time (Time Slip)	46
		Repeat playback	50
		Create Chapters	48
		Select subtitle on/off	49
		Change audio during play	48
		Erase a program that is being played back	47
	Play with Direct Navigator/Play List	Play the recorded programs (DIRECT NAVIGATOR)	45, 51
		Play the created chapters (DIRECT NAVIGATOR)	51
		Play Still Pictures (DIRECT NAVIGATOR)	54
		Play the created play lists (PLAY LIST)	57
		Play the created chapters of Play List (PLAY LIST)	58
	Recording	Timer Recording	40~41
		Flexible Recording	39
		Play from the beginning of the title you are recording (Chasing playback)	42
		Simultaneous Recording and Play	42
		Review the recorded images while recording (Time Slip)	42~43
	Erase or Edit a program with Direct Navigator/ Play List	Erase the selected programs	52
		Display information about the recorded date/ time/channel, etc.	52
		Enter a title name to a program	52
		Protect the title from accidental erasure	52
		Select and erasing unnecessary parts of the programs	52
		Change an image to be shown as a thumbnail picture in the Title View	53
		Select a point at which to divide the title into two.	53
		Edit chapters in the DIRECT NAVIGATOR	53
		Create play lists	57~58
		Edit play lists	58~59
		Edit chapters in the PLAY LIST	59
	Playback Still Pictures	Display still pictures one by one with constant interval (Slide Show)	56
		Rotate a still picture	55
		Enlarge a still picture (Zoom in/Zoom out)	55

Disc Type	Available Function		Page
RAM	Erase or Edit Still Pictures	Erase still pictures	55
		Display information about the still picture	54
		Change a folder name	56
		Protect the still picture from accidental erasure	56
		Transfer (dubbing) still pictures (Card ↔ DVD-RAM)	64~66
	Disc Setting	Enter the Disc name	60
		Protect the Disc from accidental erasure	60
		Erase all titles or play lists	60~61
		Format a Disc	61
DVD-R	Playback	Start from a selected item (using NUMBER keys)	46
		Fast forward and rewind (Search)	45
		Skip a program or track	45
		Slow-motion playback	46
		Frame-by-frame viewing	46
		Skip a minute forward (CM Skip)	45
		Display the television image as a picture-in-picture	46
		Skip the specified time (Time Slip)	46
		Repeat playback	50
		Select subtitle on/off	49
		Erase a program that is being played back	47
	Play with Direct Navigator	Play the recorded programs (DIRECT NAVIGATOR)	45, 51
	Recording	Timer Recording	40~41
		Flexible Recording	39
	Erase or Edit a program with Direct Navigator	Erase the selected programs	52
		Display information about the recorded date/ time/channel, etc.	52
		Enter a title name to a program	52
		Change an image to be shown as a thumbnail picture in the Title View	53
	Disc Setting	Enter the Disc name	60
		Select whether to show the top menu after finalizing the disc	61
		A process that makes play of a recorded DVD-R possible on equipment that can play such media. (Finalize)	62

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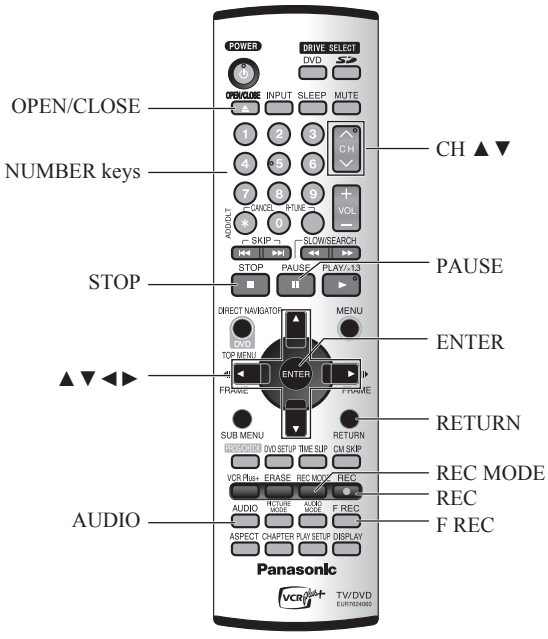
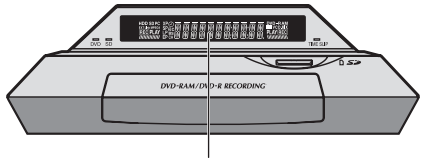
Disc Type	Available Function		Page
DVD-A	Playback	Start from a selected item (using NUMBER keys)	46
		Fast forward and rewind (Search)	45
		Skip a program or track	45
		Slow-motion playback	46
		Frame-by-frame viewing	46
		Repeat playback	50
		Change the sound track language	49
		Select subtitle language	49
		Select the angle	49
DVD-V	Playback	Start from a selected item (using NUMBER keys)	46
		Fast forward and rewind (Search)	45
		Skip a program or track	45
		Slow-motion playback	46
		Frame-by-frame viewing	46
		Repeat playback	50
		Change the sound track language	49
		Select subtitle language	49
		Select the angle	49
CD MP3	Playback	Start from a selected item (using NUMBER keys)	46
		Fast forward and rewind (Search)	45
		Skip a program or track	45
		Play MP3 files recorded on CD-R/RW with a computer. (MP3 only)	47
		Repeat playback	50
VCD	Playback	Start from a selected item (using NUMBER keys)	46
		Fast forward and rewind (Search)	45
		Skip a program or track	45
		Slow-motion playback	46
		Frame-by-frame viewing	46
		Repeat playback	50
		Playback Control on/off	49
		Change audio during play	48

Disc Type	Available Function		Page
SD	Playback Still Pictures	Display still pictures one by one with constant interval (Slide Show)	56
		Rotate a still picture	55
		Enlarge a still picture (Zoom in/Zoom out)	55
	Erase or Edit Still Pictures	Erase still pictures	55
		Display information about the still picture	54
		Change a folder name	56
		Protect the still picture from accidental erasure	56
		Set the number of images to be printed (DPOF)	56
		Transfer (dubbing) still pictures (Card ↔ DVD-RAM)	64~66
	Card Setting	Format a Card	61

Recording



■ **Front view**



Front Display

Recording television programs

RAM DVD-R

- It is not possible to record continuously from one side of a double sided disc to the other. You will need to eject the disc and turn it over.
- When using 8 cm (3″) DVD-RAM, remove the disc from the cartridge.
- You can record up to 99 titles on one disc.
- You can record digital broadcasts that allow “one time only recording” when using CPRM (p. 70) compatible DVD-RAM discs. And you cannot record digital broadcasts that allow “one time only recording” when using DVD-R.
- DVD-RAM/DVD-R have limitations on recording (pp. 8~10).
- Recording will take place on open space on the disc. Data will not be overwritten.
- If there is no space left on the recording disc, you will need to erase unwanted titles (pp. 47, 52) or use a new disc.
- **You cannot record on finalized DVD-R discs.**

Preparation

- Release protection before proceeding:
  - Cartridge (p. 9) RAM
  - Disc (p. 60) RAM

1 Press OPEN/CLOSE on the unit to open the tray and insert a disc. (p. 34)

- Press the button again to close the tray.
- RAM When using a DVD-RAM for the first time with this unit, format it to ensure accurate recording. (Refer to “Format Disc” on page 61.)

2 Press CH ▲▼ or NUMBER keys to select the channel.

e.g., When you select channel 4

■ **To select with the NUMBER keys:**

e.g., 5: [0] → [5]
15: [1] → [5]
115: [1] → [1] → [5]

3 Press REC MODE to select the recording mode. (See next page.)

e.g., When you select “XP”

XP* → SP → LP → EP

* To record sound using LPCM (possible only in XP mode): Select “LPCM” in “Audio for XP Recording” (the picture quality may go down slightly). (p. 69)

4 Press REC to start recording.

- You cannot change the channel or recording mode during recording.
- You can change the audio being received by pressing AUDIO during recording.

■ To specify a time to stop recording

During recording

Press REC on the unit or the Remote Control to select the recording time.

Each time you press the button:

OFF → 0:30 → 1:00 → 1:30 → 2:00 → 3:00 → 4:00

- This does not work during timer recordings (pp. 40~41) or while using Flexible Recording (p. 39).
- Recording stops and the set time is cleared if you press STOP.
- The set time is cleared if you change the recording mode or channel while recording is paused.

■ To stop recording

Press STOP.

- Recorded as 1 title until the position where stopped.
- DVD-R It takes about 30 seconds for the unit to complete recording management information after recording finishes.

■ To pause recording

Press PAUSE.

Press again to restart recording.

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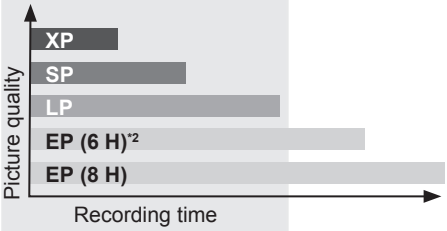
• When ⃠ appears on the screen while a button is being pressed, it means that the corresponding operation is prohibited by the unit or the disc.

Recording modes and approximate recording times

Depending on the content being recorded, the recording times may become shorter than indicated.

(Unit: hour)

Disc / Recording Mode	DVD-RAM		DVD-R (4.7 GB)
	Single-sided (4.7 GB)	Double-sided (9.4 GB)	
XP (High quality)	1	2[*1]	1
SP (Normal)	2	4[*1]	2
LP (Long play)	4	8[*1]	4
EP (Extra long play)	8 (6[*2])	16*1 (12[*1*2])	8 (6[*2])



[*1] Recording time of double-sided disc is sum total of both sides of disc.

[*2] When “Recording time in EP mode” (p. 68) is set to “EP (6 H)” in the SETUP menu. The sound quality is better when using “EP (6 H)” than when using “EP (8 H)”.

Note:

• When recording to DVD-RAM using “EP (8 H)” mode, play may not be possible on DVD players that are compatible with DVD-RAM. In this case use “EP (6 H)” mode.

FR (Flexible Recording Mode) (See right)

The unit automatically selects a recording rate between XP and EP (8 H) that will enable the recordings to fit in the available recording time on the disc with the best possible recording quality.

• You can set when programming timer recordings.

• All the recording modes from XP to EP appear in the display.

Selecting audio to record

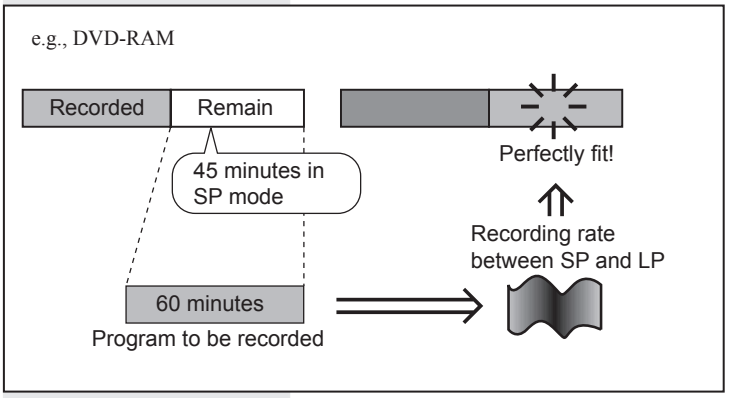
RAM **DVD-R**

Select whether to record the main or secondary audio type (SAP) when recording to DVD-R or DVD-RAM. (You cannot change secondary audio when recording audio to DVD-R or DVD-RAM from an external source.) (p. 69)

Flexible Recording (FR)

RAM **DVD-R**

The unit calculates a recording rate that enables the recording to fit in the time you set (within the remaining time on the disc) with the best picture quality.

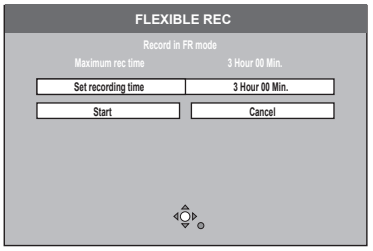


Preparation

• Select the channel to record.

1 Press F REC in Stop mode.

• You can also select “FLEXIBLE RECORDING” on the DVD/SD Functions Window. (p. 35)



2 Press ◄► to select “Hour” and “Min.” and press ▲▼ to set the recording time.

• You can also set the recording time with the NUMBER keys.

• Maximum recording time is 8 hours.

3 Press ▲▼◄► to select “Start” and press ENTER to start recording.

• Recording starts.

• The recording mode becomes FR mode.

Note:

• It is not possible to change channel or recording mode while Flexible Recording is paused.

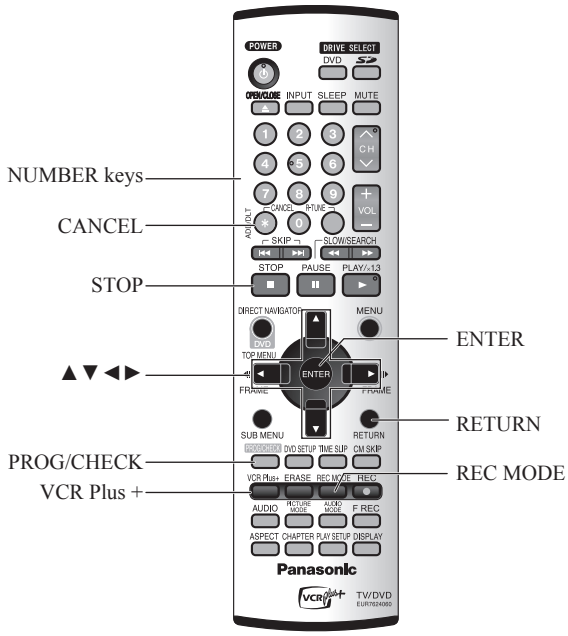
■ To exit the screen without recording

Press RETURN.

■ To stop recording partway

Press STOP.

Timer Recording



■ **Front view**

RAM DVD-R

■ **Caution for Timer recording**

Timer recording automatically starts at the set time.

- Timer recording can be started whether the unit is turned on or off. When the unit is turned off, the sound and the video cannot be outputted to the TV.

You can enter up to 16 programs up to a month in advance.

- When connecting a cable TV box or satellite receiver, the VCR Plus+ system does not work. Program the timer recording manually. (pp. 40~41)

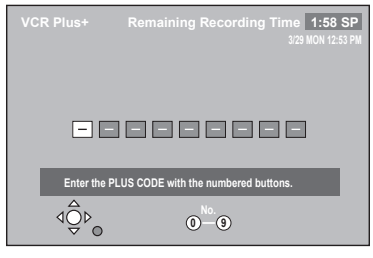
Preparation

- Release protection before proceeding:
  - Cartridge (p. 9) RAM
  - Disc (p. 60) RAM
- Insert a disc (p. 34) and confirm there is sufficient empty space for recording on it (p. 35). You can also confirm the disc information. (p. 60)

Using VCR Plus+ system

Entering VCR Plus+ number is an easy way of timer recording. You can find these codes in TV listings in newspapers and magazines.

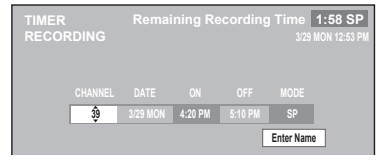
1 Press VCR Plus+.



2 Press NUMBER keys to enter the VCR Plus+ number.

- Press ◄ to move back to correct a digit.

3 Press ENTER.

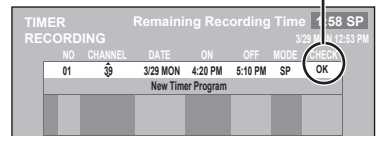


- When "XP" is displayed in the unit's display, the recording mode automatically changes to "FR" in order to prevent loss of recording when there is not enough space. Change to "XP" mode if you want to set the timer recording using "XP" mode.
- Confirm the program and make corrections if necessary using ▲▼◄►. (See step 3 on next page.)
- You can also press REC MODE to change the recording mode.
- **To enter the title of the program**
  Press ◄► to select "Enter Name" and press ENTER. (p. 63)

4 Press ENTER.

- The setting are stored.

Check to make sure "OK" is displayed.



- Repeat steps 1~4 to program other recordings.

5 Press RETURN.

- "◴" lights on the Front Display to indicate timer recording standby has been activated.

■ **To cancel recording when recording has already begun**

Hold down STOP for a few seconds.

Manually programming

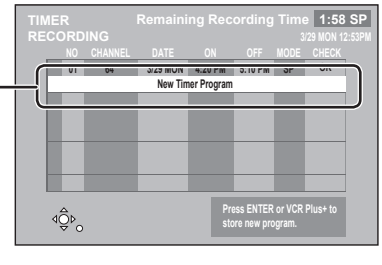
You can enter up to 16 programs up to a month in advance.
(Each daily or weekly program is counted as one program.)

- When connecting a cable TV box or satellite receiver, select the channel on the cable TV box or satellite receiver before timer recording starts.

1 Press PROG/CHECK.

2 Press ▲▼ to select "New Timer Program" and press ENTER.

Highlighted line is ready for programming.



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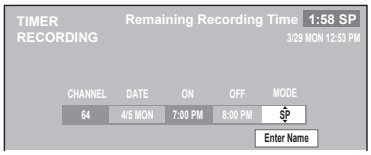
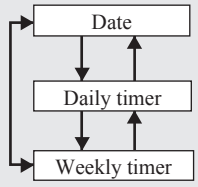
• When ⃠ appears on the screen while a button is being pressed, it means that the corresponding operation is prohibited by the unit or the disc.

3 Press ► to move through the items and change the items with ▲▼.



- Press and hold ▲▼ to alter the Start (Start time) and Stop (Finish time) in 30-minute increments.
- You can also set CHANNEL (Program Position/TV Station Name), DATE (See below), ON (Start time), and OFF (Finish time) with the NUMBER keys.
- You can also press REC MODE to change the recording mode.
- **Date**



Current date up to one month later minus on day

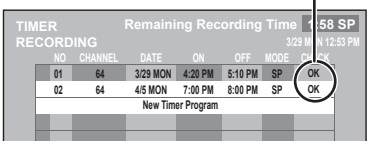
SUN-SAT→MON-SAT→MON-FRI

WEEKLY SUN→----→WEEKLY SAT

- **Enter Name:**
  Press ◄► to select “Enter Name” and press ENTER. (p. 63)

4 Press ENTER.

Check to make sure “OK” is displayed.



- Repeat steps 2~4 to program other recordings.

5 Press RETURN.

- “⏲” lights on the Front Display to indicate timer recording standby has been activated.

■ To cancel recording when recording has already begun

Hold down STOP for a few seconds.

Notes:

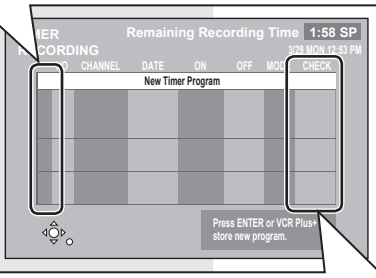
- “⏲” flashes when the unit cannot go to timer recording standby (e.g., a recordable disc is not in the disc tray). Check the disc carefully.
- The actual time recorded may be longer than the program itself when television programs are recorded using VCR Plus+ system.
- When you program successive timer recordings to start immediately one after the other, the unit cannot record the part at the beginning of the later programs (a few seconds when recording with DVD-RAM and approximately 30 seconds when recording with DVD-R).
- If you DST (Daylight Saving Time) to On when manually setting the clock (p. 23), timer recording may not work when summer switches to winter and vice versa.
- When the unit is carrying out a timer recording:
  - You may utilize playback.
- When the disc is not inserted, the disc is full or a non-recordable disc is inserted, the warning message appears because Timer Recording is disabled.
- During Timer Recording, dubbing and editing are disabled.
- Timer recordings are automatically placed in order of DATE → ON (Start Time).
- If timer recording times overlap, the program with the earliest start time is recorded first. The overlapped portion of the later program will not be recorded.

Check, change or delete a program

1 Press PROG/CHECK.

Icons

- ● This program is currently recording.
- Ⓦ The times overlap those in another program. Recording of the program with the later start time starts when the earlier program finishes recording.
- ⊖ You stopped a weekly or daily timer recording. The icon disappears the next time the timer starts recording.
- Ⓕ The disc was full so the program failed to record.
- ⍁ The material was copy-protected so it was not recorded.
- Ⓧ The program did not complete recording because the disc is dirty or some other reason.



Message displayed in the CHECK line

OK: Displayed if the recording can fit in the remaining space.

→ (Date): For recordings made daily or weekly, the display will show until when recordings can be made (up to a maximum of one month from the present time) based on the time remaining on the disc.

! : It may not be possible to record because:
- the disc is write-protected
- there is not enough space left
- the number of possible titles has reached its maximum.

■ To change a program

Press ▲▼ to select the program and press ENTER.
Press ◄► to move through the items and change the items with ▲▼, then press ENTER.

■ To delete a program

Press ▲▼ to select the program and press CANCEL.
- You cannot delete programs that are currently recording.

■ To put the unit on timer recording standby

Press RETURN.
- “⏲” lights on the Front Display to indicate timer recording standby has been activated.

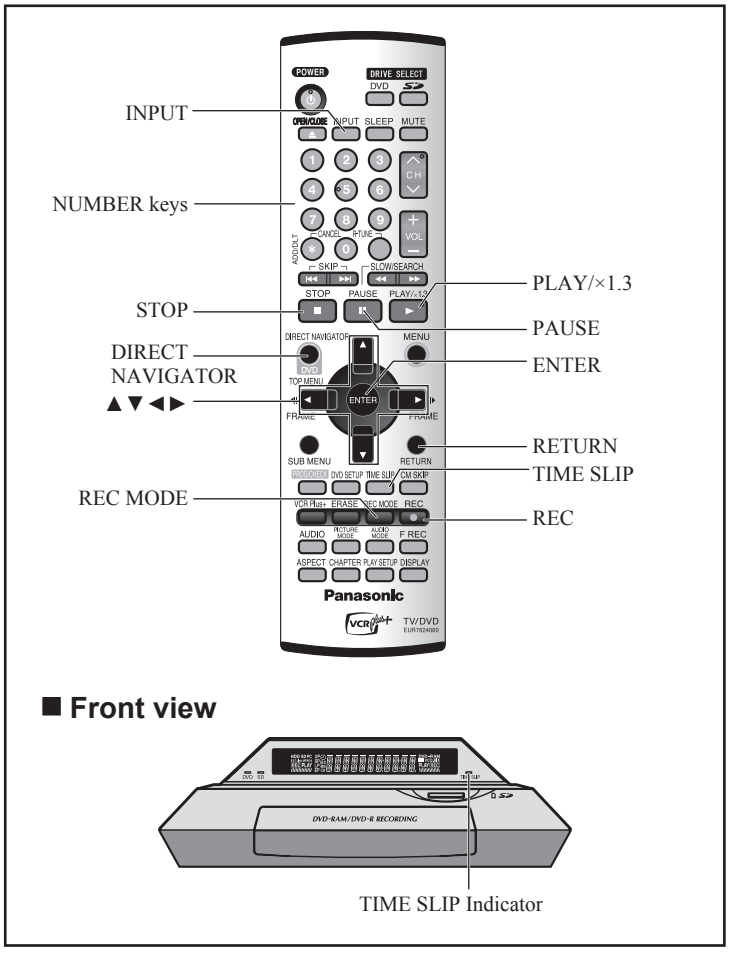
2 Press RETURN.

- The timer recording list disappears.

Notes:

- Programs that failed to record are displayed gray. They are automatically deleted from the timer recording list at 4 a.m. two days later.
- During timer recording, you can change the end time as long as the recording mode is not “FR”.

Various Recording



Playing while you are recording

Preparation
- Select the channel to record.
- Release protection before proceeding:
  - Cartridge (p. 9) **RAM**
  - Disc (p. 60) **RAM**

Chasing playback

RAM

You can start play from the beginning of the title while continuing to record it.

1 Press PLAY/×1.3 while recording or timer recording.
- TIME SLIP Indicator on the unit lights.

■ To stop play
Press STOP.

■ To stop recording
Press STOP. Wait 2 seconds, press STOP again.

■ To stop timer recording
Press STOP. Wait 2 seconds, hold down STOP for a few seconds.

Notes:
- Sound is not output while fast-forwarding.
- Play cannot be started until at least 2 seconds after recording starts.

Simultaneous Recording and Play

RAM

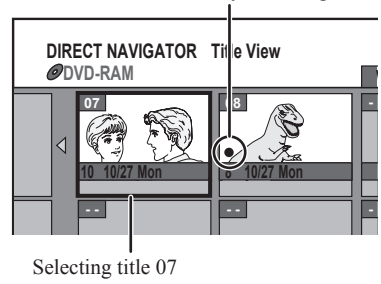
You can start play of the title you are recording or play a title previously recorded.

1 Press DIRECT NAVIGATOR while recording or timer recording.

2 Press ▲▼◄► to select a title and press ENTER.
- TIME SLIP Indicator on the unit lights.

●: Currently recording

e.g.,
You want to watch the movie you recorded yesterday (title 07) while recording sport (title 08).
Title 07 is played back while title 08 is being recorded.



■ To stop play
Press STOP.

■ To exit the DIRECT NAVIGATOR screen
Press DIRECT NAVIGATOR.

■ To stop recording
First, press STOP to stop play. Then, exit DIRECT NAVIGATOR, wait 2 seconds, and press STOP again.

■ To stop timer recording
First, press STOP to stop play. Then, exit DIRECT NAVIGATOR, wait 2 seconds, and hold down STOP for a few seconds.

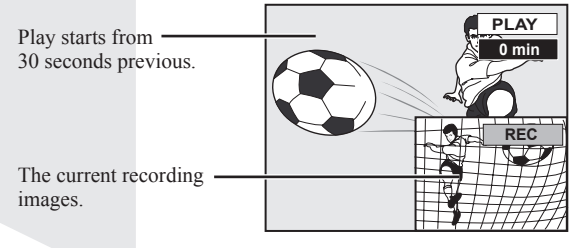
Notes:
- Sound is not output while fast-forwarding.
- During simultaneous recording and play, you cannot edit or erase with the Direct Navigator or play lists.
- If you start play while the unit is on standby for timer recording, recording starts when the time you set is reached.

Time Slip

RAM

You can play the title being recorded to check that it is being recorded correctly. You can also check parts that were recorded previously.

1 Press TIME SLIP while recording or timer recording.
- TIME SLIP Indicator on the unit lights.
- Play starts from 30 seconds previous to that moment. What is currently being recorded appears as a picture-in-picture and you will hear the playback audio.
- Time Slip becomes unavailable if any V-Chip setting is made in the LOCK item of the SET UP.



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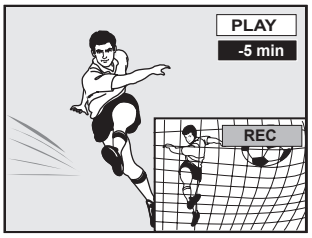
• When ⃠ appears on the screen while a button is being pressed, it means that the corresponding operation is prohibited by the unit or the disc.

2 **Press ▲▼ to select the time and press ENTER.**
- The time indicator will go off after about 5 seconds, but will turn on again when you set the indicator.
- Press ▲▼ to alter in 1-minute units. Press and hold ▲▼ to alter in 10-minute units.



■ To show the play images in full
Press TIME SLIP.
- Press TIME SLIP to return to the picture-in-picture screen.

Note:
- The image on the small screen may be distorted or flicker depending on the scene. However, this does not affect the image recorded.

■ To stop play
Press STOP.

■ To stop recording
Press STOP. Wait 2 seconds, press STOP again.

■ To stop timer recording
Press STOP. Wait 2 seconds, hold down STOP for a few seconds.

Recording from a video cassette recorder

RAM DVD-R

Preparation
- Connect a video cassette recorder to this unit's input terminals.

Notes:
- When recording using this unit's input terminals, only the sound received at the time of recording will be recorded. As long as secondary audio that is recorded on the video cassette is not output on the unit in play, it is not recorded.
- Recording cannot be done when input is Component or HDMI.

1 **Press INPUT to select the input channel for the equipment you have connected in Stop mode.**

2 **Press REC MODE to select the recording mode (XP, SP, LP or EP).**
- Using Flexible Recording (p. 39), you can save content of a video cassette to 1 disc with the best possible quality of recording without wasting disc space.

3 **Start play on the other equipment.**

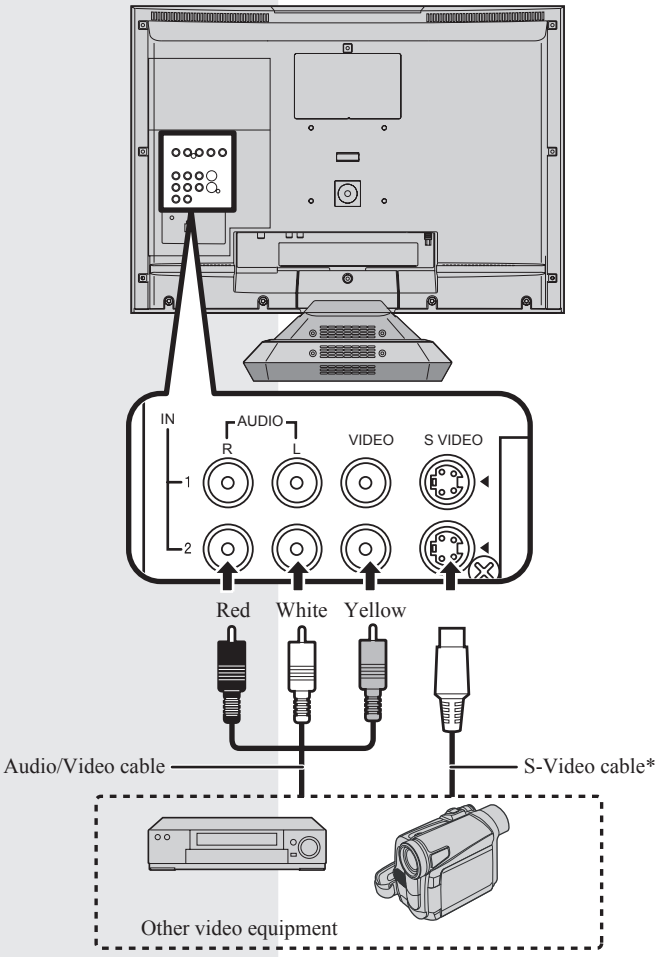
4 **Press REC.**
- Recording starts.

■ To skip unwanted parts
Press PAUSE to pause recording. (Press again to restart recording.)

■ To stop recording
Press STOP.

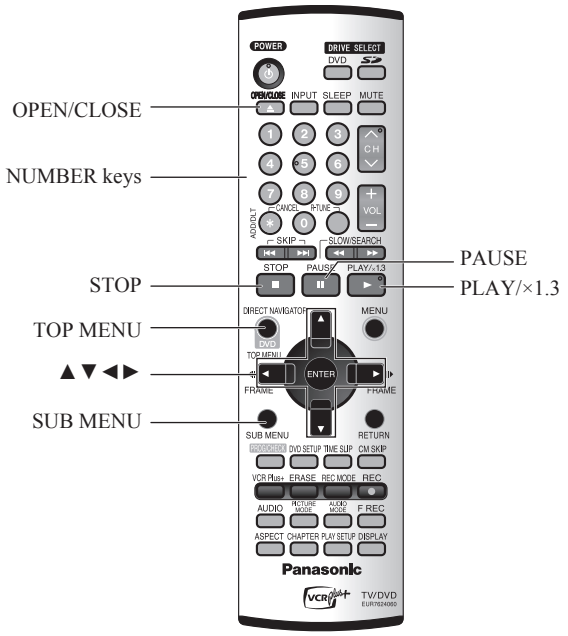
Almost all videos and DVD software on sale have been treated to prevent illegal copying. Any software that has been so treated cannot be recorded using this unit.

e.g., Connecting the L2 input terminals
This unit

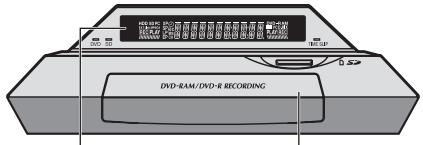


If the audio output of the other equipment is monaural, connect to L/MONO.
* The S-VIDEO terminal achieves a more vivid picture than the VIDEO terminal.

Playing Discs



■ Front view



Front Display Disc Tray

RAM DVD-R DVD-A DVD-V VCD CD MP3

- It is not possible to play continuously from one side of a double sided disc to the other. You will need to eject the disc and turn it over.
- When using 8 cm (3″) DVD-RAM, remove the disc from the cartridge.

1 Press OPEN/CLOSE on the unit to open the tray and insert a disc. (p. 34)
- Press the button again to close the tray.

2 Press PLAY/×1.3.
- The unit takes some time to read the disc before play starts.

- RAM DVD-R
  Play starts from the most recently recorded title.
- DVD-V DVD-A VCD CD MP3
  Play starts from the beginning of the disc.

Notes:
- DVD-V DVD-A VCD
  Depending on the disc, playback may start automatically.
- RAM If cartridge protection is activated (p. 9), play begins automatically when you close the tray.
- DVD-V DVD-A VCD
  If an interactive Disc is used, the DVD Main Menu appears.
- MP3 If a menu screen is used, it is possible to playback looking at disc tree view. (p. 47)

■ To stop play

Press STOP.
- DVD-V DVD-A CD VCD MP3
  Press STOP again to return to the television screen.
- When “PLAY” flashes on the Front Display, resume function is active. (See below.)
- The screen saver may appear when you stop play. Press STOP again and you can use this unit’s tuner to watch television.

■ To pause play

Press PAUSE.
- Press again to restart play.

When a menu screen appears on the television

DVD-A DVD-V

1 Press ▲▼◄► to select the item and press ENTER.
- Some items can also be selected using the NUMBER keys.

VCD

1 Press NUMBER keys to select the item.

e.g., 5: [0] → [5] 15: [1] → [5]

■ To return to the menu screen

- DVD-A : Press TOP MENU.
- DVD-V : Press TOP MENU or SUB MENU.
- VCD : Press RETURN.

Notes:
- If “⃠” appears on the screen, the operation is prohibited by the unit or disc.
- The operation is different by disc. Please follow the guidance of the screen.

Starting play from where you stopped it (Resume Function)

RAM DVD-R DVD-A DVD-V VCD CD MP3

1 Press STOP during play.
- “PLAY” flashes on the unit’s display (Normal play only). The unit memorizes the position.

2 Press PLAY/×1.3.
- Play starts from where you stopped it.

■ To cancel the resume function (Normal play only)

Press STOP while the unit remembers the position. (The position is also cleared when you turn the unit off.)

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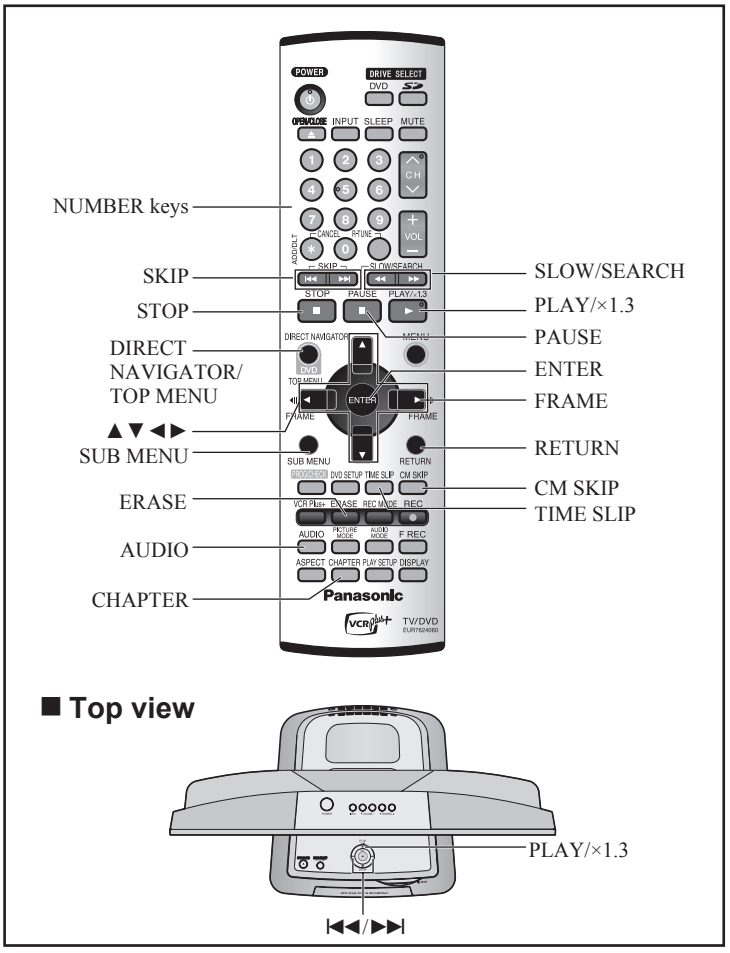
Various Playback

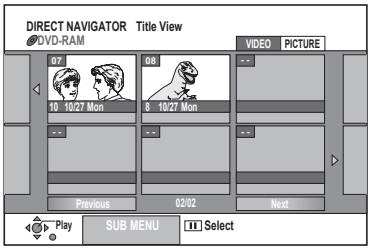


Preparation
• Insert a disc that has been recorded on.

Selecting recorded programs (titles) to play

RAM DVD-R

1 Press DIRECT NAVIGATOR.



2 Press ▲▼◄► to select the title and press ENTER.
• You can also select titles with the NUMBER keys.
e.g., 5: [0] → [5] 15: [1] → [5]
• If you enter a number larger than the total number of titles, the last title is selected.

■ To stop play
Press STOP.

■ To erase a title during play (p. 52)
Press ERASE.
Press ◄► to select “Erase” and press ENTER.

■ To edit
See pages 51~53.

■ To exit the screen
Press RETURN or DIRECT NAVIGATOR.

DIRECT NAVIGATOR screen icons	
:	Title protected.
:	Title that was not recorded due to recording protection (Digital broadcasts etc.)
X :	Title cannot be played because data is damaged.
● :	Currently recording.

Fast forward and rewind (Search)

RAM DVD-R DVD-A DVD-V VCD CD MP3

1 Press ►► FF/SLOW or ◄◄ REW/SLOW during play.
• On the unit, hold down ►►I or I◄◄.
• The speed increases up to 5 steps.
• Press PLAY/×1.3 to restart play.
• Sound is output only in the first level of fast forward. In the case of DVD-A (except moving picture parts), CD and MP3, it is output in all levels.
• You can turn off the sound during search. (Refer to “Search Audio & PLAY ×1.3” on page 69.)
• Press PLAY/×1.3 to return to normal speed.

Skipping

RAM DVD-R DVD-A DVD-V VCD CD MP3

1 Press SKIP ►►I or SKIP I◄◄ during play or while paused.
• On the unit, press ►►/►►I or I◄◄/◄◄.
• Each press increases the number of skips.
• Pressing I◄◄ or ►►I while the playback control feature on Video CDs (p. 70) is working may take you to a menu screen.

Skipping a minute forward (CM Skip)

RAM DVD-R

1 Press CM SKIP during play.
• Play restarts from approximately a minute later.

Note:
• If the start of the next program is within one minute of the point you skipped from, play restarts from the beginning of that program.

Starting from a selected item

RAM DVD-R DVD-A DVD-V VCD CD MP3

Starting play from a selected title, chapter or track.

1 Press NUMBER keys to select the item during play or while stopped.

e.g., 5: [0] → [5]
15: [1] → [5]

MP3

e.g., 5: [0] → [0] → [5]
15: [0] → [1] → [5]
115: [1] → [1] → [5]

Notes:
- This may not work with some discs.
- This works only when stopped (screen saver is displayed on the television) with some discs.
- DVD-A
  - A group number can be specified while the screen saver is displayed.
    e.g., 5: [5]
  - **Playing bonus groups**
    Some discs contain bonus groups. If a password screen appears after selecting a group, enter the password with the NUMBER keys and press ENTER. Refer also to the disc's jacket.

Slow-motion playback

RAM DVD-R DVD-A (Motion picture parts only)
DVD-V VCD

1 Press ▶▶ FF/SLOW or ◀◀ REW/SLOW while paused.
- On the unit, hold down ▶▶I or I◀◀.
- When slow motion play is continued for about 5 minutes it pauses automatically.

■ To return to normal speed
Press PLAY/×1.3.

Notes:
- The speed increases up to 5 steps.
- Press PLAY to restart play.
- VCD Backward slow-motion (◀◀) does not work.

Quick View

RAM (Only with Dolby Digital)

The play speed can be increased without distorting the audio.

1 Press and hold PLAY/×1.3 during play.

■ To return to normal speed
Press PLAY/×1.3.

Notes:
- Output is in PCM when using a digital connection. (p. 18)
- This is cancelled when you perform skip, pause, or when play reaches a point where a program recorded in sound other than Dolby Digital starts.
- This does not work if the setting is "Off" in "Search Audio & PLAY ×1.3". (p. 69)
- This does not work when recording is in XP or FR mode during simultaneous recording and play. (p. 42).

Frame-by-frame viewing

RAM DVD-R DVD-A (Motion picture parts only)
DVD-V VCD

1 Press FRAME II► or FRAME ◄II while paused.

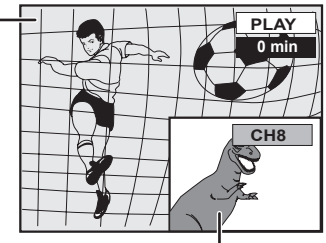
■ To return to normal speed
Press PLAY/×1.3.

Notes:
- Each press shows the next frame.
- Press PLAY to restart play.
- VCD Backward frame-by-frame (◄II) does not work.
- Whether pictures are advanced by "Frame" or "Field" is selected automatically. (pp. 68, 70)

Displaying the television image as a picture-in-picture

RAM DVD-R

1 Press TIME SLIP during play.
- The unit displays the television image as a picture-in-picture.
- You will hear the playback audio.
- Press TIME SLIP again to cancel.
- Time Slip becomes unavailable if any V-Chip setting is made in the LOCK item of the SET UP.

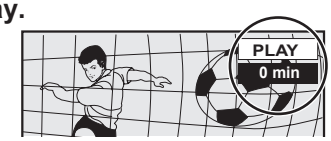


■ To show the play images in full
Press TIME SLIP.

Skipping the specified time (Time Slip)

RAM DVD-R

1 Press TIME SLIP during play.



2 Press ▲▼ to select the time while the indication is displayed.
- The time indicator will go off after about 5 seconds, but will turn on again when you set the indicator.
- Press ▲▼ to alter in one-minute units. Press and hold ▲▼ to alter in 10-minute units.

3 Press ENTER.
- Play skips the specified time.

Note:
- DVD-R Time Slip is not possible during recording.

For assistance, please call : 1-800-211-PANA(7262) or, contact us via the web at:http://www.panasonic.com/contactinfo

• When ⃠ appears on the screen while a button is being pressed, it means that the corresponding operation is prohibited by the unit or the disc.

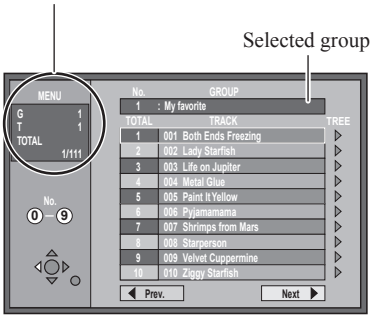
Using menus to play MP3

MP3

This unit can play MP3 files recorded on CD-R/RW with a computer. Files are treated as tracks and folders are treated as groups.

1 Press TOP MENU during stop or play.

G: Group no.
T: Track no. in the group
TOTAL: Track no./Total track no. in all groups



Using the tree screen to find a group

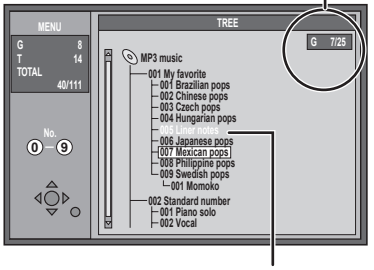
2 Press ► to display the tree screen while the file list is displayed. Press ▲▼◄► to select a group and press ENTER.

• The file list for the group appears.

Note:

• Press ◄► to jump layers in the tree screen.

Selected group no. /Total group no.
If the group has no track, "– –" is displayed as group number.



You cannot select groups that contain no compatible files.

Using the tree screen to find a track

2 Press ▲▼ to select the track and press ENTER.

• Play continues to the last track in the last group.
• "☞" indicates the track currently playing.
• You can also select the track with the NUMBER keys.
e.g., 5: [0] → [0] → [5]
15: [0] → [1] → [5]
115: [1] → [1] → [5]

■ To show other pages

Press ▲▼◄► to select "Prev." or "Next" and press ENTER.

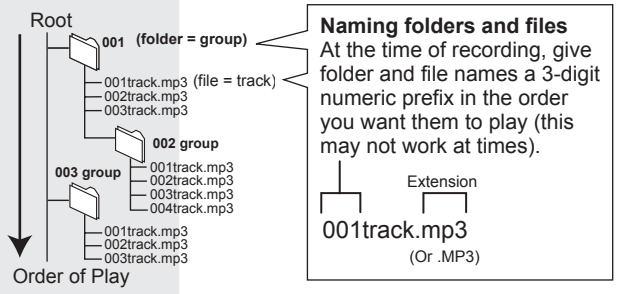
• After listing all the tracks in one group, the list for the next group appears.

■ To exit the screen

Press RETURN or TOP MENU.

Notes:

• Reading or play of the disc may take time if there are a lot of still pictures or sessions.
• The display order may differ from how the order is displayed on a computer.
• A folder which has no MP3 files is indicated in black. You cannot select groups with no MP3 files.



• For other notes concerning the MP3, see page 11.

To erase a program that is being played back

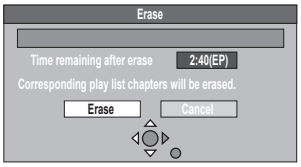
RAM DVD-R

You can erase titles while playing.

Since the program, and play lists (p. 57) created from it are erased irretrievably by this procedure, you should be certain you wish to erase before carrying it out.

1 Press ERASE during play.

• A confirmation screen will be displayed.



2 Press ◄► to select "Erase" and press ENTER.

Notes:

• RAM It is not possible to erase the program when you are carrying out simultaneous recording and play. (p. 42)
• DVD-R The amount of space remaining on the disc does not increase even if you erase programs.
• If the confirmation screen disappears before you complete the operation, start from the beginning again.
• It is not possible to erase a title that is in the process of being recorded.

Create chapters

RAM

1 Press CHAPTER during play.

- "CHAPTER" lights on the Front Display for a few seconds.
- Press SKIP ▶▶I or SKIP I◀◀ to skip to the start of a chapter.
- You cannot activate this function when recording and playing at the same time.

Notes:

- You can play and edit the created chapters. (pp. 51~53, 57~59)
- For other notes concerning the chapter, see page 51.

Changing audio during play

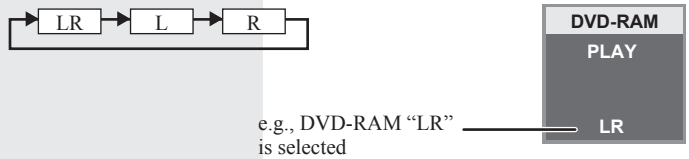
RAM DVD-A DVD-V VCD

You can change the audio being received or played.

1 Press AUDIO.

- How the type changes depends on when you press the button.

While playing DVD-RAM or Video CD



e.g., DVD-RAM "LR" is selected

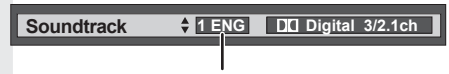
- RAM If it is a recording of an SAP broadcast, each time you press AUDIO:
  MAIN ↔ SAP

Notes:

- The audio cannot be changed while Time Slip is used.
- RAM You may be unable to change the audio when you have connected the unit to an AV receiver through the DIGITAL AUDIO OUT terminal and "Dolby Digital" is set to "Bitstream". If this occurs:
  - Change "Dolby Digital" to "PCM" or "Bitstream". (p. 69)
  - Connect also with an audio cable (pp. 18~19) and change the input on the receiver.

While playing DVD-Audio or DVD-Video

You can change the audio channel number each time you press the button. This allows you to change things like the soundtrack language.



e.g., DVD-V English is selected language.

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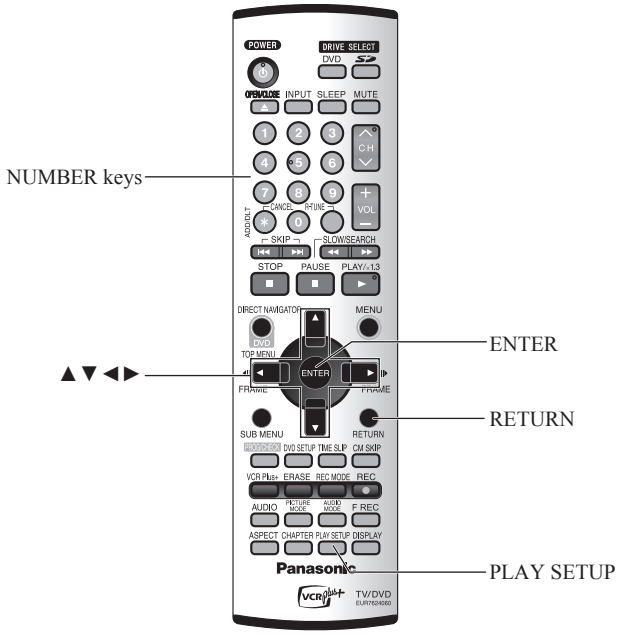
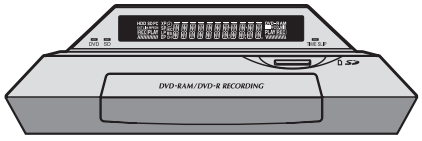
Using On-screen Menus



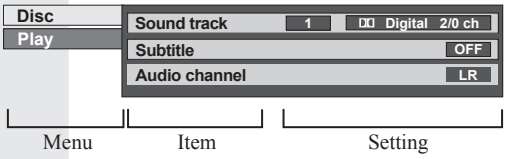
■ **Front view**



Common procedures

1 Press PLAY SETUP in play mode.

e.g., DVD-RAM



2 Press ▲▼ to select the menu and press ►.

3 Press ▲▼ to select the item and press ►.

4 Press ▲▼ to select the setting.

■ To clear the on-screen menus

Press RETURN.

Notes:

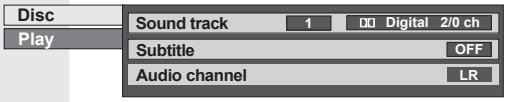
- The screens depend on the disc contents.
- Depending on the disc contents, there are some items that you cannot select or change.

Disc menu

RAM DVD-R DVD-A DVD-V VCD

Not available when playing CDs and MP3 discs.

e.g., DVD-RAM



Sound track	**Sound track language** DVD-A DVD-V See A below.	
	Audio attribute RAM DVD-R DVD-A DVD-V See B on next page.	
	Karaoke vocal, on and off DVD-V Solo: ON ↔ OFF Duet: OFF ↔ V1+V2 ↔ V1 ↔ V2	
Subtitle	**Subtitle language** DVD-A DVD-V See A below. • Changing the subtitle language is only possible with discs on which two or more subtitle languages are recorded. • Any change must be made from the menu recorded on the disc. (Not available on all discs.)	
	Subtitle on/off RAM DVD-R DVD-A DVD-V Turn the Subtitle ON or OFF.	
Angle	**Angle number** DVD-A DVD-V • Changing the angle is only possible with discs on which two or more angles are recorded. • Any change must be made from the menu recorded on the disc. (Not available on all discs.)	
STILL-P	**Page**	**Still picture number** DVD-A • When “Return” is displayed: Select “Return” and press ENTER to return to the default page. • When “RANDOM” is displayed: Select “RANDOM” and press ENTER, the picture changes randomly each time you press ENTER.
	Slide Show	Plays according to the default order on the disc. DVD-A
Audio channel	**Audio channel** RAM VCD Select the audio channel. (p. 48)	
PBC	**Playback control on/off** VCD Indicates whether menu play (playback control) is on or off.	

A Sound track/subtitle language

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 (pp. 67~69)

(Continued on next page.)

B Sound track/subtitle language

LPCM/PPCM/ ▯▯ Digital/DTS/MPEG: Signal type
k (kHz): Sampling frequency
b (bit): Number of bits
ch (channel): Number of channels

e.g., 3/2 .1ch

- .1: Subwoofer signal (not displayed if there is no subwoofer signal)
- 0: No surround
  1: Mono surround
  2: Stereo surround (left/right)
- 1: Center
  2: Front left + Front right
  3: Front left + Front right + Center

Notes:

- When playing back recordings of SAP broadcasts, “1+1 ch” will be displayed.
- You can only select subtitles, soundtracks, and angles if they are recorded on the disc.
- Some discs allow changes to soundtracks, subtitles, and angles only by using the disc’s menus.
- If the subtitles overlap closed captions recorded on discs, turn the subtitles off.

Play menu

RAM | DVD-R | DVD-A | DVD-V | VCD | CD | MP3

e.g., DVD-RAM

Repeat play

Each time you press ▲▼:

- RAM DVD-V DVD-R: Title ↔ Chapter ↔ OFF
- VCD CD: Track ↔ All ↔ OFF
- DVD-A MP3: Track ↔ Group ↔ OFF
- While playing a play list:
  RAM: PL (Play list) ↔ OFF

Select “OFF” to cancel.

Notes:

- You cannot use repeat play to repeat an entire DVD-Audio, DVD-Video, MP3 discs or all the play lists on a DVD-RAM.
- Repeat play does not work if the disc’s elapsed play time is not shown on the unit’s display.
- ERASE does not work while in repeat play mode.

■ If the Video CD has playback control

1. While stopped (the screen saver is on the television), press the NUMBER keys to select a track. (p. 46)
2. Select the repeat mode.

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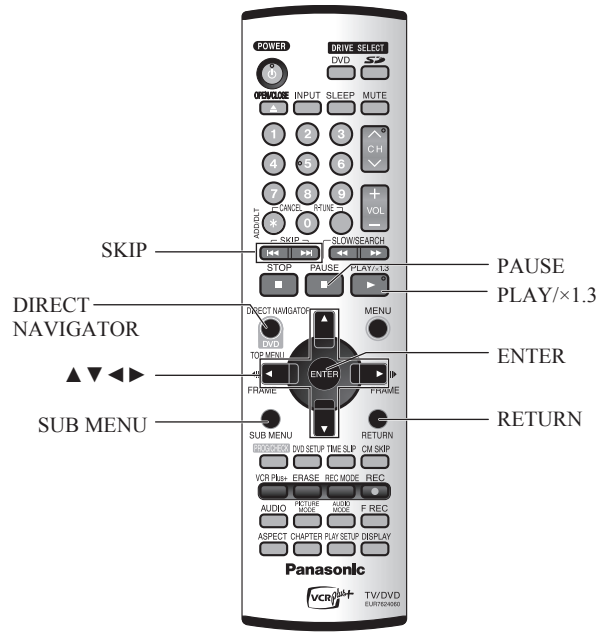
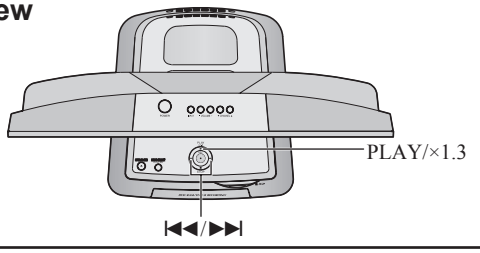
Editing the Recorded Programs (Using the Direct Navigator)



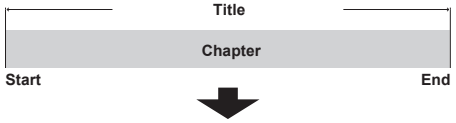
■ Top view



RAM DVD-R

■ Title/Chapter

Programs are recorded as a single title consisting of one chapter.



RAM You can divide a title into multiple chapters. (See “Create Chapter” on page 48, “Divide Chapter” on page 53.)

RAM You can change the order of chapters and create a play list.

- DVD-R Titles are divided into about 5-minute chapters after finalizing. (p. 62)

The maximum number of items on a disc:

- Titles: 99
- Chapters: Approximately 1 000 (Depends on disc contents.)

Notes:

- Once erased or partially erased, it cannot be restored to its original state. Make certain before proceeding.
- You cannot edit during recording.

Preparation

- Release protection before proceeding:
  - Cartridge (p. 9) RAM
  - Disc (p. 60) RAM
- RAM When the title is protected (p. 52), you can only access “Properties” and “Cancel Protection”. Release the protection to access other items.

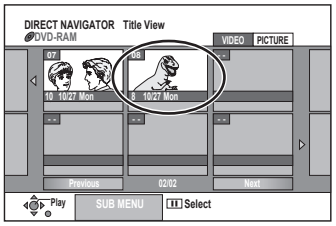
Editing titles/chapters and playing chapters

1 Press DIRECT NAVIGATOR.

- RAM Press ▲▼◀▶ to select “VIDEO”. If you play still pictures, press ▲▼◀▶ to select “PICTURE”. (p. 54)

2 Press ▲▼◀▶ to select the title.

- You can also select a title by entering a 2-digit number with the numeric buttons.
  e.g., 5: [0] → [5]
  15: [1] → [5]
- If you enter a number larger than the total number of titles, the last title is selected.



■ To show other pages

Press ▲▼◀▶ to select “Previous” or “Next” and press ENTER.

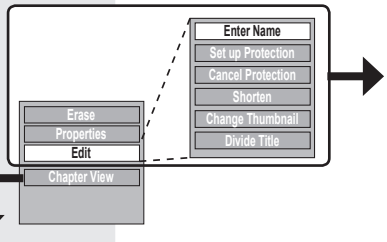
- You can also press SKIP ▶▶I or SKIP I◀◀ to show other pages.

■ Multiple editing

Select with ▲▼◀▶ and press II (PAUSE). (Repeat.)
A check mark appears. Press II (PAUSE) again to cancel.

3 Press SUB MENU, then ▲▼ to select the operation and press ENTER.

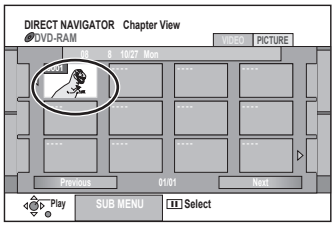
- If you select “Edit”, press ▲▼ to select the operation and press ENTER.



■ If you select “Chapter View”.

4 Press ▲▼◀▶ to select the chapter.

- You can also select a chapter by entering a 3-digit number with the numeric buttons.
  e.g., 5: [0] → [0] → [5]
  15: [0] → [1] → [5]
  115: [1] → [1] → [5]
- If you enter a number larger than the total number of chapters, the last chapter is selected.



■ To start play

Press ENTER.

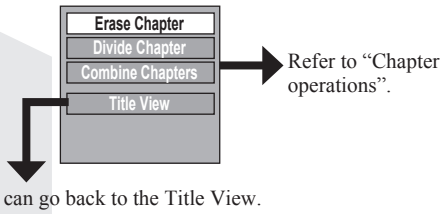
■ To edit

Go to Step 5 on next page.

- **To show other pages/Multiple editing (see above)**

(Continued on next page.)

5 Press SUB MENU, then ▲▼ to select the operation and press ENTER.



■ **To exit the screen**
Press DIRECT NAVIGATOR.

■ **To return to the previous screen**
Press RETURN.

Title operations

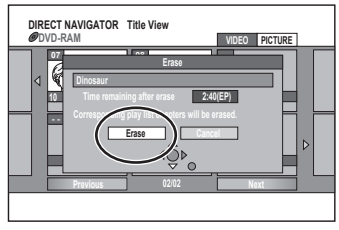
1 Do Steps 1~3 on page 51.

Erase

RAM **DVD-R** (Multiple editing is possible. (p. 51))

The title is irretrievably erased when you use this procedure and cannot be retrieved. Check the title carefully before erasing to ensure it isn't one you want to keep.

2 Press ◄► to select "Erase" and press ENTER.

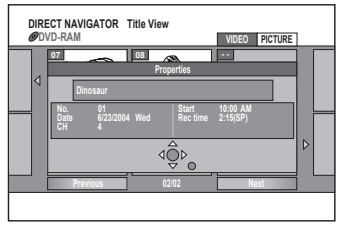


Notes:
- The disc's available recording time may not increase after erasing short titles.
- The available recording time on DVD-R does not increase when you erase titles.

Properties

RAM **DVD-R**

Information (e.g., recording time) is shown.



Edit → Enter Name

RAM **DVD-R**

Refer to "Entering text" on page 63.

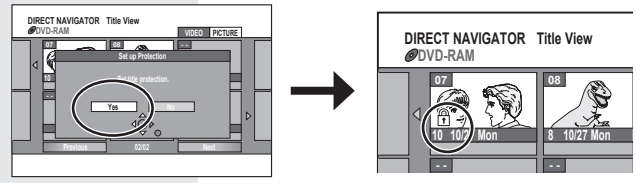
Note:
- The full name is shown in the "Properties" screen, but if you enter a long name, only part of it is shown in the title list.

Edit → Set up Protection/Cancel Protection

RAM (Multiple editing is possible. (p. 51))

If set, this will protect the title from accidental erasure.

2 Press ◄► to select "Yes" and press ENTER.
- The lock symbol "🔒" appears when the title is protected.



Note:
- Titles will be erased even if they are protected if you format the disc with DISC SETTING. (p. 61)

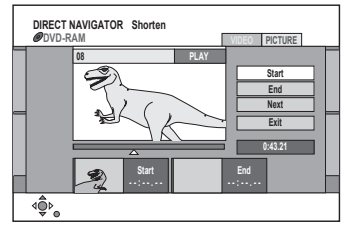
Edit → Shorten

RAM

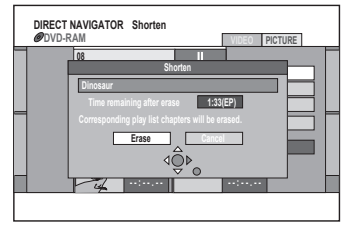
You can remove unnecessary parts of the recording such as commercials.
- The program segment, and play list scenes created from it, are erased irretrievably when you use this procedure. Check carefully before proceeding.

2 Press ENTER at the start point and end point of the section you want to erase.
- See "For quicker editing" on page 53.

3 Press ▲▼ to select "Exit" and press ENTER.
- Select "Next" and press ENTER to erase other sections.



4 Press ▲◄ to select "Erase" and press ENTER.



■ **To erase another part of the same title**
After storing the point in "Start" and "End", select "Next" in Step 2 and perform Step 4, then repeat Steps 2~4.

Notes:
- You may not be able to specify start and end points within 3 seconds of each other.
- You cannot specify start and end points if the picture recorded is stilled.
- The unit pauses when the title reaches its end during this procedure.
- The disc's available recording time may not increase after erasing short parts of titles.

For assistance, please call : 1-800-211-PANA(7262) or, contact us via the web at:http://www.panasonic.com/contactinfo

• When ⃠ appears on the screen while a button is being pressed, it means that the corresponding operation is prohibited by the unit or the disc.

Edit → Change Thumbnail

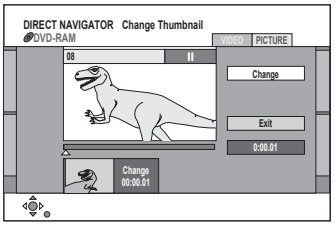
RAM **DVD-R**

You can change an image to be shown as a thumbnail picture in the Title View.

2 **Press PLAY/×1.3 to start play.**

3 **Press ENTER when the image you want to use as a thumbnail is shown.**
- See “For quicker editing” below.
- **To change to another point in the same title:**
  Select “Change” with ▲▼ and press PLAY/×1.3, and then repeat Steps 3~4.

4 **Press ▲▼ to select “Exit” and press ENTER.**
- The displayed scene is changed at this point.

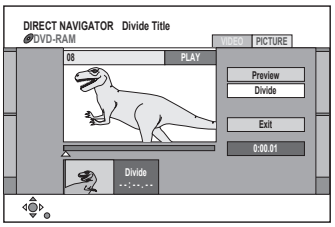


Edit → Divide Title

RAM

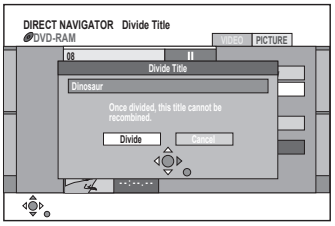
You can divide a selected title into two. You must make sure when dividing a title because it cannot be recovered after the procedure.

2 **Press ENTER at the point you want to divide the title.**
- See “For quicker editing” below.
- **To confirm the division point:**
  Press ▲▼ to select “Preview” and press ENTER. (Play will begin from a point 10 seconds prior to and after the division point.)
- **To change the division point:**
  Press ▲▼ to select “Divide” and press ENTER at the point you want to change.



3 **Press ▲▼ to select “Exit” and press ENTER.**

4 **Press ◄► to select “Divide” and press ENTER.**
- The title is divided at the point.



Notes:
- The divided titles retain the name of the original title. They also retain the CPRM property (p. 70) of the original.
- Use search and slow-motion to find the points.
- It is not possible to carry out “Divide” in the following cases:
  - When the resulting part(s) are extremely short.
  - When the total number of titles is more than 99.

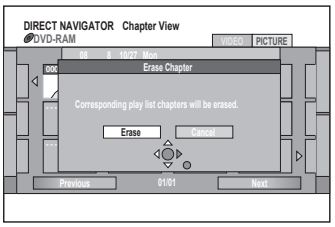
Chapter operations

1 **Do Steps 1~5 on pages 51~52.**

Erase Chapter

RAM (Multiple editing is possible. (p. 51))

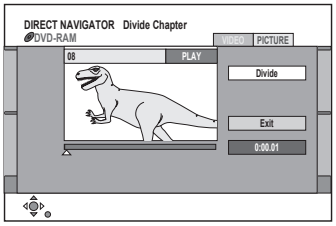
2 **Press ◄► to select “Erase” and press ENTER.**
- Even if you erase the chapter, the original title is not erased.



Divide Chapter

RAM

2 **Press ENTER at the point you want to divide.**
- See “For quicker editing” below.
- Repeat this step to divide at other points.



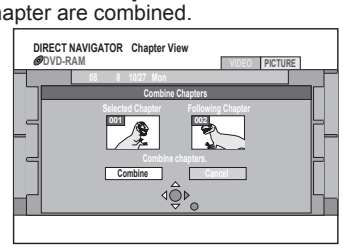
3 **Press ▲▼ to select “Exit” and press ENTER.**
- A little portion of the recording directly preceding the division point may be lost.

Notes:
- The divided chapters retain the name of the original title. They also retain the CPRM property (p. 70) of the original.
- It is not possible to carry out “Divide”, when the resulting part(s) are extremely short.

Combine Chapters

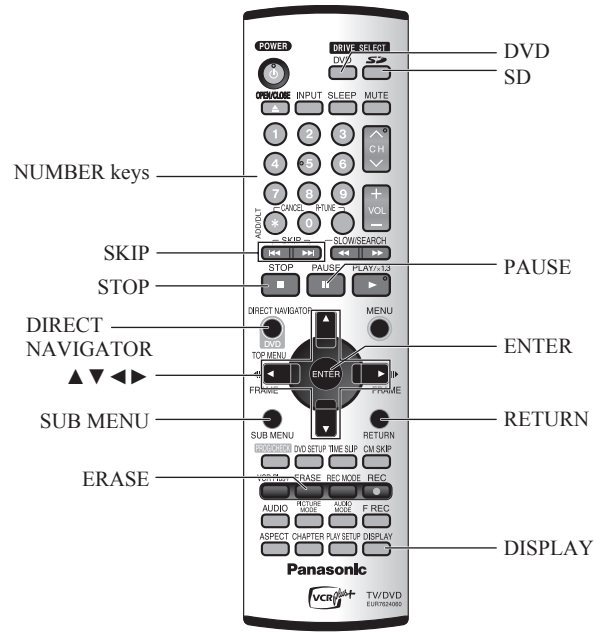
RAM

2 **Press ◄► to select “Combine” and press ENTER.**
- The selected chapter and next chapter are combined.

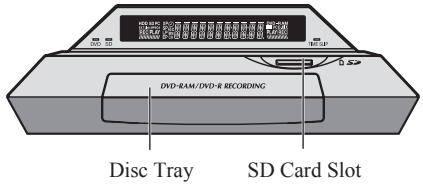


For quicker editing
- Use search (p. 45), Time Slip (p. 46) or slow-motion (p. 46) to find the desired point.
- Press SKIP ▶▶I or SKIP I◀◀ to skip to the end of a title.

Editing and Playing Still Pictures (Using the Direct Navigator)



■ **Front view**



RAM SD

Playing still pictures on the Card or DVD-RAM

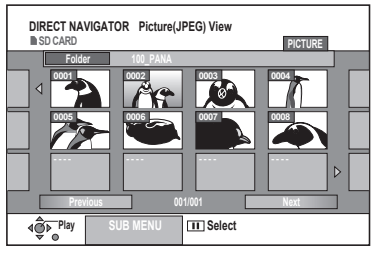
1 **Insert a DVD-RAM or Card. (p. 34)**

2 **Press SD or DVD to select the drive.**

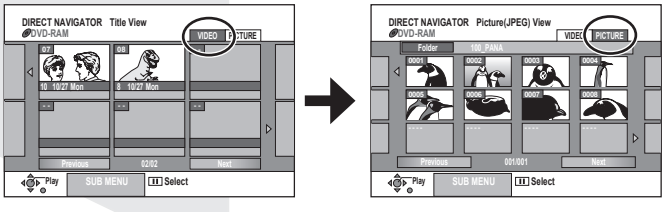
3 **Press DIRECT NAVIGATOR.**

• RAM Press ▲▼◄► to select “PICTURE” tab and press ENTER.

e.g., Card



e.g., DVD-RAM



4 **Press ▲▼◄► to select the still picture and press ENTER.**

• You can also select titles with the NUMBER keys.

e.g., 5: [0] → [0] → [0] → [5]
15: [0] → [0] → [1] → [5]
115: [0] → [1] → [1] → [5]
1115: [1] → [1] → [1] → [5]

• Press ◄► to display the previous or next picture.

• Useful functions during still picture play. (p. 55)

■ **To stop playing**

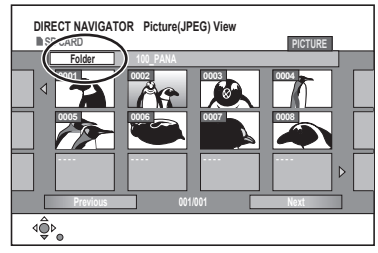
Press STOP.

■ **To exit the screen**

Press DIRECT NAVIGATOR.

To select the sill pictures in another folder

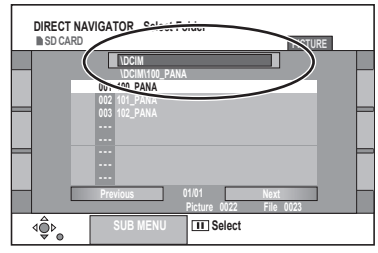
5 **Press ▲▼◄► to select “Folder” then press ENTER.**



6 **Press ▲▼ to select the folder, and press ENTER.**

• You can also select titles with the NUMBER keys.

e.g., 5: [0] → [0] → [5]
15: [0] → [1] → [5]
115: [1] → [1] → [5]

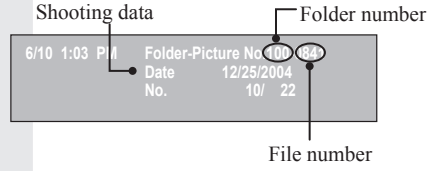


• If there is a multiple number of higher folders recognizable, you can switch them using ◄►.

To display information about the Still Pictures

1 **Press DISPLAY twice while in still picture display.**

• If “SD Card” or “DVD-RAM” is displayed at the upper right, press DISPLAY once.



■ **To exit the picture properties screen**

Press DISPLAY.

Note:

• Still pictures cannot be played during recording.

For assistance, please call : 1-800-211-PANA(7262) or, contact us via the web at:http://www.panasonic.com/contactinfo

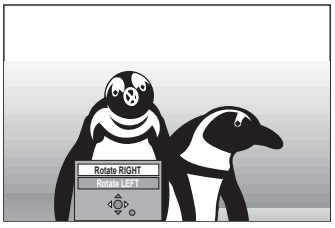
Useful functions during still picture play

RAM SD

Rotate

1 **Press ▲▼◄► to select a picture in the DIRECT NAVIGATOR screen and press ENTER.**
- The selected picture is displayed in full screen.

2 **Press SUB MENU.**



3 **Press ▲▼ to select “Rotate RIGHT” or “Rotate LEFT,” and press ENTER.**
- **Rotate RIGHT:**
  Picture is rotated 90° clockwise.
- **Rotate LEFT:**
  Picture is rotated 90° counterclockwise.

e.g., When you select “Rotate RIGHT”

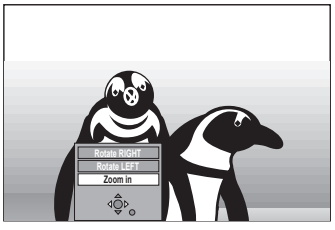
Note:
- Rotation information will not be stored.

Zoom in/Zoom out

(Only for a still picture with a low pixel count)

1 **Press ▲▼◄► to select a picture in the DIRECT NAVIGATOR screen and press ENTER.**
- The selected picture is displayed in full screen.

2 **Press SUB MENU.**



3 **Press ▲▼ to select “Zoom in” and press ENTER.**
- To return the picture to its original size, press ▲▼ to select “Zoom out” in step 3 and press ENTER.
- When zooming in, the picture may be cut off.
- The enlargement information will not be stored.

Erase

1 **Press ERASE during play.**

2 **Press ◄► to select “Erase” and press ENTER. (p. 56)**
- Once erased, the recorded contents are lost and cannot be restored. Make certain before proceeding.

Editing Still Pictures

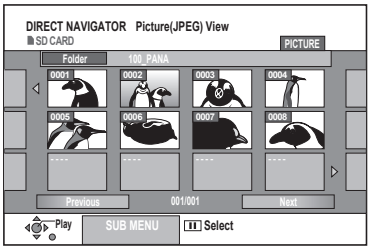
RAM SD

Preparation
- Release protection before proceeding:
  - Cartridge (p. 9) RAM
  - Disc (p. 60) RAM
  - Write Protect (p. 11) SD
- When the picture is protected (p. 56), you can only access “Properties” and “Cancel Protection”. Release the protection to access other items.

1 **Press SD or DVD to select the drive.**

2 **Press DIRECT NAVIGATOR.**
- RAM Press ▲▼◄► to select “PICTURE” tab and press ENTER.

e.g., Card



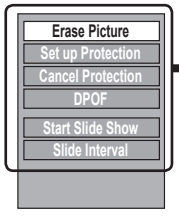
3 **Press ▲▼◄► to select the picture.**
- The selected picture is marked with a frame.

■ To show other pages
Press ▲▼◄► to select “Previous” or “Next” and press ENTER.
- You can also press SKIP ▶▶I or SKIP I◀◀ to show other pages.

■ Multiple editing
Select with ▲▼◄► and press II (PAUSE). (Repeat.)
A check mark appears. Press II (PAUSE) again to cancel.

■ To select the still pictures in another folder
See page 54.

4 **Press SUB MENU, then ▲▼ to select the operation and press ENTER.**



Refer to “Picture and folder operations” on next page.

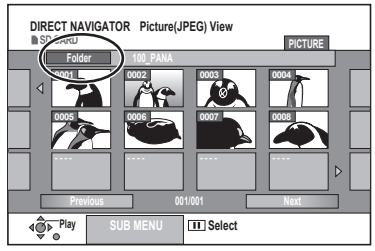
■ To exit the screen
Press DIRECT NAVIGATOR.

■ To return the previous screen
Press RETURN.

Editing still pictures folders

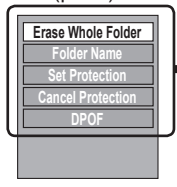
1 **Do Steps 1~2 (see "Editing Still Pictures") on page 55.**

2 **Press ▲▼◄► to select "Folder" and press ENTER.**



3 **Press ▲▼ to select the Folder.**
- To show other pages/Multiple editing. (p. 55)

4 **Press SUB MENU, then press ▲▼ to select the operation and press ENTER.**
- To select another higher folder. (p. 54)



Refer to "Picture and folder operations" below.

■ To exit the screen
Press DIRECT NAVIGATOR.

■ To return the previous screen
Press RETURN.

Picture and folder operations

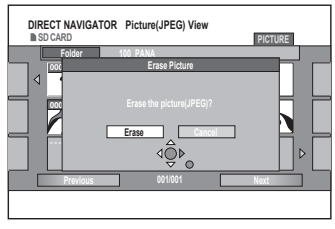
1 **Do Steps 1~4 on page 55 to edit still picture or do Steps 1~4 above to edit folder.**

Erase Picture/Erase Whole Folder

RAM SD (Multiple editing is possible. (p. 55))

You can delete still pictures (JPEG) from a Card or DVD-RAM.

2 **Press ◄► to select "Erase" and press ENTER.**



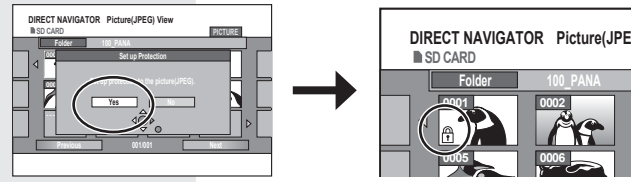
Notes:
- The locked picture cannot be erased.
- Once erased, the recorded contents are lost and cannot be restored. Make certain before proceeding.
- When erasing a folder, even the files not containing still pictures will also be erased if they are inside the folder. (This does not apply to folders under the folder concerned.)

Set up Protection/Cancel Protection

RAM SD (Multiple editing is possible. (p. 55))

If set, this will protect the still picture from accidental erasure.

2 **Press ◄► to select "Yes" and press ENTER.**
- The lock symbol "🔒"appears when the still picture is protected.



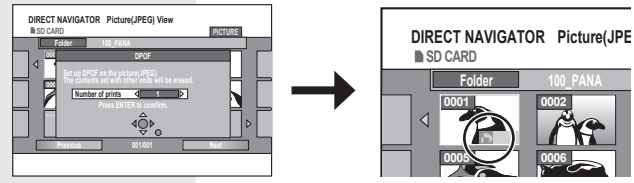
Note:
- Even if the protection setting is used by this unit to protect a folder, the folder may be erased by another unit.

DPOF

SD (Multiple editing is possible. (p. 55))

You can select a whole folder or individual pictures for printing and specify the number of prints to be made. "DPOF" means Digital Print Order Format.

2 **Press ◄► to select number of print (0 to 9) and press ENTER.**
- "D" mark is displayed.
- This appears on the still pictures inside a folder when you make the DPOF setting for the folder.



■ To cancel the print setting
Set the number of print to "0".

Notes:
- When this is set by this unit, any settings established by other units will be released.
- Print settings (DPOF) made using this unit may not be viewable on other equipment.
- Settings cannot be made for folders and files not in accordance with DCF standards or if there is no remaining space on the card.

Start Slide Show/Slide Interval

RAM SD

You can display still pictures one by one with constant interval.

■ To change the display timing
Press ▲▼ to select "Slide Interval" and press ENTER.
Press ◄► to select the desired timing (0–30 seconds) and press ENTER.
- To cancel Slide Show, press STOP.

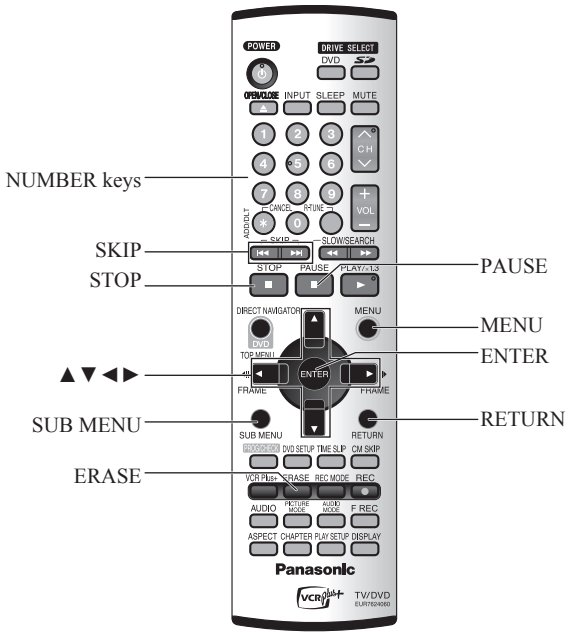
Folder Name

RAM SD

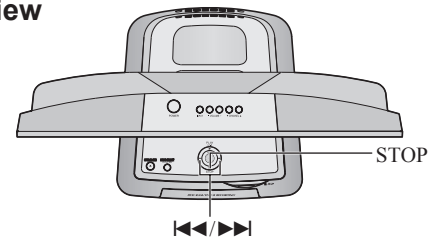
You can give names to still picture folders.
- Refer to "Entering text" on page 63.
- Folder names inputted using this unit may not be displayed on other equipment.

For assistance, please call : 1-800-211-PANA(7262) or, contact us via the web at:http://www.panasonic.com/contactinfo

Using Play List

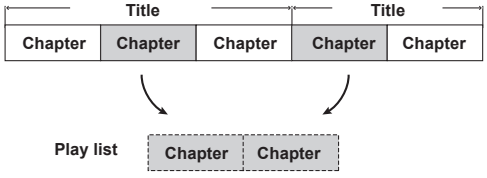


■ Top view



RAM

You can create a play list by gathering your favorite chapters (p. 51) from your recordings. You can also edit the created play list.



- Editing play lists doesn't modify the recording data.
- Play lists are not recorded separately so this doesn't use much capacity.

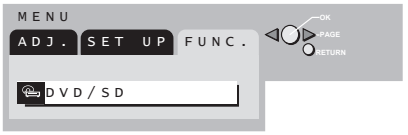
The maximum number of items on a disc:
- Play lists: 99
- Chapters in play lists: Approximately 1 000 (Depends on disc contents.)

Preparation
- Release protection before proceeding:
  - Cartridge (p. 9)
  - Disc (p. 60)
- **Press DVD to select the DVD drive.**

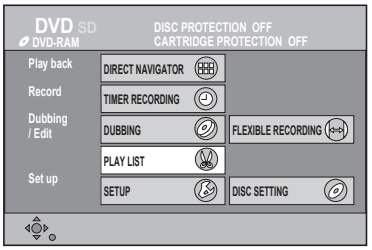
Creating play lists

1 **Press MENU in Stop mode, then press ◄► to select "FUNC."**

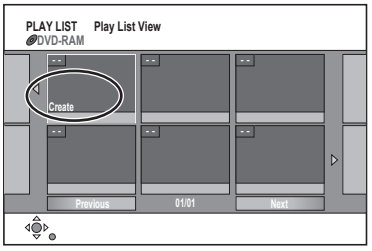
2 **Press ENTER.**



3 **Press ▲▼◄► to select "PLAY LIST" and press ENTER.**

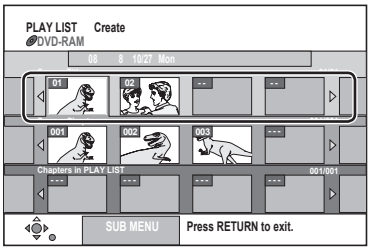


4 **Press ▲▼◄► to select "Create" and press ENTER.**

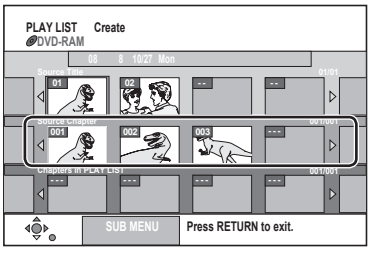


5 **Press ◄► to select the source title and press ▼.**

■ When you want to select all chapters in the title:
- Press ◄► to select the source title and press ENTER, then skip to Step 7.
- Repeat Steps 5~7 to add other titles or chapters.



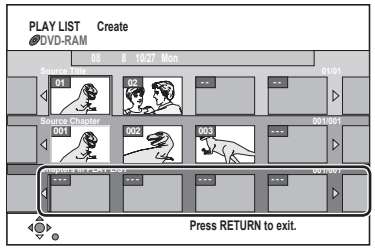
6 **Press ◄► to select the chapter you want to add to a play list and press ENTER.**
- Press ▲ to cancel.



- You can also create a new chapter from the source title. Press SUB MENU to select "Divide Chapter" and press ENTER. (Refer to "Divide Chapter" on page 53.)

(Continued on next page.)

7 **Press ◄► to select the position to insert the chapter and press ENTER.**



- Repeat steps 6~7 to add other chapters.
- Press ▲ to select other source titles.

8 **Press RETURN.**

■ To stop partway through
Press RETURN.

■ To clear the play list screen
Press RETURN.

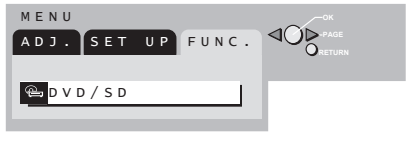
Note:
- You may not be able to specify start and end points if the material is still pictures recorded on other equipment.

Playing play lists

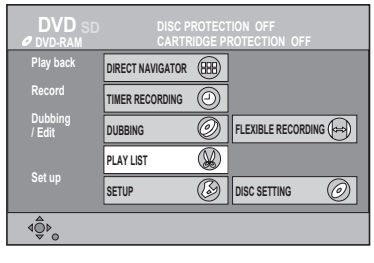
Preparation:
- Create play lists first. (p. 57)

1 **Press MENU in Stop mode, then press ◄► to select "FUNC."**

2 **Press ENTER.**



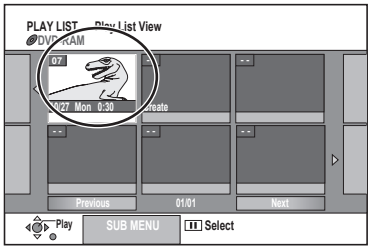
3 **Press ▲▼◄► to select "PLAY LIST" and press ENTER.**



4 **Press ▲▼◄► to select the play list and press ENTER.**
- You can also select a play list from the play list view by entering a 2-digit number with the numeric buttons.

e.g., 5: [0] → [5]
15: [1] → [5]

- Whenever a number greater than the total number of play lists is entered, "Create" is selected.



■ To show other pages
Press ▲▼◄► to select "Previous" or "Next" and press ENTER.
- You can also press SKIP ▶▶I or SKIP I◀◀ to show other pages.

■ To stop play list play
Press STOP. (The play list appears.)

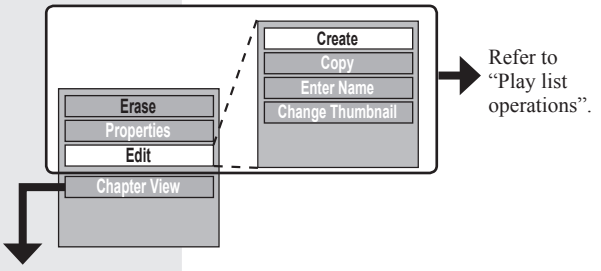
■ To erase a play list during play (p. 59)
Press ERASE.
Press ◄► to select "Erase" and press ENTER.

Using play list to edit play list/chapters

- You can use fast-forward, rewind, pause, and slow-motion while playing chapters just as you can during normal play.

■ Multiple editing
Select with ▲▼◄► and press II (PAUSE). (Repeat.)
A check mark appears. Press II (PAUSE) again to cancel.

5 **Press SUB MENU, then ▲▼ to select the operation and press ENTER.**
- If you select "Edit", press ▲▼ to select the operation and press ENTER.

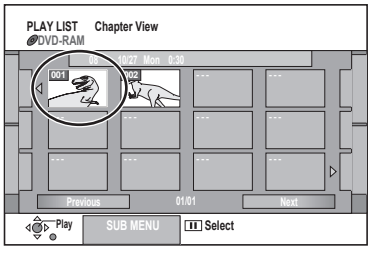


■ If you select "Chapter View"

6 **Press ▲▼◄► to select the chapter.**
- You can also select a chapter by entering a 3-digit number with the numeric buttons.

e.g., 5: [0] → [0] → [5]
15: [0] → [1] → [5]
115: [1] → [1] → [5]

- If you enter a number larger than the total number of chapters, the last chapter is selected.



■ To play a chapter
Press ENTER.

■ To stop chapter play
Press STOP. (The chapter view appears.)

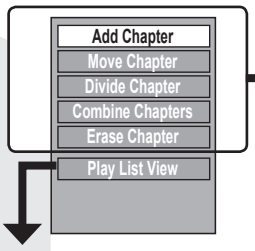
■ To erase a chapter
Press ERASE.
Press ◄► to select "Erase" and press ENTER.

- **To show other pages/Multiple editing (see above)**

For assistance, please call : 1-800-211-PANA(7262) or, contact us via the web at:http://www.panasonic.com/contactinfo

• When ⃠ appears on the screen while a button is being pressed, it means that the corresponding operation is prohibited by the unit or the disc.

7 **Press SUB MENU, then ▲▼ to select the operation and press ENTER.**



Refer to “Chapter operations”.

You can go back to PLAY LIST View.

■ **To exit the screen**
Press RETURN.

■ **To return to the previous screen**
Press RETURN.

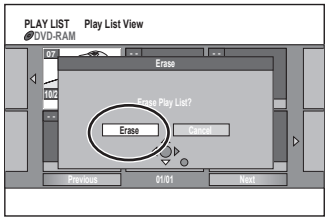
Play list operations

1 **Do Steps 1~5 on page 58.**

Erase

RAM (Multiple editing is possible. (p. 58))

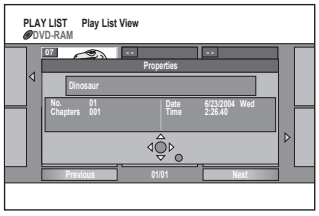
2 **Press ◄► to select “Erase” and press ENTER.**
- The play list is erased.
- Once a play list has been erased, it is irretrievable. Check carefully before proceeding.



Properties

RAM

Play list information (e.g., time and date) is shown.



Edit → Create

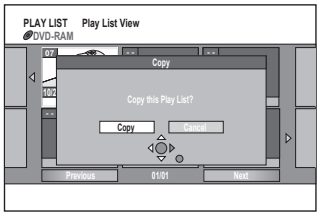
RAM

Refer to “Creating play lists” on pages 57~58.

Edit → Copy

RAM (Multiple editing is possible. (p. 58))

2 **Press ◄► to select “Copy” and press ENTER.**



Edit → Enter Name

RAM

Refer to “Entering text” on page 63.

Note:
- The full name is shown in the “Properties” screen, but if you enter a long name, only part of it is shown in the play list screen.

Edit → Change Thumbnail

RAM

Refer to “Change Thumbnail” on page 53.

Chapter operations

1 **Do Steps 1~7 on pages 58~59.**

Add Chapter

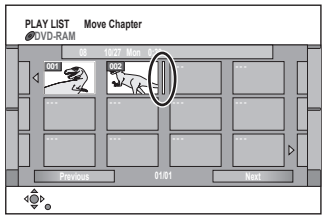
RAM

Refer to “Creating Play lists”, Step 5~8 on pages 57~58.

Move Chapter

RAM

2 **Press ▲▼◄► to select the position to insert the chapter and press ENTER.**
- The chapter is moved and inserted before the highlighted chapter.



Divide Chapter

RAM

Refer to “Divide Chapter“ on page 53.

Combine Chapters

RAM

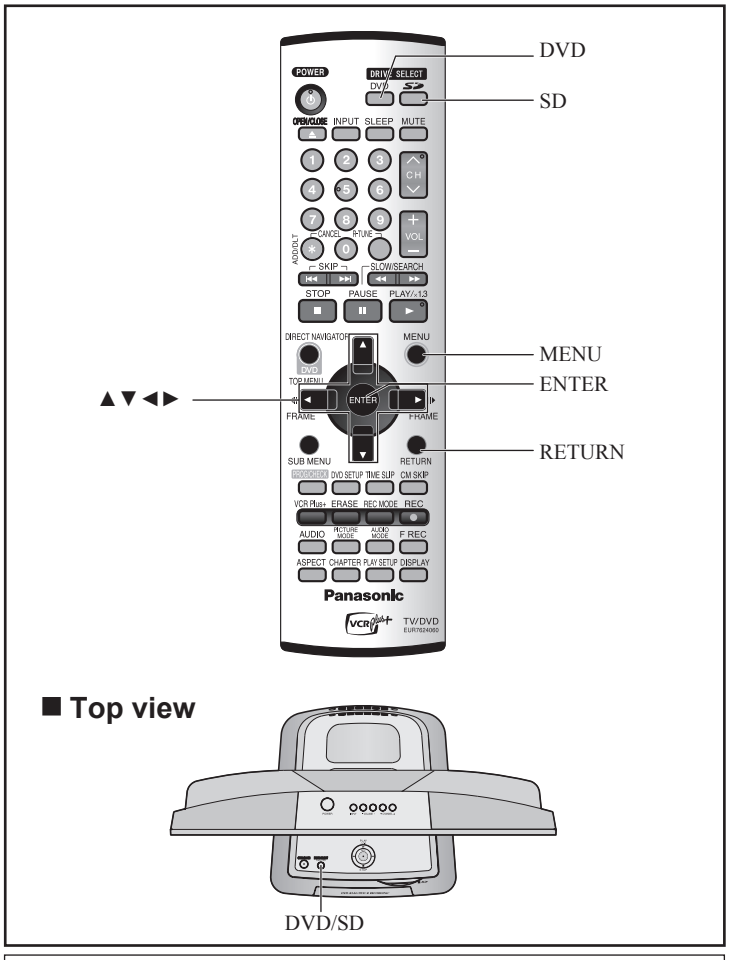
Refer to “Combine Chapters“ on page 53.

Erase Chapter

RAM (Multiple editing is possible. (p. 58))

Refer to “Erase Chapter“ on page 53.

Disc Setting / Card Setting



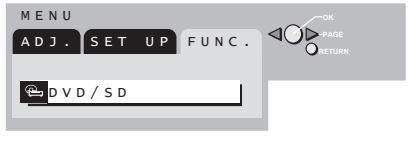
RAM DVD-R SD

Preparation

- **Press SD or DVD to select the drive.**
- Release protection before proceeding:
  - Cartridge (p. 9) RAM
  - Disc (p. 60) RAM
  - Write Protect (p. 11) SD

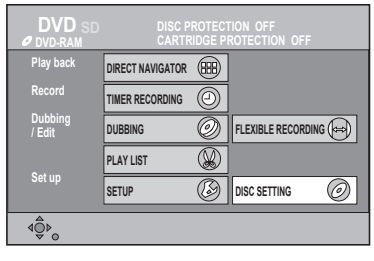
1 **Press MENU in Stop mode, then press ◄► to select "FUNC."**

2 **Press ENTER.**



3 **Press ▲▼◄► to select "DISC SETTING" or "CARD SETTING" and press ENTER.**

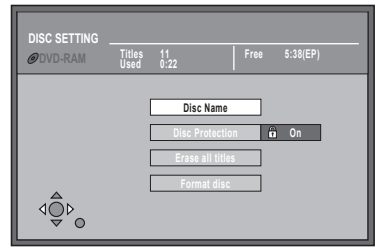
e.g., DVD-RAM



4 **Press ▲▼ to select the operation and press ENTER.**

- After this operation, follow the desired operation.

e.g., DVD-RAM



■ To stop partway

Press RETURN.

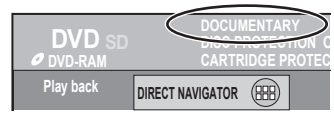
Disc Name

RAM DVD-R

1 **Press ▲▼ to select "Disc Name" and press ENTER in Step 4 above.**

2 **Refer to "Entering text" on page 63.**

- The disc name is displayed in the DVD Functions window.



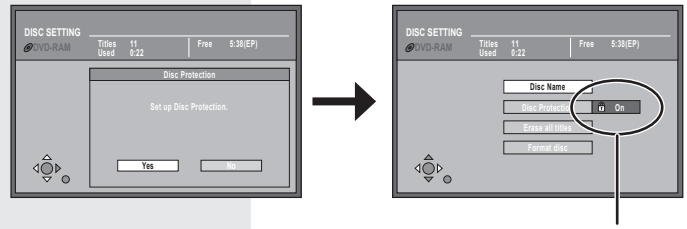
Disc Protection

RAM

This allows you to protect discs from accidental erasure.

1 **Press ▲▼ to select "Disc Protection" and press ENTER in Step 4 above.**

2 **Press ◄► to select "Yes" and press ENTER.**



The lock symbol "🔒"appears closed when the disc is write-protected.

Erase all titles

RAM

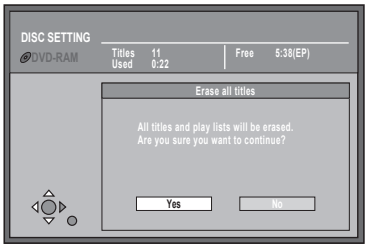
- All titles and play lists created from them will be erased irretrievably when you use this procedure. Check carefully before proceeding.

1 **Press ▲▼ to select "Erase all titles" and press ENTER in Step 4 above.**

For assistance, please call : 1-800-211-PANA(7262) or, contact us via the web at:http://www.panasonic.com/contactinfo

• When ⃠ appears on the screen while a button is being pressed, it means that the corresponding operation is prohibited by the unit or the disc.

2 **Press ◄► to select “Yes” and press ENTER.**



3 **Press ◄► to select “Start” and press ENTER.**

• All titles and play lists are erased.

Notes:
• Computer data and still pictures (JPEG, TIFF) cannot be erased.
• Erase does not work if one or more programs are protected.

Format Disc/Format Card

RAM **SD**

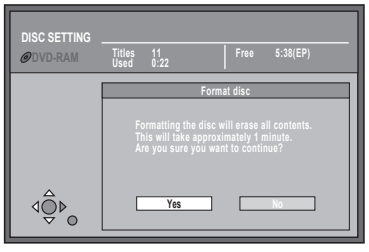
(Refer to “Formatting” on page 70.).

Notes:
• Formatting erases all contents on the disc, including computer data. Check carefully before proceeding.
• Some DVD-RAM are unformatted. Format them before using them in this unit. Formatting also allows you to erase the entire contents of a disc.

1 **Press ▲▼ to select “Format disc” or “Format ”and press ENTER in Step 4 on page 60.**

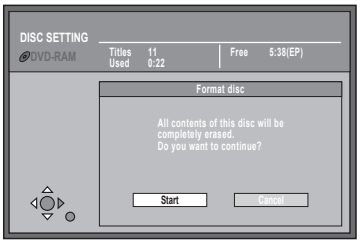
2 **Press ◄► to select “Yes” and press ENTER.**

e.g., DVD-RAM



3 **Press ◄► to select “Start” and press ENTER.**

e.g., DVD-RAM



• A message appears when formatting is finished.

4 **Press ENTER.**

■ To stop formatting

Press RETURN.
(You can cancel formatting if it takes more than 2 minutes. The disc or card must be reformatted if you do this.)

Notes:
• **Do not turn the unit off or disconnect the AC power supply cord while the message “Formatting the disc” is on the TV. This can render the disc unusable.** (This can take up to max. 70 minutes (DVD-RAM). If it takes more than 2 minutes, you can cancel formatting by pressing RETURN. The disc must be reformatted if you do this.)
• All data on the disc or card is erased when it is formatted, including recordings made with this unit. Data written to the disc or card by a computer is also erased.
• When a disc or card has been formatted using this unit, it may not be possible to use it on any other equipment.
• The disc cannot be formatted if the write protect tab (p. 9) is switched to “PROTECT”. Release the protection to continue.
• The SD Card cannot be formatted if the write protection (p. 11) is switched to “LOCK”. Release the protection to continue.
• The message “Unable to format” appears when trying to format discs this unit cannot use.
• DVD-R and CD-R/RW cannot be formatted.

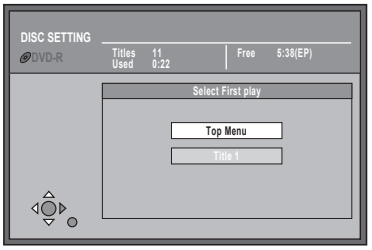
Select First play

DVD-R

Select whether to show the top menu after finalizing the disc. Do this before finalizing the disc.

1 **Press ▲▼ to select “Select First play” and press ENTER in Step 4 on page 60.**

2 **Press ▲▼ to select “Top Menu” or “Title 1” and press ENTER.**



Top Menu: The top menu appears first.
Title 1: The disc content is played without displaying the top menu.

(Continued on next page.)

Finalize

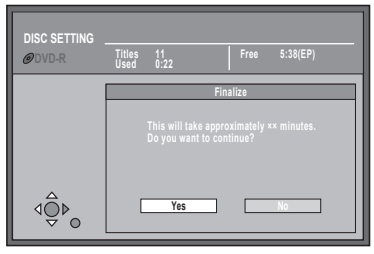
DVD-R (DVD-R recorded on this unit only)

(Refer to “Finalize” on page 70.)

You can play DVD-R on compatible DVD players by finalizing them on this unit, effectively making them into DVD-Video that complies with DVD-Video standards.

1 Press ▲▼ to select “Finalize” and press ENTER in Step 4 on page 60.

2 Press ◄► to select “Yes” and press ENTER.



3 Press ◄► to select “Start” and press ENTER.

- Finalizing starts.
- A message appears when finalizing is finished.

4 Press ENTER.

Notes:

- **Do not disconnect the AC power supply cord while the message “Finalizing the disc” is on the television. This will render the disc unusable.**
- Finalizing takes up to 15 minutes.
- You can only finalize DVD-R that were recorded on this unit.
- You cannot record on DVD-R that have been finalized.
- **After finalizing**
  - The disc becomes play-only and you can no longer record or edit it.
  - DVD-R finalized on this unit may not be playable on other players due to the condition of the recording.
  - There is a pause of several seconds between titles.
  - Titles are divided into about 5-minute* chapters.

* This time varies greatly depending on the condition and mode of recording.

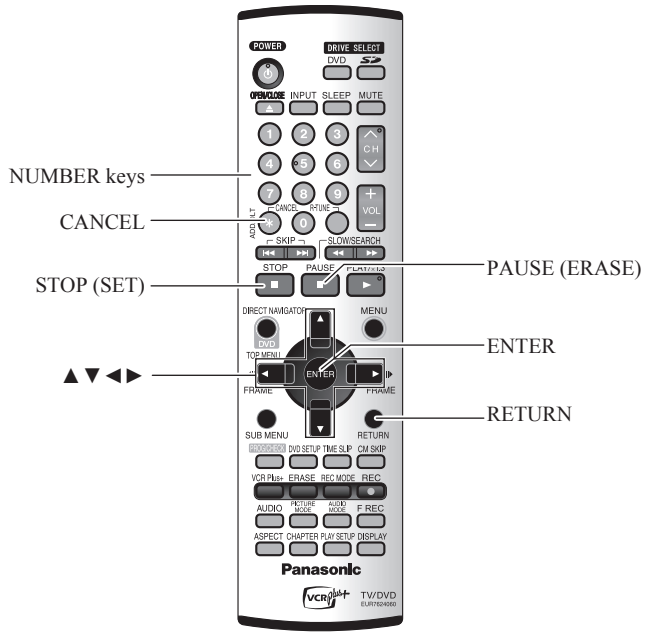
- Visit Panasonic’s homepage for more information about DVDs. http://www.panasonic.com/playDVD-R

	Before finalizing	After finalizing
Disc display on this unit	DVD-R	DVD-V
Recording/Editing/ Entering name	○	×
Play on other players	×	○

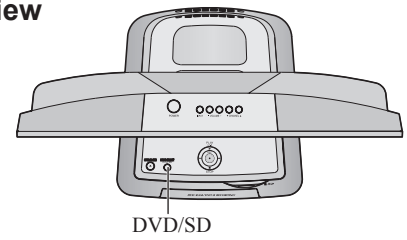
DVD-R finalized on this unit may not be playable on other players due to the condition of the recording.

For assistance, please call : 1-800-211-PANA(7262) or, contact us via the web at:http://www.panasonic.com/contactinfo

Entering Text



■ Top view



RAM **DVD-R** **SD**

You can give names to recorded titles, etc.

The maximum number of characters:

RAM	Characters
Title	64 (44*)
Play list	64
Disc	64
Folder Name (Still pictures)	36

* Title name for timer recording

DVD-R	Characters
Title	44
Disc	40

SD	Characters
Folder Name (Still pictures)	36

• If a name is long, parts of it may not be shown in some screens.

Preparation

• **Press SD or DVD to select the drive.**

• Release protection before proceeding:

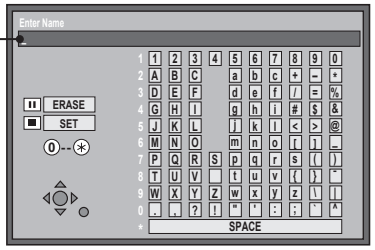
- Cartridge (p. 9) **RAM**
- Disc (p. 60) **RAM**
- Write Protect (p. 11) **SD**

1 Show Enter Name screen.

This feature allows you to enter a name/title	Page
Title	52
Title (timer recording)	40~41
Play list	59
Disc	60
Folder (Still pictures)	56

2 Press ▲▼◄► to select a character and press ENTER.

Name field:
Shows the text you have entered



• Repeat this step to enter other characters.

■ To erase a character

Press ▲▼◄► to select the character in the name field and press PAUSE.

• You can also erase characters by selecting “ERASE” and pressing ENTER.

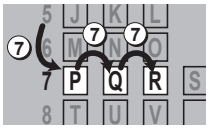
■ Using the NUMBER keys to enter characters

e.g., entering the letter “R”

a. Press 7 to move to the 7th row.

b. Press 7 twice to highlight “R”.

c. Press ENTER.



■ To enter a space

Press CANCEL and press ENTER.

3 Press STOP.

• You can also finish entering the title by selecting “SET” and pressing ENTER.

• Returns to the previously displayed screen.

■ To end partway

Press RETURN.

• Text is not saved.

Notes:

• The full title is shown in the Properties screen (pp. 52, 59), but if you enter a long title, only part of it is shown in the program list or play list screen.

• **DVD-R** If you enter a long title, only part of it is shown in the menu screen after finalization.

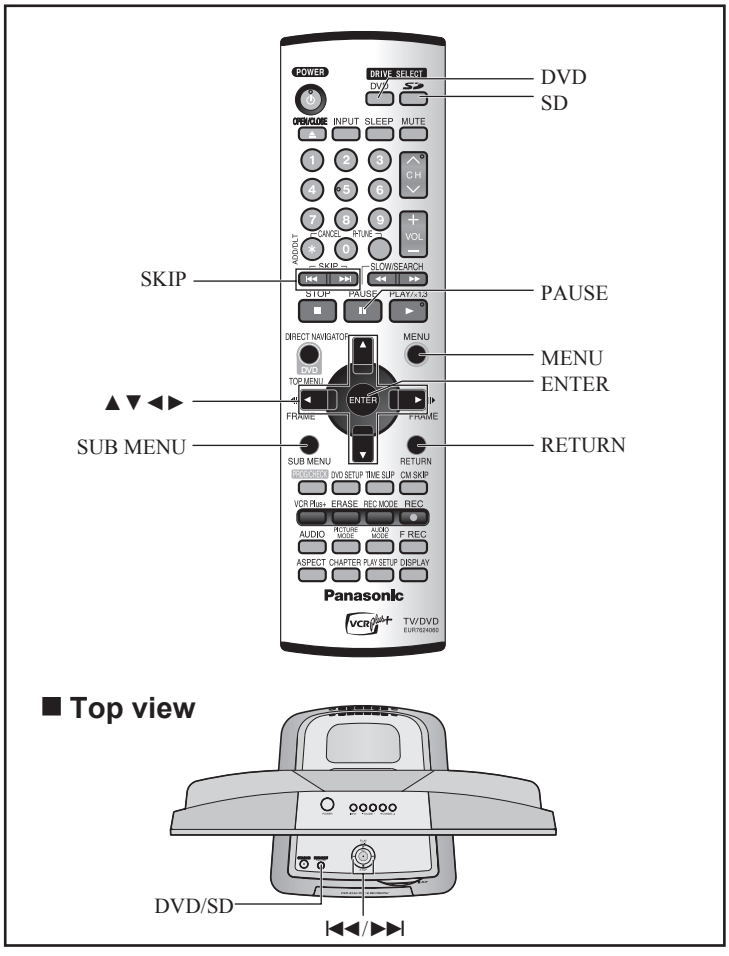
• Still picture folder titles:

• Titles are saved in the “TITLE.DVD” folder and can only be displayed on this unit.

• Input is not possible if the destination lacks sufficient space or has exceeded the maximum number of allowable files.

• The title may not appear correctly if input was done using other equipment.

Transferring (Dubbing) Still Pictures



RAM SD

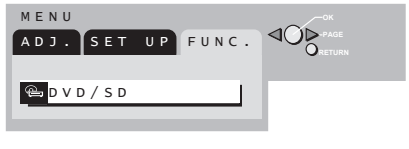
You can copy the recorded still pictures on the Card to the DVD-RAM.
You can copy the recorded still pictures on the DVD-RAM to the Card.

Preparation

- **Press SD or DVD to select the drive.**
- Release protection before proceeding:
  - Cartridge (p. 9) RAM
  - Disc (p. 60) RAM
  - Write Protect (p. 11) SD

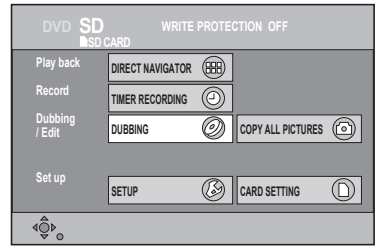
1 **Press MENU in Stop mode, then press ◄► to select "FUNC."**

2 **Press ENTER.**



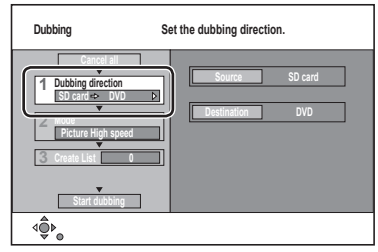
3 **Press ▲▼◄► to select "DUBBING" and press ENTER.**

e.g., Card



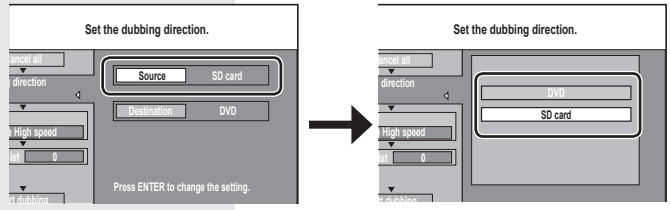
4 **Press ▲▼ to select "Dubbing direction" and press ►.**

- If you are not going to change the registered list press ▼ several times. (See step 7.)



■ To select Source

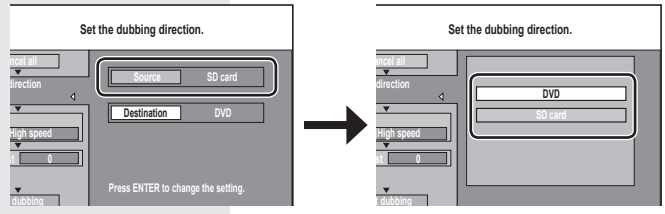
Press ▲▼ to select "Source" and press ENTER. Press ▲▼ to select the drive and press ENTER.



■ To select Destination

Press ▲▼ to select "Destination" and press ENTER. Press ▲▼ to select the drive and press ENTER.

- The same drive as the transfer (dubbing) source can be selected.



■ To confirm

Press ◄.

■ To cancel all registered transferring (dubbing) setting and lists

Press ▲▼ to select "Cancel All" and press ENTER. Press ◄► to select "Yes" and press ENTER.

- The settings and lists may be cancelled in the following situations.
  - – When a still picture or folder has been recorded or erased at the transfer (dubbing) source
  - – When steps have been taken, for instance, to turn off the unit, remove the card, open the tray, change the transfer (dubbing) direction, etc.

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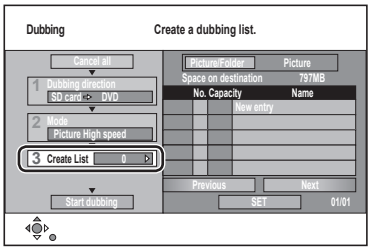
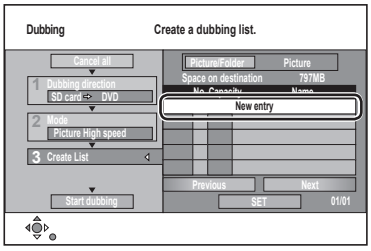
• When ⃠ appears on the screen while a button is being pressed, it means that the corresponding operation is prohibited by the unit or the disc.

5 Press ▲▼ to select “Create list” and press ►.

• Select the transferring (dubbing) items and register on the list.





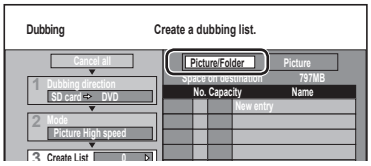
■ To register individual still pictures

Press ▲▼ to select “New entry” and press ENTER. Press ▲▼◄► to select the still picture and press ENTER.

• To select a multiple number of items together, press PAUSE to add the check mark and press ENTER. (Refer to “Multiple editing” on page 66.)
• To show other pages (p. 66)
• To select the still pictures in another folder (see right)
• To edit the transferring (dubbing) list (see right)

■ To register on a folder by folder basis

a. Press ▲▼ to select “Picture/Folder” and press ENTER.



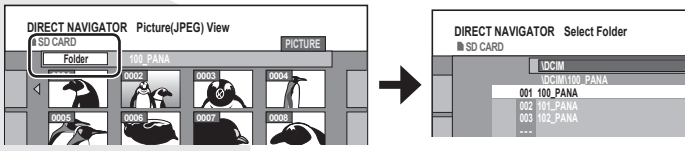
b. Press ▲▼ to select “Folder” and press ENTER.
c. Press ▲▼ to select “New item” and press ENTER.
d. Press ▲▼ to select the folder and press ENTER.

• To select a multiple number of items together, press PAUSE to add the check mark and press ENTER. (Refer to “Multiple editing” on page 66.)
• To show other pages (p. 66)
• To switch another higher folder (see right)
• To edit the transferring (dubbing) list (see right)

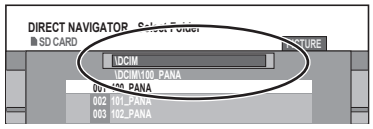
Still pictures and folders cannot be registered on the same list.

■ To select another folder

a. Press ▲▼◄► to select “Folder” and press ENTER.
b. Press ▲▼ to select the folder and press ENTER.



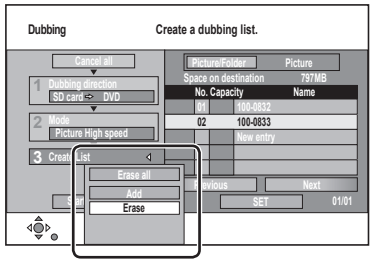
• The still pictures of different folders cannot be registered on the same list.
• If there is a multiple number of higher folders recognizable, you can switch them using ◄►. (Folders whose higher folders are different cannot be registered on the same list.)



■ To edit the transferring (dubbing) list

Select the item.
Press SUB MENU.
Press ▲▼ to select the operation and press ENTER.

• Multiple editing is possible. (p. 66)

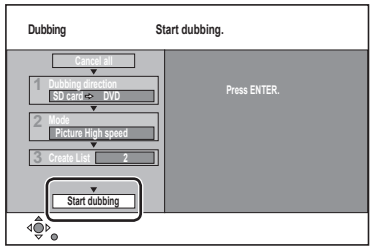


Erase all: All currently registering folders are erased.
Add: A folder is added in the desired location (before the selected folder).
Erase : The selected folder is erased.

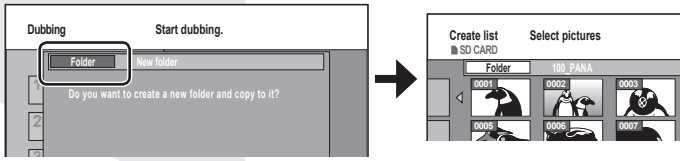
6 Press ▲▼ to select “Set” and press ENTER.

• The transferring (dubbing) list is registered.

7 Press ▲▼ to select “Start dubbing” and press ENTER.



• **For individual still pictures only**
When specifying another folder as the transferring (dubbing) destination, select “Folder”. Press ◄► to select “Yes” and press ENTER to start transferring (dubbing).



(Continued on next page.)

■ **To stop transferring (dubbing)**
Press and hold RETURN for 3 seconds.

■ **To return to the previous screen**
Press RETURN.

To show other pages
Press ▲▼◄► to select “Previous” or “Next” and press ENTER.
• You can also press SKIP ►►I or SKIP I◄◄ to show other pages.

Multiple editing
Select with ▲▼◄► and press II (PAUSE). (Repeat.)
• A check mark appears. Press II (PAUSE) again to cancel.

Copy All Pictures

SD → RAM

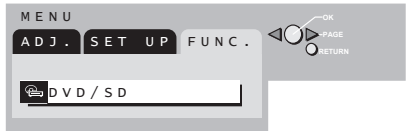
You can copy the whole contents of the Card to DVD-RAM.
(Maximum of 300 folders, 3 000 files)

Preparation
• **Press SD or DVD to select the drive.**
• Release protection before proceeding:
- Cartridge (p. 9) RAM
- Disc (p. 60) RAM
- Write Protect (p. 11) SD

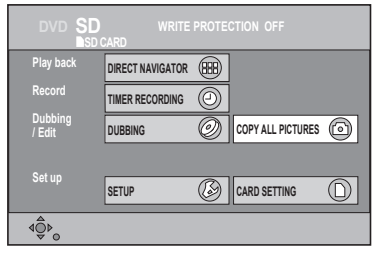
1 **Press SD to select SD drive.**

2 **Press MENU in Stop mode, then press ◄► to select “FUNC.”**

3 **Press ENTER.**

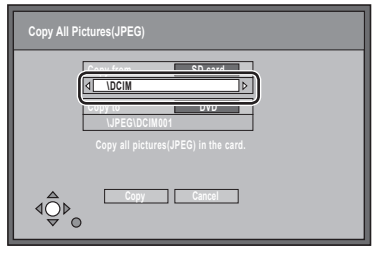


4 **Press ▲▼◄► to select “COPY ALL PICTURES” and press ENTER.**

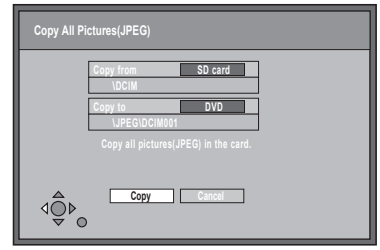


■ **Only if there are multiple selectable folders on the Card**

5 **Press ▲▼ to select “Copy from” and press ◄► to select the dubbing source folder.**
Press ▲▼ to select “Copy to” and press ◄► to select the dubbing target folder.



6 **Press ▲▼◄► to select “Copy” and press ENTER.**
• All still pictures are copied. Follow the on-screen instructions.



■ **To stop transferring (dubbing)**
Press and hold RETURN for 3 seconds.

■ **To return to the previous screen**
Press RETURN.

■ **To continue copying all pictures when copying is completed**
Press RETURN.

■ **To finish copying all pictures when dubbing is completed**
Press ENTER.

Notes:
• When transferring (dubbing) the still pictures on a folder by folder or card by card basis, files other than the still picture files inside the folder will also be transferred (dubbed). (This does not apply to the lower folders contained inside the folders.)
• If still pictures are already contained inside the transfer (dubbing) destination folder, the new still pictures are recorded following the existing still pictures.
• If the space on the destination drive runs out or the number of files/folders to be transferred (dubbed) exceeds the maximum (p. 11), transferring (dubbing) will stop partway through.
• When a name has been input by this unit for the transfer (dubbing) source folder, the folder name will be reflected in the transfer (dubbing) destination folder.
• Print number setting (DPOF) is not transferred (dubbed).
• The sequence in which the still pictures are registered on the transfer (dubbing) list may not be reflected at the transfer (dubbing) destination.

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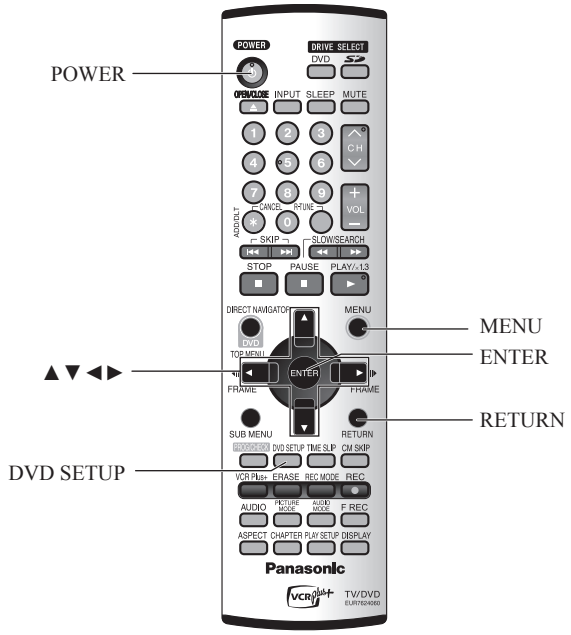
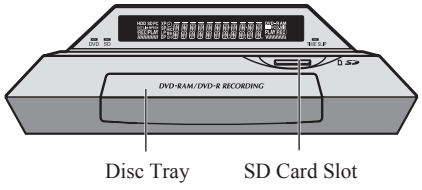
Changing the Unit's Settings



■ **Front view**

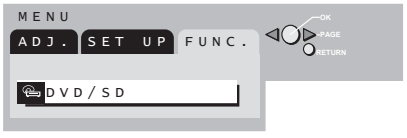


Procedure

If necessary, refer to "Summary of settings" on next page.

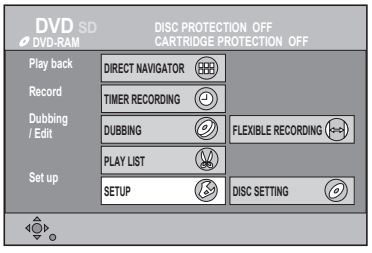
1 **Press MENU in Stop mode, then press ◄► to select "FUNC."**

2 **Press ENTER.**

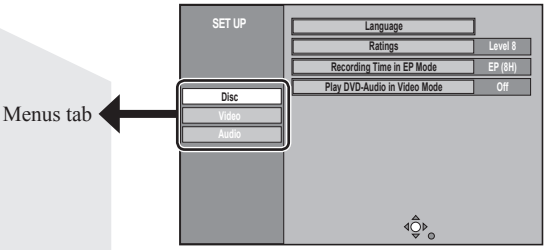


3 **Press ▲▼◄► to select "SETUP" and press ENTER.**
- You can also press DVD SETUP to enter the setup mode.

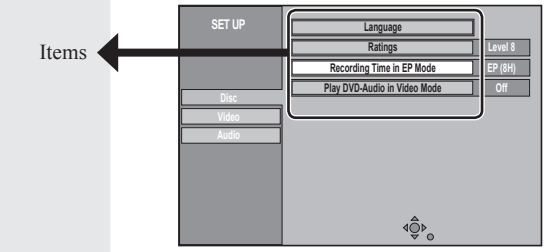
e.g., DVD-RAM
If you change "Recording Time in EP Mode".



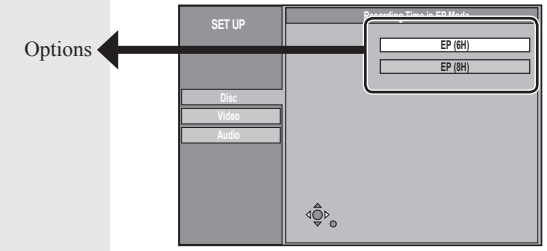
4 **Press ▲▼ to select the Menus tab and press ◄►.**



5 **Press ▲▼ to select the Items and press ENTER.**



6 **Press ▲▼ to select an Option and press ENTER.**
- Some options require different operations. Follow the displayed instructions.



■ To return to the previous screen

Press RETURN. Even if you have changed an option, the change is not activated until you press ENTER.

■ To exit the screen

Press RETURN several times.

Note:
- The settings remain intact even if you switch the unit to standby.

Summary of settings

See page 67 for details on menu operation.
The settings remain intact even if you switch the unit to standby.

Menus tab	Items	Options (Underlined items are the factory presets.)
Disc	**Languages** Choose the language for audio, subtitle and disc menus. DVD-V Press ENTER to display the menu.	● Enter a code (p. 69) when you select "Other ****" ● Some discs start in a certain language despite any changes you make here.
	Audio Language	● English ● French ● Spanish ● Original: The original language of each disc will be selected. ● Other ****
	Subtitle Language	● Automatic: If the language selected for "Audio Language" is not available, subtitles of that language will automatically appear if available on that disc. ● English ● French ● Spanish ● Other ****
	Menu Language	● English ● French ● Spanish ● Other ****
	Ratings Set a ratings level to limit DVD-Video play. Follow the on-screen instructions. Enter a 4-digit password with the NUMBER keys when the password screen is shown. ● Do not forget your password.	● 8 No Limit: All DVD-Video can be played. ● 1 to 7: Prohibits play of DVD-Video with corresponding ratings recorded on them. ● 0 Lock All: Prohibits play of all DVD-Video. **Changing ratings (When level 0-7 is selected)** ● Unlock Recorder ● Change Password ● Change Level ● Temporary Unlock
	Recording time in EP mode Select the maximum number of hours for recording in EP mode. (Refer to "Recording modes and approximate recording times" on page 39.)	● EP (6 H): You can record for 6 hours on an unused 4.7 GB disc. ● EP (8 H): You can record for 8 hours on an unused 4.7 GB disc.
	Play DVD-Audio in Video Mode Select "Video (On)" to play DVD-Video content on some DVD-Audio.	● Video (On): The setting returns to "Audio (Off)" when you change the disc or turn the unit off. ● Audio (Off)
Video	**3-D Y/C Separation** Allows high quality recording of the received picture.	● On: High quality recording is achieved by precise separation of the Y (luminance) and C (color) of the received picture signal. ● Off: Set to OFF to reduce ghost images when recording pictures with fast motion. Does not work with S-Video input pictures.
	Hybrid VBR Resolution The picture recorded to a DVD-RAM can be smoothed out. (Refer to "VBR" on page 70.)	● Automatic: Resolution is adjusted automatically to match the picture when recording and noise is reduced over the block. RAM ● Fixed: Recording is performed with fixed resolution. This allows smoother recording of fast moving pictures, etc.
	Still Mode Select the type of picture shown when you pause play. (Refer to "Frames and fields" on page 70.)	● Automatic ● Field: Select if jittering occurs when "Automatic" is selected. ● Frame: Select small text or fine patterns cannot be seen clearly when "Automatic" is selected.
	Seamless Play Plays chapters in the play list in a continuous playback method. ● Seamless Play does not work with programs recorded in LPCM or when using Quick View.	● On: Enables smoother playback. (Does not function during Quick View and when the audio of chapters varies. Also, playback position may change.) ● Off: Playback can be done with greater precision, but continuous play may be momentarily halted.
	Line-in NR Reduces video tape noise while dubbing. ● When noise reduction is on, "3-D Y/C Separation" (see above) does not work regardless of the setting.	● Automatic: Noise reduction only works on input picture from a video tape. ● On: Noise reduction works for any input video. ● Off: Noise reduction is off. Select when you want to record input as is.
	Black Level Control Select normal, lighter or darker for adjusting the black level control to the desired setting for picture enhancement.	
	Record level Adjusts the black level of the signal recorded to a DVD.	● Lighter ● Darker
	Playback level Adjusts the black level of the DVD playback signal.	● Lighter ● Normal ● Darker

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• When ⃠ appears on the screen while a button is being pressed, it means that the corresponding operation is prohibited by the unit or the disc.

Menus tab	Items	Options (Underlined items are the factory presets.)
Audio	**Search Audio & PLAY ×1.3** You may hear sound regardless of this setting with some discs.	● <u>On</u>: Audio is heard during first level search forward. ● Off: Audio is not heard during search. Quick View (p. 46) does not work.
	D.Range Compression DVD-V (Dolby Digital only) Change the dynamic range for late night viewing.	● On: ● <u>Off</u>:
	Select MTS Select whether to record the main or secondary audio type (SAP) when recording to DVD-R or DVD-RAM. (You cannot change secondary audio when recording audio to DVD-R or DVD-RAM from an external source.)	● <u>Main</u>: ● SAP:
	Digital Audio Output Change the settings when you have connected equipment through this unit's DIGITAL AUDIO OUT terminal. (p. 18) ● Press ENTER to show the menu.	
	PCM Down Conversion Select how to output audio with a sampling frequency of 96 kHz or 88.2 kHz. ● Signals are converted to 48 kHz or 44.1 kHz despite the above settings if the signals have a sampling frequency of over 96 kHz or 88.2 kHz, or the disc has copy protection.	● On: Signals are converted to 48 kHz or 44.1 kHz. (Choose when the connected equipment cannot process signals with a sampling frequency of 96 kHz or 88.2 kHz.) ● <u>Off</u>: Signals are output as 96 kHz or 88.2 kHz. (Choose when the connected equipment can process signals with a sampling frequency of 96 kHz or 88.2 kHz.)
	Dolby Digital DOLBY DIGITAL Select how to output the signal, to output "Bitstream" so the connected equipment decodes the signal, or to decode on this unit and output the signal as "PCM" (2 channel).	● <u>Bitstream</u>: When connecting to equipment displaying the Dolby Digital logo. ● PCM: When connecting to equipment not displaying the Dolby Digital logo.
	DTS DIGITAL dts SURROUND **Note:** ● Not making the proper settings may result in noise, possibly damage your hearing and speakers, and digital recording may not work properly.	● Bitstream: When connecting to equipment displaying the DTS logo. ● <u>PCM</u>: When connecting to equipment not displaying the DTS logo.
	Audio for XP Recording Choose the audio type when recording with XP mode. ● Sound recordings made using LPCM require more information than usual. Consequently the picture quality of LPCM recordings may be less than that of normal XP mode recordings.	• <u>Dolby Digital</u> (p. 70) • LPCM (p. 70)

Language Code List

Press NUMBER keys to enter the code.

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

Glossary

Bitstream
This is the digital form of multi-channel audio data (e.g., 5.1 channel) before it is decoded into its various channels.

CPRM (Content Protection for Recordable Media)
CPRM is technology used to protect broadcasts that are allowed to be recorded only once. Such broadcasts can be recorded only with CPRM compatible recorders and discs.

Decoder
A decoder restores the coded audio signals on DVDs to normal. This is called decoding.

Dolby Digital
This is a method of coding digital signals developed by Dolby Laboratories. Apart from stereo (2-channel) audio, these signals can also be multichannel audio. A large amount of audio information can be recorded on one disc using this method.

Dolby Pro Logic
A surround system where a 4-channel audio track is recorded as 2 channels and then is restored to 4 channels for play. The surround channel is monaural and can reproduce up to 7 kHz.

Down-mixing
This is the process of remixing the multi-channel audio found on some discs into two channels for stereo output. It is useful when you want to listen to the 5.1-channel audio recorded on DVDs through your television's speakers. Some discs prohibit down-mixing and this unit can then only output the front two channels.

DPOF (Digital Print Order Format)
DPOF is the standard printing format for still picture data. It is used by photo developing stores to print out the still picture data taken from a digital camera and other equipment or when printing from your home printer.

DTS (Digital Theater Systems)
This surround system is used in many movie theaters around the world. There is good separation between the channels, so realistic sound effects are possible.

Dynamic range
Dynamic range is the difference between the lowest level of sound that can be heard above the noise of the equipment and the highest level of sound before distortion occurs. Dynamic range compression means reducing the gap between the loudest and softest sounds. This means you can listen at low volumes but still hear dialog clearly.

Film and video
DVD-Videos are recorded using either film or video. This unit can determine which type has been used, then uses the most suitable method of progressive output.
- Film is 24 or 30 frames per second, with motion picture film generally being 24 frames per second.
- Video is 60 fields per second (two fields making up one frame).

Finalize
A process that makes play of a recorded CD-R, CD-RW or DVD-R etc. possible on equipment that can play such media. You can finalize DVD-R on this unit.
You cannot record onto or edit finalized discs.

Formatting
Formatting is the process of making media such as DVD-RAM recordable on recording equipment. You can format the DVD-RAM on this unit.
Formatting erases irrevocably all recordings on the disc.

Frames and fields
Frames refer to the single images that constitute the video you see on your television. Each frame consists of two fields.
- A frame still shows two fields, so there may be some blurring, but picture quality is generally better.
- A field still shows less picture information so it may be rougher, but there is no blurring.

Frame Field Field

JPEG (Joint Photographic Experts Group)
This is a system used for compressing/decoding color still pictures. If you select JPEG as the storage system on digital cameras etc., the data will be compressed to 1/10–1/100 of its original size. The special quality of this standard is that there is little deterioration in picture quality in comparison to the degree of compression.

LPCM (Linear pulse code modulation)
These are uncompressed digital signals. This unit outputs linear PCM sound in 2 channels from the DIGITAL AUDIO OUT terminal. LPCM sound is available when recording in XP mode.

MP3 (MPEG Audio Layer 3)
An audio compression method that compresses audio to approximately one tenth of its size without any considerable loss of audio quality. You can play MP3 you have recorded onto CD-R and CD-RW.

Playback control (PBC)
If a Video CD has playback control, you can select scenes and information with menus.

Progressive/Interlace
NTSC, the video signal standard, has 480 interlaced (I) scan lines, whereas progressive scanning uses twice the number of scan lines. This is called 480P.
Using progressive output, you can enjoy the high-resolution video recorded on media such as DVD-Video.
Your television must be compatible to enjoy progressive video.

Protection
You can prevent accidental erasure by setting writing protection or erasure protection.

Sampling frequency
Sampling is the process of converting the heights of sound wave (analog signal) samples taken at set periods into digits (digital encoding). Sampling frequency is the number of samples taken per second, so larger numbers mean more faithful reproduction of the original sound.

Subtitles
When dialogue which appears at the bottom of the screen.

TIFF (Tag Image File Format)
A still picture data standard A common format for storing high quality images on digital camera's and other devices.

VBR (Variable bitrate)
This is a method of video recording that adjusts the bit rate according to video signal.

For assistance, please call : 1-800-211-PANA(7262) or, contact us via the web at:http://www.panasonic.com/contactinfo

Helpful Hints

Warning and Instruction Displays

These displays will alert you to a missed operation or provide further instructions.

OSD	CAUTION	Page
ERROR HAS OCCURRED PLEASE PRESS ENTER.	• A serious, but temporary error has occurred and one of the unit's safety devices has activated. Press ENTER. The unit switches to the standby mode. Press POWER to turn the unit on again.	–
NO DISC	• You haven't inserted a disc. Correctly insert a disc that this unit can use. • The disc is upside down. If it is a single-sided disc, insert it so the label is facing up.	9, 34 34
THIS IS NON-RECORDABLE DISC	• The unit cannot record on the disc you inserted. Insert a DVD-RAM or unfinalized DVD-R.	9
THIS DISC (CARD) IS NOT FORMATTED PROPERLY PLEASE FORMAT THE DISC IN DISC SETTING TO RECORD	• You inserted an unformatted DVD-RAM or Card. Format the disc or card with this unit.	61
CANNOT FINISH RECORDING COMPLETELY	• The program was copy-guarded. • No space left on the disc. → Create space by erasing any unwanted programs. **RAM** → Use a new disc. **RAM** **DVD-R** • Recording was not completed for some other reason.	– 52 –
CANNOT RECORD DISC IS FULL **CANNOT RECORD MAXIMUM NUMBER OF TITLES EXCEEDED**	• No space left on the disc. → Create space by erasing any unwanted programs. **RAM** → Use a new disc. **RAM** **DVD-R**	52
⃠	• The operation is prohibited by the unit or disc.	44
CANNOT READ PLEASE CHECK THE DISC	• The disc is dirty.	–
CANNOT PLAY	• You inserted an incompatible disc (Discs recorded in PAL video etc.).	8
PLEASE CHANGE THE DISC	• There may be a problem with the disc. Press OPEN/CLOSE to remove it and check it for scratches or dirt. (The unit turns off automatically after you open the tray.)	–
NO SD CARD NO VALID SD CARD	• The card is not inserted. If this message is displayed with a compatible card already inserted, turn off the power, remove and then re-insert the card. • The card format does not match. • The card inserted is not compatible.	34 11 11
NO FOLDER	• There is no compatible folder in this unit.	11
CANNOT WRITE	• The card is currently protected → Release the write protection. • There is no space remaining. → Erase any unwanted files (still pictures).	11 55, 56
NO READ	• The disc is dirty or badly scratched. → Clean the disc if it is dirty. → The disc cannot be played if it is scratched and this display doesn't disappear. • The unit cannot read the disc. • You have used a DVD-RAM/PD lens cleaner and it has finished.	10 – 76
UNSUPPORT	• You have inserted a disc the unit cannot play or record on.	8~9
U14	• The unit is hot. → The unit switches to standby automatically for safety reasons and you cannot operate it. Wait for about 30 minutes for the service number to disappear. → Select a position with good ventilation when installing the unit. → Do not block the cooling fan on the rear of the unit.	–
U99	• The unit fails to operate properly. Press POWER to switch the unit to standby. Now press POWER again to turn the unit on.	–
SLF CHECK	• There was a power failure or the AC plug was disconnected while the power was on. The unit is carrying out its recovery process. Wait until the message disappears.	–

Before Requesting Service

Check the following points once again if you are having trouble with your unit.

	PROBLEM	CORRECTION	Page
Power	**No power...**	• Insert the AC power supply cord securely into a known active AC outlet.	15
		• Set POWER to ON.	12, 13
Operation	**Cannot operate the DVD...**	• Press DVD when operating DVD.	34
		• Some operations may be prohibited by the disc.	36~37
	Cannot operate the SD (Card)...	• Press SD when operating card.	34
	The unit is on but cannot be operated...	• Recording drive or playback drive have not been selected properly.	34
		• Some operations may be prohibited by the disc.	36~37
		• The unit is hot (“U14” appears on the display). Wait until “U14” disappears.	71
		• One of the unit’s safety devices may have been activated. Reset the unit as follows: (1) Press POWER on the main unit to switch to standby. If the unit doesn’t switch to standby, press and hold POWER on the main unit for about 10 seconds. The unit is forcibly switched to standby. Alternatively, disconnect the AC power supply cord, wait 1 minute, then reconnect it. (2) Press POWER to turn the unit on.	–
	Cannot eject a disc...	• The Disc Tray can be locked/unlocked. [Lock] 1 Turn the unit Power ON. 2 Simultaneously press STOP on the unit and POWER on the Remote Control. [Unlock] Repeat above steps to unlock.	–
		• If the steps above do not work, there may be a unit malfunction. With unit in OFF condition, hold down both STOP and CH ▲ buttons on the unit for about 5 seconds. Remove disc. Contact your retailer.	
Remote Control	**The Remote Control doesn’t work...**	• The batteries are depleted. Replace them with new ones.	8
		• Point the Remote Control at the Remote Control sensor on the main unit.	
		• Remove obstacles between the Remote Control and main unit.	–
Picture	**The images from this unit do not appear on the television...**	• Make sure your antenna system (TV or CABLE) is correctly set.	15
	Picture flickers... **Picture is not sharp...**	• Make sure the antenna location, direction or connection.	15
	Spots appear on screen, the screen flickers ...	• The unit may be receiving influence, such as electromagnetic wave interference or induced electromagnetic wave from geomagnetism or external forces (automobile, electric train, power lines, neon light, motor, magnetized metal framework of a building, metal shutters, etc.).	–
	The top and bottom parts of the screen are blank...	• Using picture media wider than 16:9, such as cinema vision size media, etc. may produce blank portions at the top and bottom of the screen.	–
	Using Zoom or Just causes top and bottom of screen to disappear...	• The screen position may be out of adjustment. → Adjust the screen position.	26
	There is a lot of after-image when playing video...	• Select “MPEG NR” in the OTHER ADJUST menu to “OFF”.	33

For assistance, please call : 1-800-211-PANA(7262) or, contact us via the web at:http://www.panasonic.com/contactinfo

	PROBLEM	CORRECTION	Page
Sound	**No sound...** **Low volume...** **Distorted sound...**	• Make sure your antenna system (TV or CABLE) is correctly set. • Check the connections. Check the input mode on the amplifier if you have connected one. • Turn SURROUND off if it causes distortion.	15 16~20 31
	Cannot hear the desired audio type...	• Press AUDIO to select the desired audio type. • If “D.MIX” does not appear in the display when playing multi-channel DVD-Audio, audio output will be the front two speakers only. • You cannot change the DVD-Audio audio type if the software producer has restricted play in stereo. • Turn off SURROUND in the following cases. - When using discs that do not have surround sound effects such as Karaoke discs. - When playing MTS broadcast programs.	48 13 – 31
	Cannot switch audio...	• You have used digital connection. Set “Dolby Digital" to “PCM" or connect to other equipment using audio cables (analog connection). • It is not possible to switch the audio when the recording mode is XP and “LPCM” has been selected in the SETUP menu, “Audio for XP Recording”. → Select “MAIN” or “SAP” from “Select MTS” in the Audio menu before recording. • There are discs which audio cannot be changed because of how the disc was created.	18, 69 69 –
Recording, Timer Recording	**Cannot record...**	• You haven’t inserted a disc or the disc you inserted cannot be recorded on. Insert a disc the unit can record onto. • The disc is unformatted. Format the disc. RAM • The write-protect tab on the cartridge is set to “PROTECT” or the disc is protected with “DISC SETTING”. • Some programs have limitations on the number of times they can be recorded (CPRM). • The disc is full or nearly full. Erase unneeded titles or use another disc. • You cannot record on finalized DVD-R discs. • If you repeatedly insert discs or turn this unit on and off 50 times or more, the recording or editing of DVD-R may be disabled. • The material you are trying to record is copy-guarded. • Timer recording will not be activated when in editing or transfer (dubbing). Timer recording will begin after the editing/transfer (dubbing) is finished. • You cannot record the COMPONENT and HDMI signals.	9 61 9, 61 38 55 – – – – 16, 17
	A part or whole of a recorded title has been lost...	• If the power shuts down or the plug is disconnected from the household AC outlet while recording or editing, the program may be lost or the disc may become unusable. → We cannot offer any guarantee regarding lost titles or discs. You will have to format the disc ([RAM]) or use a new disc.	–
	Timer recording does not work properly... **VCR Plus+ system does not work properly...**	• When connected to cable TV box or satellite receiver, the VCR Plus+ system does not work. • The timer program is incorrect or different timer program times overlap. Correct the program. • The clock is not correct. Set the clock. • Correct the guide channels with “VCR Plus+ CH Setting” in the PROGRAM CHANNEL menu. • The same guide channel is set to 2 or more channel positions. Set the guide channel correctly or delete unnecessary channels. • Timer recording will not be activated during formatting, transfer (dubbing) and other such operations which should not be interrupted when they are being carried out.	– 41 23 24 24 –
	Timer recording does not stop even when STOP is pressed...	• Press and hold STOP for a few seconds to turn “⏲” off. Recording stops.	40, 41
	The timer program remains even after recording finishes...	• The timer program remains if set to daily or weekly.	41
	Strip-shaped black noise is recorded...	• The device in playback is interfered with by the TV because the device is too close to the TV. Move the device away from the TV.	–
	Cannot record video or sound from the external device...	• The external device is not correctly connected. • The proper external input channel (L1 or L2) is not selected.	16~20 43

	PROBLEM	CORRECTION	Page
Playback	**Play fails to start even when PLAY is pressed...** **Play starts but then stops immediately...**	• Insert the disc correctly with the label facing up.	34
		• You tried to play a blank DVD-RAM/DVD-R, or discs unplayable on this unit.	8
		• When recording to DVD-RAM using EP (8H) mode, play may not be possible on DVD players that are compatible with DVD-RAM. In this case use EP (6H) mode.	68
	DVD-Video is not played...	• Some DVD-Video cannot be played when you change the ratings level.	68
	Picture distorted during search...	• Some distortion is normal.	–
	Alternative sound track and subtitles cannot be selected...	• The languages are not recorded on the disc.	–
		• You may have to use the disc's own menus to select languages.	–
	No subtitles...	• When progressive output is on, closed captions cannot be displayed.	–
		• Subtitles are not recorded on the disc.	–
		• Turn the Subtitles ON.	49
	Angle cannot be changed...	• This function depends on software availability. Even if disc has multiple angles, they may be recorded for specific scenes only.	–
	You have forgotten your ratings password...	• Reset all DVD initial settings to ex-factory condition.	67
	Quick View does not work...	• This does not work if the setting is "Off" in "Search Audio & PLAY ×1.3".	69
		• This does not work when audio is other than Dolby Digital.	–
		• This does not work when recording is in XP or FR mode.	–
	Play stops for a moment during Quick View...	• Play may stop where two play lists join, but this is malfunction.	–
	The resume play function does not work...	• This function only works when "PLAY" is flashing in the unit's display.	44
		• Memorized positions are canceled when the unit is turned off or when the tray is opened. The memorized position on the play list is also canceled when the play list and title are edited.	–
	Discs recorded on this unit cannot be played on other equipment...	• Discs recorded on this unit must be finalized in order to play them on other equipment.	
Edit	**Cannot format...**	• You tried formatting a disc that is not compatible with this unit.	8~9
		• If disc is dirty, purchase a special disc cleaner (LF-K200DCA1, where available) and format after disc is cleaned.	10, 76
	Cannot create chapters... **Cannot mark the start point or the end point during "Shorten" operation...**	• The unit writes the chapter division information to the disc when you turn it off or remove the disc. The information is not written if there is an interruption in the power before this.	–
		• These operations are not possible with still pictures.	–
		• You cannot set points if they are too close to each other. You cannot set an end point before a start point.	–
	Cannot erase chapters...	• When the chapter is too short to erase, use "Combine Chapters" to make the chapter longer.	53
	The available recording time doesn't increase even after erasing recordings on the disc...	• Available recording space on the DVD-R does not increase even after erasing previously recorded titles.	–
	Cannot create a play list...	• You cannot select all the chapters at once in a title if the title also includes still pictures. Select them individually.	–
Still pictures	**The contents of the card cannot be read...**	• The memory card format is not compatible with the unit. → Format using FAT 12 or FAT 16 with other equipment or format the memory card with this unit.	61
		• The unit tried to display still picture files that were in a folder level that is not compatible.	11
		• The still picture file is not JPEG or TIFF. → This unit displays still pictures (JPEG and TIFF) that are in accordance with DCF standard.	11
		• Turn off and then turn on the unit again.	–
	Transferring (dubbing), erasing and setting protection takes a long time...	• When there are a lot of folders and files, it may sometimes take a few hours.	–
		• When repeating copying or erasing, it may sometimes take a long time. Format the disc or memory card.	61
	The tray won't open/close...	• The tray cannot be opened or closed while the still pictures are played back and editing screen is being displayed. Press RETURN a few times to clear the screen.	–
	Cannot display Direct Navigator screen...	• This screen cannot be displayed during recording or transfer (dubbing) or while the unit is standing by for linked timer recording with external equipment.	–
	Cannot edit or format a card...	• Release the card's protection setting. (With some cards, the "Write protection Off" message sometimes appears on the screen even when protection has been set.)	11

For assistance, please call : 1-800-211-PANA(7262) or, contact us via the web at:http://www.panasonic.com/contactinfo

	PROBLEM	CORRECTION	Page
Displays	**The display is dim...**	• Change “FRONT DISPLAY” in the OTHER ADJUST menu.	33
	“12:00” is flashing on the unit’s display...	• Set the clock.	23
	The recording time display, the transfer (dubbing) process display and the displayed recording time of MP3 are different from the actual time...	• The time on the unit’s display and the remaining recording time on the screen may be indicated less or more than the actual value.	–
		• In DVD-R, the remaining capacity does not increase even if programs are erased.	–
		• If you repeat recording or editing 200 times or more, the remaining capacity of the DVD-R is reduced and then recording or editing may be disabled.	–
		• The time during fast forward and rewind, or the process during transfer (dubbing) may not be displayed accurately.	–
Miscellaneous	**TV sometimes makes a cracking sound...**	• If there is no problem with picture or audio, this sound is a result of normal cabinet shrinkage due to changes in room temperature. This will not effect performance, etc.	–
	The main unit is hot.	• The main unit radiates heat and some of the parts may become hot. This is not a problem for performance or quality. Set up at a location with good ventilation. Do not cover the ventilation holes of the TV with a tablecloth etc., and do not place on top of other equipment.	–
HDMI	**Poor Video... (Snow noise, no picture, picture runs, etc.)**	• HDMI cable is not connected securely.	17
		• Turn the power supply of the TV set and connected equipment OFF then turn on.	17
		• Check compatibility of input signal from the connected equipment.	17
		• The connected equipment must be EIA/CEA-861/861B compliant.	17
	Poor Audio...	• Change the audio setting of the connected equipment to L.PCM.	–
		• Check the setting of HDMI INPUT.	17
		• If the problem is due to the digital audio connection, change to the analog audio connection.	18

If you cannot resolve the problem, please call the Customer Satisfaction Center for product assistance at 1-800-211-PANA(7262).
To locate an authorized servicenter call toll free 1-800-211-PANA(7262)
or, contact us via the web at:http://www.panasonic.com/contactinfo

Q & A

Question	Answer
I want to enjoy 5.1 Ch surround sound of Dolby digital, DST, etc. What equipment do I need?	• A This unit alone is not enough. You will need 6 speakers and, if a digital connection, an amp equipped with Dolby digital or DST recorder. (DVD playback only)
Can I play DVD-Video, DVD-Audio and Video CDs purchased abroad?	• You can play them if the video standard is NTSC. • A Only if the regional code includes “ALL” or “1”. Check the package.
Can a DVD-Video that does not have a region number be played?	• The DVD-Video region number indicates the disc conforms to a standard. You cannot play discs that do not have a region number.
Can I use DVD-R and DVD-RW in this unit?	• A Only a DVD-R that has been finalized can be used. DVD-RW cannot be used. • This unit also record and plays 1×-4× recording speed DVD-R discs.
Can I use CD-R and CD-RW in this unit?	• A CD-R and CD-RW recorded with finalized MP3 music will play. However, this unit does not allow CD-R and CD-RW recording.
Can I record from a video or outside DVD source?	• A Most video tape and DVD titles on the market are copy protected. In this case, recording is not possible.
Can I play DVD-Rs recorded on this unit on other machines?	• A Once a DVD-R recorded on this unit is finalized, it can be played on other DVD-R compatible machines. (It is not guaranteed to work with all machines.) It may not play depending on recording conditions.
Can I record digital audio signals on this unit?	• This is not possible.
How many times can I rewrite a DVD-RAM?	• A This varies based on conditions of usage, but they can be rewritten up to about 100 000 times.
Can I record from a commercially purchased video cassette or DVD?	• Most commercially sold video cassettes and DVD are copy protected; therefore, recording is usually not possible.
Can a digital audio signal during DVD playback be recorded to other equipment?	• You can record if using the PCM signal. When recording DVD, change the “Digital Audio Output” settings to the following from the SETUP menu. - PCM Down Conversion: On - Dolby Digital: PCM - DTS: PCM However, only - As long as digital recording from the disc is permitted. - As long as the recording equipment is compatible with a sampling frequency of 48 kHz. You cannot record MP3 signals.

Maintenance

The precision parts in this unit are readily affected by the environment, especially temperature, humidity, and dust. Cigarette smoke also can cause malfunction or breakdown.

To clean this unit, wipe with a soft, dry cloth.
- Never use alcohol, paint thinner or benzine to clean this unit.
- Before using chemically treated cloth, read the instructions for the cloth carefully.
- Use eyeglass cleaner to remove stubborn dirt from the LCD.

Observe the following points to ensure continued listening and viewing pleasure.
Dust and dirt may adhere to the unit’s lenses over time, possibly making it impossible to record or play discs.
Use the recommended **DVD-RAM/PD Lens cleaner (LF-K123LCA1)** about once every year, depending on frequency of use and the operating environment.
Read the lens cleaner’s instructions carefully before use.

CAUTION :
If water or other liquid enters the monitor through the display panel surface, a malfunction may occur.

For assistance, please call : 1-800-211-PANA(7262) or, contact us via the web at:http://www.panasonic.com/contactinfo

Specifications

Unit		
Power Supply		120 V AC, 50/60 Hz
Power Consumption		Power On: 116 W Power Off: 0.8 W (Unit) 0.9 W (Remote Control)
Broadcast Channels		VHF 2 ~ 13, UHF 14 ~ 69
CABLE Channels		Midband A through I (14 ~ 22) Superband J through W (23 ~ 36) Hyperband AA ~ EEE (37 ~ 64) Lowband A-5 ~ A-1 (95 ~ 99) Special CABLE channel 5A (01) Ultraband 65 ~ 94, 100 ~ 125
LCD		22-inch, 16:9 aspect ratio LCD panel
Screen size (W × H × diagonal)		488 mm × 274 mm × 560 mm
Speaker		8 W (4 W + 4 W)
Connection Terminals	**INPUT**	VIDEO (RCA PIN Type × 1) × 2: 1.0 Vp-p (75 Ω)
		S-VIDEO (MINI DIN 4pin × 1) × 2: Y: 1 Vp-p (75 Ω) C: 0.286 Vp-p (75 Ω)
		AUDIO L-R (RCA PIN Type × 2) × 2: 0.5 Vrms
	COMPONENT VIDEO INPUT	Y × 1: 1.0 Vp-p (including synchronization)
		PB/PR × 1: ±0.35 Vp-p
		AUDIO L-R (RCA PIN Type × 2) × 1: 0.5 Vrms
	HDMI INPUT	HDMI type A Connector AUDIO L-R (RCA PIN Type × 2) × 1: 0.5 Vrms
	OUTPUT	AUDIO L-R (RCA PIN Type × 2) × 1: 0.5 Vrms
	Headphones/Earphones	Stereo (M3 plug)
	Optical digital output	Optical connector: only for DVD/CD × 1
Operating Temperature		5 °C ~ 35 °C (41 °F ~ 95 °F)
Operating Humidity		10 % ~ 75 %
Weight		13.3 kg
Dimensions (W × H × D)		592 mm × 518 mm × 294 mm

DVD	
Recording system	DVD video recording standards (DVD-RAM), DVD video standards (DVD-R)
Recordable discs	12 cm (5″) 4.7 GB DVD-RAM discs 12 cm (5″) 9.4 GB DVD-RAM discs 8 cm (3″) 2.8 GB DVD-RAM discs 12 cm (5″) 4.7 GB DVD-R discs (for General Ver. 2.0) 8 cm (3″) 1.4 GB DVD-R discs (for General Ver. 2.0)
Recording time	Max. 8 hours (using 4.7 GB disc) XP: 60 minutes SP: 120 minutes LP: 240 minutes EP: 480 minutes
Discs played	12 cm (5″) 4.7 GB DVD-RAM discs 12 cm (5″) 9.4 GB DVD-RAM discs 8 cm (3″) 2.8 GB DVD-RAM discs 12 cm (5″) 4.7 GB DVD-R discs (for General Ver. 2.0) 8 cm (3″) 1.4 GB DVD-R discs (for General Ver. 2.0) DVD-VIDEO discs CD-Audio discs (CD-DA) Video CD discs DVD-AUDIO discs CD-R/CD-RW discs (CD-DA, Video CD, MP3 formatted discs)
SD	
SD Card Slot	SD Memory Card Slot
Compatible media	SD Memory Card, MultiMediaCard
Format	FAT12 or FAT16
Image format	JPEG conforming to DCF (Design rule for Camera File system) (sub sampling; 4:2:2 or 4:2:0) TIFF (Uncompressed RGB chunky) DPOF Compatible
Number of pixels	320 × 240 to 6 144 × 4 096

• Designs and specifications are subject to change without notice.

Limited Warranty

PANASONIC CONSUMER ELECTRONICS COMPANY, DIVISION OF MATSUSHITA ELECTRIC CORPORATION OF AMERICA
One Panasonic Way Secaucus, New Jersey 07094

PANASONIC SALES COMPANY, DIVISION OF MATSUSHITA ELECTRIC OF PUERTO RICO, INC.,
AVE. 65 de Infantería, Km. 9.5 San Gabriel Industrial Park, Carolina, Puerto Rico 00985

Panasonic/Quasar Video Products
Limited Warranty

Limited Warranty Coverage
If your product does not work properly because of a defect in materials or workmanship, Panasonic Consumer Electronics Company or Panasonic Sales Company (collectively referred to as "the warrantor") will, for the length of the period indicated on the chart below, which starts with the date of original purchase ("warranty period"), at its option either (a) repair your product with new or refurbished parts, or (b) replace it with a new or a refurbished product. The decision to repair or replace will be made by the warrantor.

Product	Parts	Labor	Service	Contact Number
Camcorder	One (1) Year (except CCD Image Sensor) CCD Image Sensor - 6 (Six) Months	Ninety (90) Days Ninety (90) Days	Carry-In or Mail-In	1-800-211-PANA(7262)
DVD/VCR Deck, A/V Mixer	One (1) Year	Ninety (90) Days	Carry-In or Mail-In	1-800-211-PANA(7262)
TV/VCR, TV/DVD, TV/DVD/VCR Combination	One (1) Year (except CRT) CRT - Two (2) Years	Ninety (90) Days Ninety (90) Days	Carry-In: 21″ CRT and Smaller In-Home or Carry-In: 22″ CRT and Larger	1-800-211-PANA(7262)
LCD TV/DVD-Recorder Combination	One (1) Year	One (1) Year	In-Home or Mail-In	1-800-211-PANA(7262)
TV/HDR Combination	One (1) Year (except CRT) CRT - Two (2) Years	Ninety (90) Days Ninety (90) Days	In-Home or Carry-In	1-888-843-9788
Rechargeable Batteries (in exchange for defective item)	Ten (10) Days	Not Applicable	Carry-In or Mail-In	1-800-211-PANA(7262)
Tape, DVD-RAM disc (in exchange for defective item)	Five (5) Days	Not Applicable	Carry-In or Mail-In	1-800-211-PANA(7262)
Memory Cards (in exchange for defective item)	Ninety (90) Days	Not Applicable	Carry-In or Mail-In	1-800-211-PANA(7262)

During the "Labor" warranty period there will be no charge for labor. During the "Parts" warranty period, there will be no charge for parts. You must carry-in or mail-in your product or arrange for in-home service, as applicable, during the warranty period.
If non-rechargeable batteries are included, they are not warranted. This warranty only applies to products purchased and serviced in the United States or Puerto Rico. This warranty is extended only to the original purchaser of a new product which was not sold "as is". A purchase receipt or other proof of the original purchase date is required for warranty service.

Carry-In, Mail-in or In-Home Service
For Carry-In, Mail-In or In-Home Service (as applicable) in the United States call toll free contact number listed above or visit Panasonic Web Site: http://www.panasonic.com
For assistance in Puerto Rico call Panasonic Sales Company (787)-750-4300 or fax (787)-768-2910.
In-Home service, if applicable, requires clear, complete and easy access to the product by the authorized servicer and does not include removal or re-installation of an installed product. It is possible that certain in-home repairs will not be completed in-home, but will require that the product, or parts of the product, be removed for shop diagnosis and/or repair and then returned.

Limited Warranty Limits And Exclusions
This warranty ONLY COVERS failures due to defects in materials or workmanship, and DOES NOT COVER normal wear and tear or cosmetic damage, nor does it cover markings or retained images on the picture tube or LCD panel resulting from viewing fixed images (including, among other things, letterbox pictures on standard 4:3 screen TV's, or non-expanded standard 4:3 pictures on wide screen TV's, or onscreen data in a stationary and fixed location).
The warranty ALSO DOES NOT COVER damages which occurred in shipment, or failures which are caused by products not supplied by the warrantor, or failures which result from accidents, misuse, abuse, neglect, mishandling, misapplication, alteration, faulty installation, set-up adjustments, misadjustment of consumer controls, improper maintenance, power line surge, lightning damage, modification, or commercial use (such as in a hotel, office, restaurant, or other business), rental use of the product, service by anyone other than a Factory Servicenter or other Authorized Servicer, or damage that is attributable to acts of God.
THERE ARE NO EXPRESS WARRANTIES EXCEPT AS LISTED UNDER "LIMITED WARRANTY COVERAGE". THE WARRANTOR IS NOT LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THIS PRODUCT, OR ARISING OUT OF ANY BREACH OF THIS WARRANTY. (As examples, this excludes damages for lost time, cost of having someone remove or re-install an installed unit if applicable, or travel to and from the servicer, loss of media or images, data or other memory or recorded content. The items listed are not exclusive, but are for illustration only.)

ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING THE WARRANTY OF MERCHANTABILITY, ARE LIMITED TO THE PERIOD OF THE LIMITED WARRANTY.

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 exclusions 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 a problem with this product develops during or after the warranty period, you may contact your dealer or Servicenter. If the problem is not handled to your satisfaction, then write to the warrantor's Consumer Affairs Department at the addresses listed for the warrantor.

PARTS AND SERVICE (INCLUDING COST OF AN IN-HOME SERVICE CALL, WHERE APPLICABLE) WHICH ARE NOT COVERED BY THIS LIMITED WARRANTY ARE YOUR RESPONSIBILITY.

Customer Services Directory

Obtain Product Information and Operating Assistance; locate your nearest Dealer or Servicenter; purchase Parts and Accessories; or make Customer Service and Literature requests by visiting our Web Site at:

http://www.panasonic.com/support

or, contact us via the web at:

http://www.panasonic.com/contactinfo

You may also contact us directly at:
1-800-211-PANA (7262),
Monday-Friday 9 am-9 pm; Saturday-Sunday 10 am-7 pm, EST.

For hearing or speech impaired TTY users, TTY : 1-877-833-8855

Accessory Purchases

Purchase Parts, Accessories and Instruction Books online for all Panasonic Products by visiting our Web Site at:

http://www.pasc.panasonic.com

or, send your request by E-mail to:

npcparts@panasonic.com

You may also contact us directly at:
1-800-332-5368 (Phone) 1-800-237-9080 (Fax Only) (Monday – Friday 9 am to 8 pm, EST.)
Panasonic Services Company
20421 84th Avenue South,
Kent, WA 98032
(We Accept Visa, MasterCard, Discover Card, American Express, and Personal Checks)

For hearing or speech impaired TTY users, TTY : 1-866-605-1277

Service in Puerto Rico
Matsushita Electric of Puerto Rico, Inc. Panasonic Sales Company
Factory Servicenter:
Ave. 65 de Infantería, Km. 9.5, San Gabriel Industrial Park, Carolina, Puerto Rico 00985
Phone (787)750-4300 Fax (787)768-2910

As of October 2003

Guía rápida de uso en español

Conexión

Notas sobre las conexiones
- Desconecte la alimentación de todos los componentes antes de realizar cualquier conexión.
- Si los cables necesarios para conectar un componente al sistema no están incluidos con el componente o disponibles opcionalmente, quizás deba adoptar un cable para que se adecue al componente involucrado.
- Consulte cuidadosamente el manual de instrucciones de cada componente del sistema antes de conectarlo.

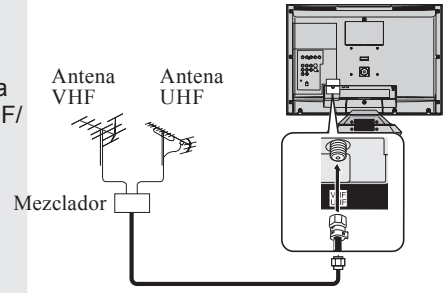
Conexión del terminal de entrada RF

⚠ PRECAUCIÓN

Apretar demasiado los cables coaxiales RF "tipo tuerca" podría dañar los conectores. Asegúrelos solamente con los dedos.

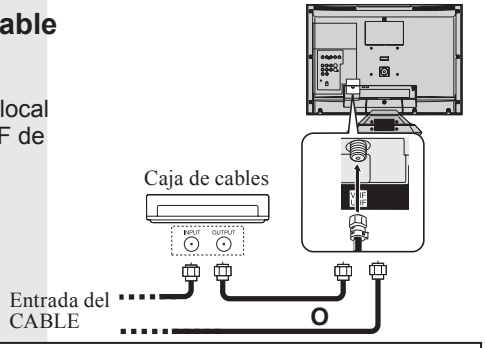
■ Conexión de la antena

Conecte el cable de la antena al terminal VHF/ UHF de la unidad.



■ Conexión del cable

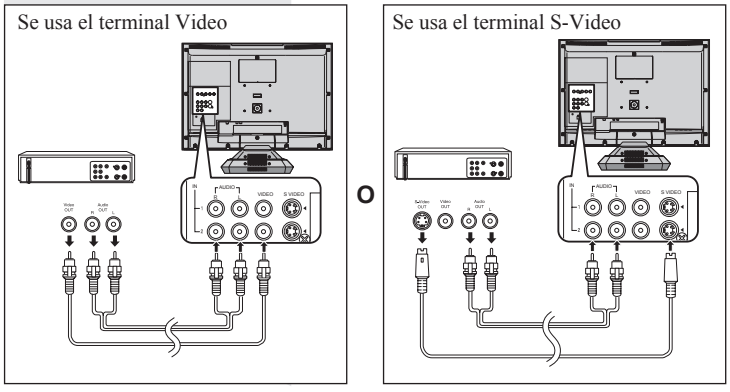
Conecte el cable suministrado por la compañía de cable local al terminal VHF/UHF de la unidad.



Nota para el instalador del sistema de CABLE:
Este recordatorio tiene la finalidad de llamar la atención a los instaladores del sistema de CABLE (televisión por cable) sobre el artículo 820-40 de NEC que brinda pautas para una conexión a tierra apropiada y, en particular, especifica que la tierra del cable se deberá conectar al sistema de tierra del edificio, tan cerca del punto de ingreso del cable como sea práctico.

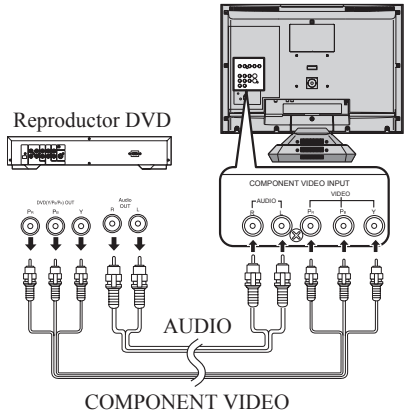
Conexión del terminal de entrada AV

■ Conecta videograbadores y otros equipos periféricos



Conexión de los terminales de entrada COMPONENT VIDEO

La señal de componente permite una reproducción del color más precisa porque cada una de las señales Y, PB y PR se reciben por separado.
La indicación del terminal de salida de la señal de componente diferirá según el dispositivo de salida (Y, PB, PR).
Lea las instrucciones de funcionamiento suministradas con el dispositivo de salida.



■ Señales de componente (Y, PB, PR) que pueden recibirse

Tipo de modo		Datos de señal			Exhibición del menú de información
		Nº de puntos (H × V)	Frecuencia horizontal (kHz)	Frecuencia vertical (Hz)	
Señales de formato DTV	480i	664 × 485	15.73	29.97	480 i
	480p	720 × 483	31.47	59.94	480 p
	*720p	1 280 × 720	45.00	60.00	720 p
	1 080i	1 920 × 1 080	33.75	30.00	1 080 i

- Las señales de entrada que no sean las que aparecen marcadas con un asterisco * en la lista, le proporcionarán una imagen estable y hermosa.

Conexión HDMI

HDMI*1 (High Definition Multimedia Interface) es la primera interfaz A/V de toda la electrónica digital de consumo que soporta el estándar no comprimido. El terminal HDMI soporta tanto los datos de vídeo como los de audio.
Puede conectar un dispositivo electrónico de consumo conforme con la norma EIA / CEA-861 / 861B*2, como por ejemplo un Set Top Box (caja de conexión a Internet) o reproductor de DVD con terminal de salida HDMI o DVI al terminal de entrada HDMI*1.

Ingrese una fuente de imagen de alta definición con protección de contenidos digitales de gran ancho de banda (HCDP) a este terminal HDMI, para poder exhibir en este televisor imágenes de alta definición en formato digital.

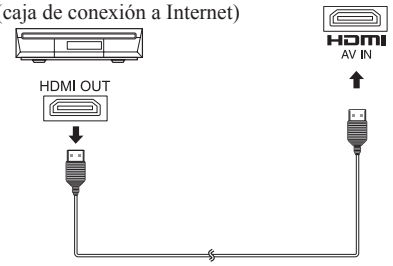
*1 HDMI, el logotipo HDMI y High-Definition Multimedia Interface son marcas comerciales o marcas comerciales registradas de HDMI Licensing LLC.

*2 La conformidad de los estándares EIA / CEA-861 / 861B cubre perfiles para la transmisión de video digital no comprimido, incluyendo la protección de contenidos digitales de gran ancho de banda.

For assistance, please call : 1-800-211-PANA(7262) or, contact us via the web at:http://www.panasonic.com/contactinfo

■ Cuando la entrada de señales de audio es digital

Set Top Box (caja de conexión a Internet)

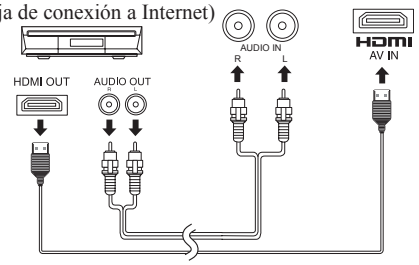


El conector de la unidad es un conector HDMI de Tipo A.

O

■ Cuando la entrada de señales de audio es analógica

Set Top Box (caja de conexión a Internet)



El conector de la unidad es un conector HDMI de Tipo A.

■ Señal de VÍDEO compatible

	Núm. de puntos (H × V)	Frecuencia vertical de barrido (Hz)
1080i	1 920 × 1 080i	59.94 / 60
720p	1 280 × 720p	59.94 / 60
480p	720 × 480p 640 × 480p	59.94 / 60 59.94 / 60
480i	720 (1 440) × 480i	59.94 / 60

Este terminal de entrada no está pensado para que se use con computadoras.

Funcionamiento del televisor

Configuración inicial (listo para reproducir)

Tras enchufar la unidad en la toma de CA de su casa y presionar POWER para encender la unidad por primera vez, la unidad le asistirá para configurar el idioma de pantalla, sintonizará automáticamente todos los canales que puede recibir y ajustará el reloj.

La unidad determina automáticamente el tipo de transmisión (ondas de radio o cable) y sintoniza los canales de la siguiente manera:

	Banda	Canal
Modo TV (Ondas de radio)	VHF	2-13
	UHF	14-69
Modo CATV (Cable)	VHF	2-13
	CATV LOW BAND	95-99
	CATV MID/SUPER BAND	14-36
	CATV HYPER BAND	37-65
	ULTRA BAND	66-94 100-125
	SPECIAL CATV CHANNEL	1

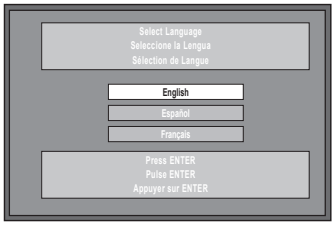
Operaciones preliminares

- Encienda el televisor y seleccione la entrada de vídeo correspondiente para conformar las conexiones a esta unidad.
- Compruebe que la antena esté conectada correctamente.

1 Presione POWER.

- Para que funcione el botón a distancia POWER, la alimentación POWER debe estar activada.

2 Presione ▲▼ para seleccionar el idioma del menú y presione ENTER.



3 Presione ENTER.

4 Presione ENTER para iniciar la configuración automática de canal.

- Luego, la unidad procede al ajuste automático del reloj. El temporizador se visualiza cuando finaliza.
- Si se exhibe "Canal no encontrado...", presione ENTER de nuevo.

- La opción HL, (horario de ahorro de luz diurna), exhibe la configuración de la hora de verano.
- HUSO.H exhibe la diferencia horaria respecto a la hora de Greenwich (GMT).

HHO (Hora estándar del Este) = GMT –5
HHC (Hora estándar central) = GMT –6
HHM (Hora estándar de las Rocosas) = GMT –7
HHP (Hora estándar del Pacífico) = GMT –8
HHA (Hora estándar de Alaska) = GMT –9
HHH (Hora estándar de Hawai) = GMT –10
Para otras zonas: xx hr

5 Presione ENTER.

■ Si la unidad no ha podido ajustar el reloj automáticamente

Fije la hora manualmente.

Cómo agregar y borrar canales

Agregue o borre canales, si no tiene ajustados los necesarios o tiene fijados canales que no necesite.

1 **Presione las teclas NUMBER para seleccionar un canal.**

p. ej. 5: [0] → [5]
15: [1] → [5]
115: [1] → [1] → [5]

• Puede también usar CH ▲▼ cuando vaya a borrar un canal.

2 **Presione ADD/DLT.**

VCR Plus+ guide channel Settings

Ajuste estos canales de guía de manera que se pueda usar el sistema VCR Plus+ para la grabación temporizada. Antes de proceder a los ajustes, prepare el papel que muestra los canales, los nombres de las estaciones y los canales de guía.

por ej.,

Nombre de la estación	Canal de guía	Número del canal	Ajuste del canal
CBS	04	04	Innecesario
HBO	33	15	Introduzca el canal 15 sucesivo al canal de guía 33.
Nickelodeon	38	20	Introduzca el canal 20 sucesivo al canal de guía 38.

Mire en los canales de guía para las estaciones en revistas.

Apunte todas las estaciones que puede recibir.

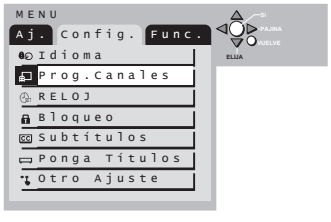
Nota:

• Si ha conectado una caja TV de cable o un receptor de satélite, sistema VCR Plus+ no funciona como no ha ajustado los canales de la guía.

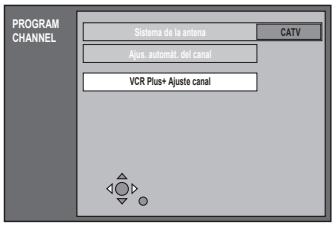
1 **Presione MENU.**

2 **Presione ◄► para seleccionar “Config.”**

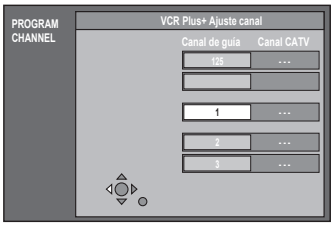
3 **Presione ▲▼ para seleccionar “Prog. Canales” y presione ENTER.**



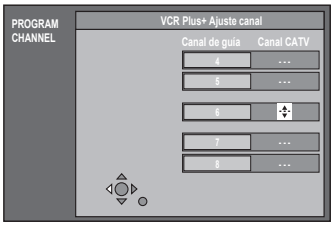
4 **Presione ▲▼ para seleccionar “VCR PLUS+ Ajuste canal” y presione ENTER.**



5 **Presione ▲▼ para seleccionar el canal de guía que quiere ajustar y presione ►.**



• Cuando seleccione el canal guía, presione y mantenga presionado ▲▼ para desplazarse por la pantalla hacia arriba y hacia abajo.



6 **Presione ▲▼ para seleccionar el canal correspondiente al de guía y presione ◄.**

• Para borrar un número, presione CANCEL.
• Repita los pasos 5 y 6 para introducir otros canales.

7 **Presione ENTER.**

■ Para salir de la pantalla

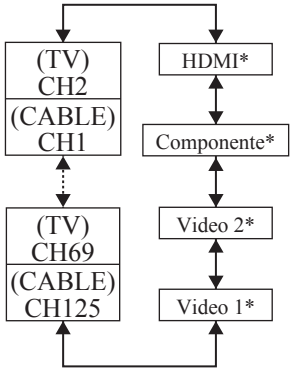
Presione RETURN.

Selección del modo de entrada

■ Método 1:

1 **Presione CH ▲▼.**

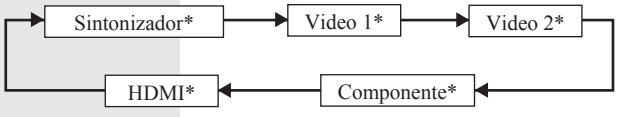
• La exhibición cambiará de la siguiente manera.



■ Método 2

1 **Presione INPUT.**

• La exhibición cambiará de la siguiente manera.



Sintonizador: Se exhibe la señal de fuente conectada al terminal VHF/UHF.
Video 1: Se exhibe la señal de fuente conectada al terminal 1 de entrada AV.
Video 2: Se exhibe la señal de fuente conectada al terminal 2 de entrada AV.
Componente: Se exhibe la señal de fuente conectada al terminal de entrada COMPONENT.
HDMI: Se exhibe la señal de fuente conectada al terminal de entrada HDMI.

For assistance, please call : 1-800-211-PANA(7262) or, contact us via the web at:http://www.panasonic.com/contactinfo

Uso del botón CH/VOL

■ **Seleccione el canal que desee:**
Presione las teclas CH ▲▼ o NUMBER.

■ **Ajuste el nivel de volumen que desee:**
Presione VOL + o VOL –.

Uso de la tecla Number

Cuando esté seleccionando canales de CABLE del 100 al 125 con las teclas NUMBER.

■ **Ejemplo 1:**
Para seleccionar el canal 125, primero presione la tecla 1, luego 2, luego 5.

■ **Ejemplo 2:**
Para seleccionar el canal 12, primero presione la tecla 1, luego 2.

■ **Ejemplo 3:**
Para seleccionar el canal 2, primero presione la tecla 0, luego 2.

Sintonización rápida

1 Presione R-TUNE para exhibir el último canal que estaba mirando.

Apagado del audio

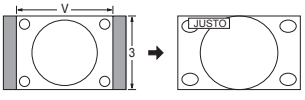
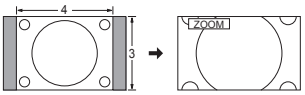
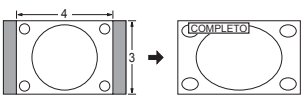
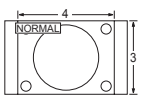
1 Presione MUTE para apagar instantáneamente el sonido. Presione de nuevo para restaurar el sonido a su nivel anterior.

Controles ASPECT

Esta función le permite poder ver la imagen en su tamaño máximo, incluyendo la imagen panorámica de formato de cine.

1 Presione ASPECT para seleccionar el modo de pantalla.

JUSTO → ZOOM → COMPLETO → NORMAL

Modo	Imagen	Explicación
JUSTO		En el modo JUSTO una imagen 4:3 se exhibirá en su tamaño máximo pero con una corrección de aspecto aplicada a los lados de la pantalla de modo que el alargamiento sólo se percibirá en los bordes izquierdo y derecho de la pantalla. El tamaño de la imagen dependerá de la señal original.
ZOOM		En el modo ZOOM la sección central de la imagen se ampliará.
COMPLETO		En el modo COMPLETO la imagen se exhibirá en su tamaño máximo pero con un ligero alargamiento.
NORMAL		En el modo NORMAL una imagen 4:3 se exhibirá en su tamaño estándar 4:3 sin alargamiento.

Funcionamiento del disco / tarjeta de memoria

Discos que sólo se pueden reproducir

Tipo de disco	Logotipo del disco	Instrucciones	Indicación en estas instrucciones de funcionamiento
DVD-Audio	DVD AUDIO	Discos de música de alta fidelidad • Reproducidos en esta unidad en 2 canales.	DVD-A
DVD-Vídeo	DVD VIDEO DVD VIDEO	Discos de películas y música de alta calidad	DVD-V
Vídeo CD	COMPACT disc DIGITAL VIDEO	Música y video grabados (incluyendo CD-R/RW)	VCD
Audio CD	COMPACT disc DIGITAL AUDIO	Audio y música grabados (incluyendo CD-R/RW) CD-R y CD-RW con música grabada en MP3 (pág. 88)	CD (CD-DA) o MP3 (MP3)

Discos que pueden grabarse y reproducirse

Tipo de disco	Logotipo del disco	Indicación en estas instrucciones de funcionamiento
DVD-R	DVD R R4.7	DVD-R
DVD-RAM	DVD RAM RAM4.7	RAM

• Finalice* el disco después de grabarlo.
***Proceso que permite reproducir discos en equipos compatibles.**

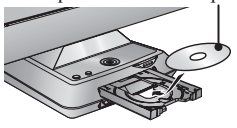
Tarjetas capaces de exhibir y guardar

Tipo de tarjeta	Logotipo de tarjeta	Indication in these operating instructions
Tarjeta de Meemoria SD	SD	SD
MultiMediaCard	MultiMediaCard™	

Introducción de un disco

1 Presione OPEN/CLOSE en la unidad para abrir la bandeja e introducir un disco.
• Presione el botón de nuevo para cerrar la bandeja.

■ **Disco sin cartucho**
Introduzca el disco con la etiqueta en el lado superior.



O

■ **Disco con cartucho**
Introduzca el disco en la guía de la bandeja.

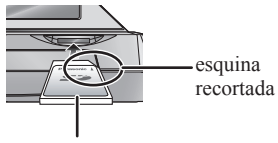
Bandeja del disco.
Introduzca el disco con la etiqueta en el lado superior, con la flecha señalando hacia el interior.

Insertar/sacar la tarjeta

Sólo inserte o saque la tarjeta tras haber apagado la unidad.

Cuando parpadea el indicador “SD” en la pantalla de la unidad, quiere decir que se está leyendo de la tarjeta o escribiendo en ella. No corte la alimentación ni saque la tarjeta, pues hacerlo podría ocasionar un funcionamiento erróneo o pérdida del contenido de la tarjeta.

■ Insertar una tarjeta



Inserte la tarjeta (con la etiqueta cara arriba y la esquina recortada a la derecha) y manténgala en su lugar hasta que oiga un clic.

■ Sacar la tarjeta

Presione el centro de la tarjeta y a continuación tire de ella y sáquela.

Grabación de programas de televisión

RAM DVD-R

- En los discos de dos caras, no es posible grabar de manera continua desde una cara a la otra. Deberá expulsar el disco y darle la vuelta.
- Cuando utilice DVD-RAM de 8 cm, saque el disco del cartucho.
- Podrá grabar hasta 99 títulos en un solo disco.
- Es posible grabar emisiones digitales que permiten “grabación única” al utilizar discos DVD-RAM compatibles con CPRM. Y no será posible grabar emisiones digitales que permitan “grabación única” al utilizar DVD-R.
- Los DVD-RAM/DVD-R tienen limitaciones de grabación.
- La grabación se realizará en el espacio disponible del disco. Los datos no se sobrescribirán.
- Si no queda espacio en el disco de grabación, debe borrar títulos que no desee o usar un nuevo disco.
- **No se pueden grabar discos DVD-R finalizados.**

1 **Presione OPEN/CLOSE en la unidad para abrir la bandeja e introducir un disco.**

2 **Presione las teclas CH ▲▼ o las teclas numéricas para seleccionar el canal.**

■ Para seleccionar con las teclas numéricas (NUMBER):

p. ej.,5: [0] → [5]
15: [1] → [5]
115: [1] → [1] → [5]

3 **Presione REC MODE para seleccionar el modo de grabación (XP, SP, LP o EP).**

XP* → SP → LP → EP

* Para grabar sonido usando LPCM (solo es posible en modo XP): Seleccione “LPCM” en “Modo Audio para grab. XP” (la calidad de la imagen puede disminuir ligeramente).

4 **Presione REC para iniciar la grabación.**

■ Para especificar una hora para detener la grabación

Durante la grabación

Presione REC en la unidad o en el control remoto para seleccionar la hora de grabación.

Cada vez que presione el botón:

OFF → 0:30 → 1:00 → 1:30 → 2:00 → 3:00 → 4:00 → OFF

■ Para detener la grabación

Presione STOP.

- Se grabará como un título hasta la posición donde se detiene.
- DVD-R DVD-R la unidad tardará aproximadamente 30 segundos en completar la información de gestión de la grabación cuando ésta haya finalizado.

■ Para realizar una pausa durante la grabación

Presione PAUSE.

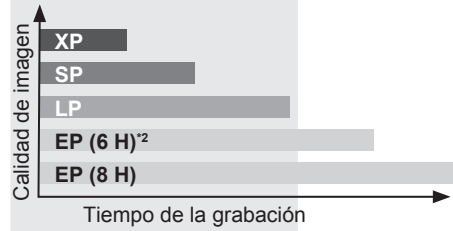
Presione PAUSE de nuevo para reanudar la grabación.

Modos de grabación y tiempo aproximado de grabación

Según el contenido a ser grabado, los tiempos de grabación pueden salir más cortos que los señalados.

(Unidad: hora)

Disc / Recording Mode	DVD-RAM		DVD-R (4,7 GB)
	De un solo lado (4,7 GB)	Doble lado (9,4 GB)	
XP (Alta calidad)	1	2*1	1
SP (Normal)	2	4*1	2
LP (Larga duración)	4	8*1	4
EP (Reproducción de muy larga duración)	8 (6*2)	16*1 (12*1*2)	8 (6*2)



*1 El tiempo de grabación de un disco a doble cara es la suma total de las dos caras del disco.

*2 Cuando en el menú SETUP se ha ajustado a “EP (6H)” el “Tiempo de grab. en el modo EP”. La calidad del sonido se baja, en comparación con otros modos de grabación, cuando se usa “EP (8H)”.

Nota:

- Cuando se graba en DVD-RAM usando el modo EP (8H), la reproducción puede no ser posible en unidades DVD que sean compatibles con DVD-RAM. En este caso utilice el modo EP (6H).

For assistance, please call : 1-800-211-PANA(7262) or, contact us via the web at:http://www.panasonic.com/contactinfo

Grabacione con temporizador

RAM DVD-R

■ Precauciones en la grabación temporizada

Cuando llega el tiempo que se definió, la grabación temporizada inicia automáticamente.

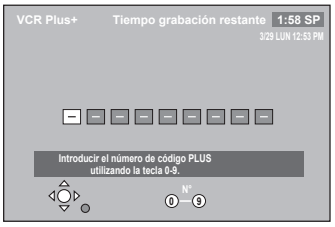
- La grabación temporizada puede iniciar mientras la unidad está tanto apagada como encendida. Cuando la unidad está apagada, el sonido y el vídeo no salen en el televisor.

Puede introducir hasta 16 programas con un adelanto de un mes.

■ Uso del sistema VCR Plus+

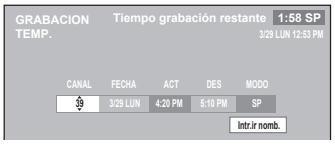
Una forma fácil de grabar con temporitzador es ingresando número de VCR Plus+. Puede encontrar estos códigos en las programaciones televisivas de periódicos y revistas.

1 **Presione VCR Plus+.**



2 **Presione las teclas NUMBER para introducir el número PlusCode.**

- Presione ◄ para volver a la cifra correcta.



3 **Presione ENTER.**

4 **Presione ENTER.**

- Se almacena la configuración.

- Repita los pasos 1~4 para programar otras grabaciones.

5 **Presione RETURN.**

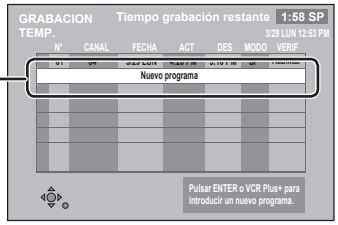
- "◴" se iluminará en el panel delantero para indicar que se ha activado el modo de espera de la grabación con temporizador.
- Para cancelar la grabación una vez que ya ha comenzado la grabación, mantenga presionado el STOP durante unos pocos segundos.

■ Programación manual

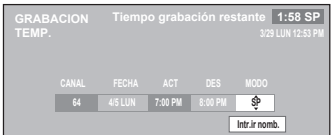
1 **Presione PROG/CHECK.**

2 **Presione ▲▼ para seleccionar "Nuevo programa" y presione ENTER.**

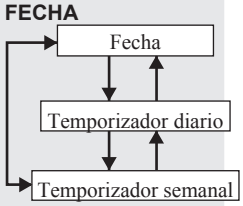
La línea resaltada estará preparada para la programación.



3 **Presione ► para desplazar y cambiar los detalles con ▲▼.**



- **FECHA**



Fecha actual hasta un mes más tarde menos un día

DOM–SAB→ LUN–SAB → LUN–VIE

DOM SEMANAL →----→ SAB SEMANAL

4 **Presione ENTER.**

- Repita los pasos 2~4 para programar otras grabaciones.

5 **Presione RETURN.**

- "◴" se iluminará en el panel delantero para indicar que se ha activado el modo de espera de la grabación con temporizador.
- Para cancelar la grabación una vez que ya ha comenzado la grabación, mantenga presionado el STOP durante unos pocos segundos.

Controle, cambie o borre el programa

1 **Presione PROG/CHECK.**

■ Para cambiar un programa

Presione ▲▼ para seleccionar el programa y luego presione ENTER.

Presione ◄► para desplazarse por las opciones y cambiarlas con ▲▼, y a continuación presione ENTER.

■ Para borrar un programa

Presione ▲▼ para seleccionar el programa y a continuación presione CANCEL.

- No puede borrar programas que se estén grabando en este momento.

■ Para poner la unidad en el modo de espera de grabación con temporizador

Presione RETURN.

- "◴" se iluminará en el panel delantero para indicar que se ha activado el modo de espera de la grabación con temporizador.

2 **Presione RETURN.**

- La lista de grabación con temporizador desaparece.

Reproducción durante la grabación

RAM

■ Reproducción seguida

Es posible empezar la reproducción desde el comienzo de un título mientras lo sigue grabando.

1 Presione PLAY/×1.3 durante la grabación o la grabación temporizada.

■ Grabación y reproducción simultáneas

Es posible comenzar la reproducción del título que se está grabando o reproducir un título grabado anteriormente.

1 Presione DIRECT NAVIGATOR durante la grabación o la grabación temporizada.

2 Presione ▲▼◄► para seleccionar el título y presione ENTER.

■ Time Slip

Es posible reproducir el título que se está grabando para controlar su correcta grabación. Es también posible controlar las partes grabadas anteriormente.

1 Presione TIME SLIP durante la grabación o la grabación temporizada.

- La reproducción comienza a partir de los 30 segundos anteriores a ese momento. Lo que se esté grabando en este momento aparecerá como una imagen incrustada; asimismo oirá el audio de la reproducción.

2 Presione ▲▼ para seleccionar el tiempo y presione ENTER.

Reproducción de discos

RAM DVD-R DVD-A DVD-V VCD CD MP3

1 Presione OPEN/CLOSE en la unidad para abrir la bandeja e introducir un disco.

- Presione el botón de nuevo para cerrar la bandeja.

2 Presione PLAY/×1.3

- La unidad tardará un cierto tiempo en leer el disco antes de iniciar la reproducción.

■ Detener la reproducción

Presione STOP.

- Presione STOP de nuevo para volver a la pantalla de televisión.

DVD-V DVD-A CD VCD MP3

- Cuando el mensaje “PLAY” parpadee en la pantalla delantera, la función de reanudación estará activada.
- El protector de pantalla puede aparecer cuando se detiene la reproducción. Presione STOP de nuevo y podrá utilizar el sintonizador de esta unidad para ver televisión.

■ Pausar la reproducción

Presione PAUSE.

- Presione PAUSE de nuevo para reanudar la reproducción.

Iniciar la reproducción desde el punto en que se detuvo (función de reanudación)

RAM DVD-R DVD-A DVD-V VCD CD MP3

1 Presione STOP durante la reproducción.

- El mensaje “PLAY” parpadea en la pantalla de la unidad (únicamente en la reproducción normal). La unidad memorizará la posición.

2 Presione PLAY/×1.3

- La reproducción se iniciará desde el punto en que se detuvo.

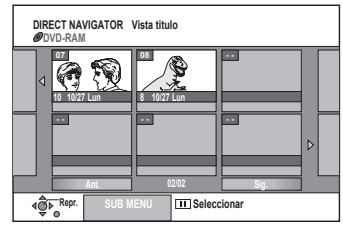
■ Para cancelar la función de reanudación (sólo en reproducción normal)

Presione STOP mientras la unidad recuerda la posición. (La posición también se borrará cuando apague la unidad o abra la bandeja del disco.)

Selección de programas grabados (títulos) para reproducirlos

RAM DVD-R

1 Presione DIRECT NAVIGATOR.



2 Presione ▲▼◄► para seleccionar el título y presione ENTER.

- También puede seleccionar títulos con las teclas de número.
  p.ej., 5: [0] → [5] 15: [1] → [5]
- Si introduce un número mayor que el número total de títulos, se seleccionará el último título.

■ Para detener la reproducción

Presione STOP.

■ Para salir de la pantalla

Presione RETURN o DIRECT NAVIGATOR.

Iconos de la pantalla de DIRECT NAVIGATOR	
:	Título protegido.
:	Título que no se grabó durante la protección de grabación (emisiones digitales, etc.).
X :	Título que no puede reproducirse porque los datos están dañados.
● :	Grabando actualmente.

Avance rápido y rebobinado (búsqueda)

RAM DVD-R DVD-A DVD-V VCD CD MP3

1 Presione ►► FF/SLOW o ◄◄ REW/SLOW durante la reproducción.

- Presione los botones ►►I o I◄◄ de la unidad y manténgalos presionados.
- La velocidad se incrementará hasta un máximo de 5 pasos.
- Presione PLAY/×1.3 para volver a la velocidad normal.

For assistance, please call : 1-800-211-PANA(7262) or, contact us via the web at:http://www.panasonic.com/contactinfo

Saltar pistas

RAM DVD-R DVD-A DVD-V VCD CD MP3

1 Presione SKIP ▶▶I o SKIP I◀◀ durante la reproducción o en el modo de pausa.
- En la unidad, presione ▶▶I o I◀◀.
- Cada vez que presione estos botones, el número de saltos se incrementará.

Avanzar un minuto (salto CM)

RAM DVD-R

1 Presione CM SKIP durante la reproducción.
- La reproducción se reanudará al cabo de aproximadamente un minuto.

Nota:
- Si el inicio del programa siguiente está dentro de un minuto desde el punto en que saltó, la reproducción se reiniciará desde el principio de ese programa.

Inicio desde un elemento seleccionado

RAM DVD-R DVD-A DVD-V VCD CD MP3

Iniciar la reproducción desde un título, capítulo o pista seleccionados.

1 Presione las teclas NUMBER para seleccionar el elemento durante la reproducción o cuando esté detenida.

p.ej., 5: [0] → [5]
15: [1] → [5]

MP3

p.ej., 5: [0] → [0] → [5]
15: [0] → [1] → [5]
115: [1] → [1] → [5]

Reproducción en cámara lenta

RAM DVD-R DVD-A (Sólo partes de imagen animada) DVD-V VCD

1 Presione ▶▶ FF/SLOW o ◀◀ REW/SLOW con la reproducción en pausa.
- Presione los botones ▶▶I o I◀◀ de la unidad y manténgalos presionados.
- Cuando la reproducción en cámara lenta continúa durante aproximadamente 5 minutos, se pondrá en pausa automáticamente.

■ Para volver a la velocidad normal
Presione PLAY/×1.3.

Vista rápida

RAM (Sólo con Dolby Digital)

La velocidad de reproducción puede incrementarse sin distorsionar el audio.

1 Presione PLAY/x1.3 y manténgalo presionado durante la reproducción.

■ Para volver a la velocidad normal
Presione PLAY/×1.3.

Visualización fotograma a fotograma

RAM DVD-R DVD-A (Sólo partes de imagen animada) DVD-V VCD

1 Presione FRAME II► o FRAME ◄II con la reproducción en pausa.

■ Para volver a la velocidad normal
Presione PLAY/×1.3.

Exhibición de la imagen de televisión como imagen incrustada

RAM DVD-R

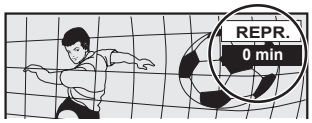
1 Presione TIME SLIP durante la reproducción.
- La unidad exhibe la imagen del televisor como imagen incrustada
- Oirá el audio de la reproducción.
- Presione TIME SLIP de nuevo para cancelar.

■ Para mostrar las imágenes reproducidas completas
Presione TIME SLIP.

Saltar hasta la hora especificada (Time Slip)

RAM DVD-R

1 Presione TIME SLIP durante la reproducción.



2 Presione ▲▼ para seleccionar la hora mientras se muestra la indicación.
- El indicador de tiempo se apagará al cabo de 5 segundos, pero se volverá a encender cuando configure el indicador.
- Presione ▲▼ para cambiar el tiempo en unidades de un minuto. Presione ▲▼ y manténgalos presionados para cambiar el tiempo en unidades de 10 minutos.

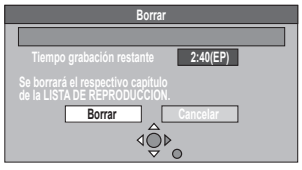
3 Presione ENTER.
- La reproducción saltará hasta la hora especificada.

Para borrar un programa que se esté reproduciendo

RAM DVD-R

Puede borrar títulos mientras se están reproduciendo.

1 Presione ERASE durante la reproducción.
- Se exhibirá una pantalla de confirmación.



2 Presione ◄►para seleccionar “Borrar” y luego presione ENTER.

Utilizar menús para reproducir MP3

MP3

Esta unidad puede reproducir archivos MP3 grabados en CD-R/RW con un computador. Los archivos tratados como pistas y carpetas se tratarán como grupos.

1 Presione TOP MENU durante la reproducción o el modo detenido.

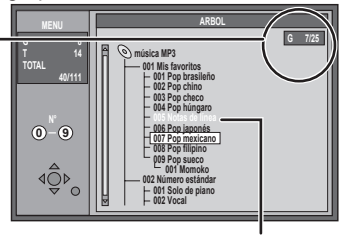
G: Grupo n.°
T: n.° de pista en el grupo
TOTAL: n.° de pista./n.° total de pistas en todos los grupos

Utilizar la pantalla con estructura de árbol para encontrar un grupo

2 Presione ► para visualizar la pantalla con estructura de árbol mientras se muestra la lista de archivos. Presione ▲▼◄► para seleccionar un grupo y presione ENTER.

• Aparecerá la lista de archivos del grupo.

Nº de grupos seleccionado/nº total de grupos.
Si el grupo no tiene ninguna pista, se mostrará "_ _" como número de grupo.



No podrá seleccionar grupos que contengan archivos no compatibles.

Utilizar la pantalla con estructura de árbol para encontrar una pista.

2 Presione ▲▼ para seleccionar la pista y presione ENTER.

• La reproducción seguirá hasta la última pista en el último grupo.
• "☞" indica la pista que se está reproduciendo.
• También puede seleccionar la pista con las teclas numéricas.
p.ej., 5: [0] → [0] → [5] 15: [0] → [1] → [5]

■ Para mostrar otras páginas

Presione ▲▼◄► para seleccionar "Ant." o "Sig." y presione ENTER.

• Después de especificar en una lista todas las pistas de un grupo, aparecerá la lista del grupo siguiente.

■ Para salir de la pantalla

Presione RETURN o TOP MENU.

Reproducción de imágenes fijas de la tarjeta o DVD-RAM

RAM SD

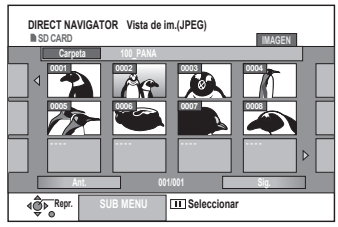
1 Inserte un DVD-RAM o una tarjeta.

2 Presione SD o DVD para seleccionar la unidad.

3 Presione DIRECT NAVIGATOR.

• RAM Presione ▲▼◄► para seleccionar la pestaña "IMAGEN" y a continuación presione ENTER.

p.ej., Tarjeta



4 Presione ▲▼◄► para seleccionar la imagen fija y presione ENTER.

• Puede también seleccionar títulos con las teclas NUMBER.
p.ej., 5: [0] → [0] → [0] → [5]
15: [0] → [0] → [1] → [5]
115: [0] → [1] → [1] → [5]
1115: [1] → [1] → [1] → [5]

■ Para detener la reproducción

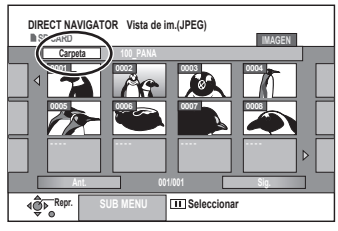
Presione STOP.

■ Para salir de la pantalla

Presione DIRECT NAVIGATOR.

■ Para seleccionar las imágenes fijas de otra carpeta

5 Presione ▲▼◄► para seleccionar "Carpeta" y presione ENTER.



6 Presione ▲▼ para seleccionar la carpeta y presione ENTER.

• Puede también seleccionar títulos con las teclas NUMBER.
p.ej., 5: [0] → [0] → [5]
15: [0] → [1] → [5]
115: [1] → [1] → [5]

Funciones útiles durante la reproducción de imágenes fijas

RAM SD

■ Girar

1 Presione ▲▼◄► para seleccionar una imagen en la pantalla DIRECT NAVIGATOR y a continuación presione ENTER.

• La imagen seleccionada se exhibe en la pantalla completa.

2 Presione SUB MENU.

3 Presione ▲▼ para seleccionar "Girar a DERECHA" o "Girar a IZQUIERDA" y presione ENTER.

■ Acercar con zoom/Alejar con el zoom

(Sólo para imagen fija con número bajo de píxeles)

1 Presione ▲▼◄► para seleccionar una imagen en la pantalla DIRECT NAVIGATOR y presione ENTER.

2 Presione SUB MENU.

3 Presione ▲▼ para seleccionar "Acercar con zoom" y presione ENTER.

• Para devolver a la imagen su tamaño original, presione ▲▼ para seleccionar "Alejar con el zoom" en el paso 3 y a continuación presione ENTER.

For assistance, please call : 1-800-211-PANA(7262) or, contact us via the web at:http://www.panasonic.com/contactinfo

Formatear un disco/Formatear una tarjeta

RAM **SD**

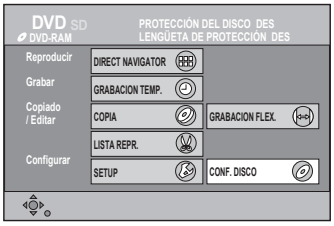
Notas:
- El formateo borra todo el contenido de un disco, incluyendo los datos del computador. Compruébelos cuidadosamente antes de formatear.
- Algunos DVD-RAM no tienen formato. Formatéelos antes de utilizarlos en esta unidad. El formateo también le permite borrar todo el contenido de un disco.

1 **Presione MENU en modo de detención y a continuación presione ◄► para seleccionar “Func.”**

2 **Presione ENTER.**

3 **Presione ▲▼◄► para seleccionar “CONF. DISCO” o “AJUSTE TARJETA” y presione ENTER.**

e. pj., DVD-RAM



4 **Presione ▲▼ para seleccionar “Formateo del disco” o “Formatear” y presione ENTER.**

5 **Presione ◄► para seleccionar “Sí” y presione ENTER.**

6 **Presione ◄► para seleccionar “Iniciar” y presione ENTER.**
- Aparecerá un mensaje cuando haya finalizado el formateo.

7 **Presione ENTER.**

■ Para detener el formateo

Presione RETURN.

Notas:
- **No apague la unidad ni desconecte el cable de alimentación de CA mientras el mensaje “Formateando el disco” aparezca en el televisor. Si lo hace, es posible que el disco no pueda utilizarse.** (Este proceso puede tardar hasta un máximo de 70 minutos (DVD-RAM). Si tarda más de 2 minutos, puede cancelarlo pulsando RETURN. En este caso, el disco deberá formatearse de nuevo).
- Todos los datos del disco se borrarán cuando se formatee, incluyendo grabaciones realizadas con esta unidad. Los datos escritos en el disco mediante un computador también se borrarán.
- Cuando un disco se ha formateado mediante esta unidad, es posible que no sea posible utilizarlo en ningún otro equipo.
- El disco no podrá formatearse si la lengüeta de protección contra escritura está en la posición protegida (PROTECT). Retire la protección para continuar.
- La tarjeta SD no puede formatearse si la protección contra escritura se cambia a “LOCK”. Quite la protección para continuar.
- Si se intenta formatear discos que esta unidad no puede usar, aparecerá el mensaje “Formateo imposible.
- Los DVD-R y los CD-R/RW no pueden formatearse.

Finalizar un disco

DVD-R (Únicamente para DVD-R grabados en esta unidad)

Puede reproducir DVD-R en reproductores DVD compatibles finalizándolos en esta unidad y convirtiéndolos en DVD de vídeo que cumplan con los estándares de DVD de vídeo.

1 **Presione MENU en modo de detención y a continuación presione ◄► para seleccionar “Func.”**

2 **Presione ENTER.**

3 **Presione ▲▼◄► para seleccionar “CONF. DISCO” y presione ENTER.**

4 **Presione ▲▼ para seleccionar “Cerrar” y presione ENTER.**

5 **Presione ◄► para seleccionar “Sí” y presione ENTER.**

6 **Presione ◄► para seleccionar “Iniciar” y presione ENTER.**
- La finalización se iniciará.
- Cuando la finalización haya terminado, aparecerá un mensaje.

7 **Presione ENTER.**

Notas:
- **No desconecte el cable de alimentación de la CA mientras el mensaje “Finalizando el disco” aparezca en el televisor. Si lo hace, el disco no podrá utilizarse.**
- El proceso de finalización puede tardar hasta 15 minutos.
- Sólo podrá finalizar DVD-R que se hayan grabado en esta unidad.
- No podrá grabar en DVD-R que se hayan finalizado
- **Después de la finalización**
  - El disco sólo podrá reproducirse y ya no podrá grabar en él ni editarlo.
  - Los DVD-R finalizados en esta unidad no pueden reproducirse en otros reproductores DVD debido a la condición de la grabación.
  - Se producirá una pausa de varios segundos entre los títulos.
  - Los títulos se dividen en capítulos de unos 5 minutos*.
- Este tiempo puede variar en gran medida en función de la condición y el modo de la grabación.
- Visite la página principal de Panasonic para obtener más información acerca de los DVD.

  Para EEUU: http://www.panasonic.com/playDVD-R

  Para Canadá: http://www.panasonic.ca

	Antes de la finalización	Después de la finalización
Pantalla del disco en esta unidad	DVD-R	DVD-V
Grabación/edición/introducción de nombres	○	×
Reproducción en otros reproductores DVD	×	○

Es posible que los DVD-R finalizados en esta unidad no puedan leerse en otros reproductores DVD debido a la condición de la grabación.

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