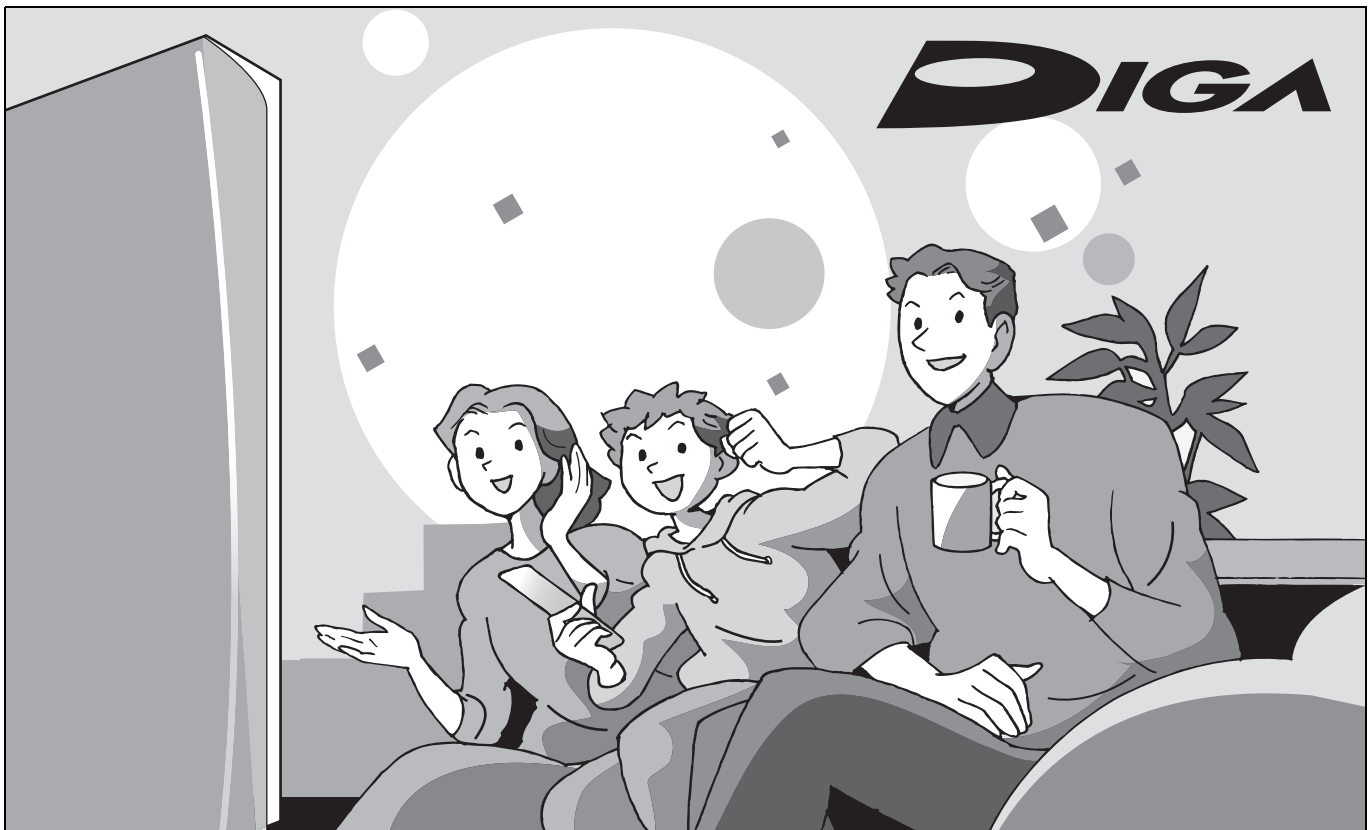


## Operating Instructions

DVD Video Recorder

Model No. **DMR-E55**



### Dear customer

Thank you for purchasing this product. For optimum performance and safety, please read these instructions carefully.

Before connecting, operating or adjusting this product, please read these instructions completely.

Please keep this manual for future reference.

#### Region number supported by this unit

Region numbers are allocated to DVD players and software according to where they are sold.

- The region number of this unit is "1".
- The unit will play DVDs marked with labels containing "1" or "ALL".

Example:



**For U.S.A. only**

The warranty can be found on page 46.

**For Canada only**

The warranty can be found on page 47.

La referencia rápida en español se puede encontrar en la página 48-51.

Unless otherwise indicated, illustrations in these operating instructions are of DMR-E55 for U.S.A. and Canada.

**CAUTION!**

THIS PRODUCT UTILIZES A LASER.  
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE. DO NOT OPEN COVERS AND DO NOT REPAIR YOURSELF. REFER SERVICING TO QUALIFIED PERSONNEL.

**WARNING:**



TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK OR PRODUCT DAMAGE, DO NOT EXPOSE THIS APPARATUS TO RAIN, MOISTURE, DRIPPING OR SPLASHING AND THAT NO OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHALL BE PLACED ON THE APPARATUS.

THE FOLLOWING APPLIES ONLY IN THE U.S.A.

**Note to CATV system installer:**

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

THE FOLLOWING APPLIES ONLY IN THE U.S.A. and Canada

	<b>CAUTION</b> RISK OF ELECTRIC SHOCK DO NOT OPEN	
<p>CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE SCREWS. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.</p>		



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



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

**CAUTION!**

- DO NOT INSTALL OR PLACE THIS UNIT IN A BOOKCASE, BUILT-IN CABINET OR IN ANOTHER CONFINED SPACE. ENSURE THE UNIT IS WELL VENTILATED. TO PREVENT RISK OF ELECTRIC SHOCK OR FIRE HAZARD DUE TO OVERHEATING, ENSURE THAT CURTAINS AND ANY OTHER MATERIALS DO NOT OBSTRUCT THE VENTILATION VENTS.
- DO NOT OBSTRUCT THE UNIT'S VENTILATION OPENINGS WITH NEWSPAPERS, TABLECLOTHS, CURTAINS, AND SIMILAR ITEMS.
- DO NOT PLACE SOURCES OF NAKED FLAMES, SUCH AS LIGHTED CANDLES, ON THE UNIT.
- DISPOSE OF BATTERIES IN AN ENVIRONMENTALLY FRIENDLY MANNER.

THE FOLLOWING APPLIES ONLY IN THE U.S.A.

**FCC Note:**

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

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

FCC Caution: To assure continued compliance, follow the attached installation instructions and use only shielded interface cables when connecting to peripheral devices.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

## IMPORTANT SAFETY INSTRUCTIONS

Read these operating instructions carefully before using the unit. Follow the safety instructions on the unit and the applicable safety instructions listed below. Keep these operating instructions handy for future reference.

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



This DVD Video recorder records high quality images to rapid random access capable DVD-RAM media. This has resulted in many new features that outperform older tape formats. The following information summarizes a few of these features.

## Instant recording

You no longer need to search for empty disc space. By pressing the recording button, the unit finds available recording space and begins recording right away. There is no need to worry about overwriting already recorded content.

## Instant play

There is no need to rewind or search forward. Direct Navigator guides you to the beginning of the recorded video immediately.



### Chasing playback

There is no need to wait until recording is complete. Without stopping recording, you can play the video currently being recorded from its beginning.



### Simultaneous Recording and Playback

While recording, you can play another video program that was recorded previously.



### Time Slip

During play and also while recording, you can jump to the scene you wish to view by specifying the skip time.

Manufactured under license from Dolby Laboratories. "Dolby" and the double-D symbol are trademarks of Dolby Laboratories.

"DTS" and "DTS 2.0 + Digital Out" are trademarks of Digital Theater Systems, Inc.

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

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

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

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

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

## Getting started

<b>IMPORTANT SAFETY INSTRUCTIONS</b> .....	2
<b>Useful features</b> .....	3
<b>Accessories</b> .....	4
<b>The remote control</b> .....	4
<b>Control reference guide</b> .....	5
<b>STEP 1 Connection</b> .....	6
<b>STEP 2 Plug-in Auto Tuning</b> .....	10
<b>STEP 3 Channel settings</b> .....	12
<b>STEP 4 Set up to match your television and remote control</b> .....	14
<b>Disc information</b> .....	15

## Recording

<b>Recording television programs</b> .....	16
Recording modes and approximate recording times .....	17
Selecting audio to record .....	17
Playing while you are recording .....	17
Flexible Recording .....	18
Recording from a video cassette recorder .....	18
<b>Timer recording</b> .....	19
Using VCR Plus+ number to make timer recordings .....	19
Manually programming timer recordings .....	20
Check, change or delete a program .....	21

## Playing back

<b>Playing discs</b> .....	22
Operations during play .....	23
Editing operations during play .....	24
Changing audio during play .....	24
<b>Using menus to play MP3</b> .....	25
<b>Using on-screen menus</b> .....	26
Common procedures .....	26
Disc menu—Setting disc content .....	26
Play menu—Change play sequence .....	27
Video menu—Change picture quality .....	27
Audio menu—Change sound effect .....	27

## Editing

<b>Editing titles/chapters</b> .....	28
Editing titles/chapters and playing chapters .....	28
Title operations .....	29
Chapter operations .....	29
<b>Creating, editing and playing play lists</b> .....	30
Creating play lists .....	30
Editing and playing play lists/chapters .....	31
Play list operations .....	31
Chapter operations .....	31

## Convenient functions

<b>Disc setting</b> .....	32
Disc Name .....	33
Disc Protection .....	33
Format disc .....	33
Select First play .....	33
Finalize .....	33
<b>Entering text</b> .....	34
<b>FUNCTIONS window and Status messages</b> .....	35
FUNCTIONS window .....	35
Status messages .....	35
<b>Changing the unit's settings</b> .....	36
Summary of settings .....	36
Common procedures .....	38
Clock settings .....	38

## Reference

<b>Specifications</b> .....	39
<b>Maintenance</b> .....	39
<b>Glossary</b> .....	40
<b>Frequently asked questions</b> .....	41
<b>Error messages</b> .....	42
<b>Troubleshooting guide</b> .....	43
<b>Product Service</b> .....	45
<b>Limited Warranty (ONLY FOR U.S.A.)</b> .....	46
<b>Limited Warranty (ONLY FOR CANADA)</b> .....	47
<b>Referencia rápida en español (Spanish Quick Reference)</b> .....	48
<b>Index</b> .....	Back cover

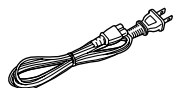
# Accessories



Please check and identify the supplied accessories. Use numbers indicated in parentheses when asking for replacement parts.  
**Only for U.S.A.:** To order accessories, refer to "Accessory Purchases" on page 46.  
**For other areas:** To order accessories, call the dealer from whom you have made your purchase.



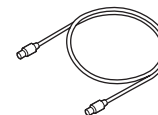
1 Remote control  
(N2QAKB000050)



1 AC power supply cord  
**For U.S.A. and Canada**  
 (K2CB2CB00006)



**For units with PX printed on the outer packaging**  
 (RJA0019-2K)



1 75  $\Omega$  coaxial cable  
(VJA1125)

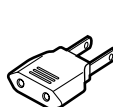
• For use with this unit only. Do not use it with other equipment.



2 Batteries  
for remote control



1 Audio/video cable  
(K2KA6CA00001)



1 Power plug adaptor  
(K2DA42E00001)

**For units with PX printed on the outer packaging**

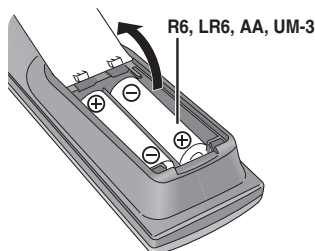
(U.S.A. only)

## Product Registration Card

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

# The remote control

## Batteries



- Insert so the poles (+ and -) match those in the remote control.
- Do not use rechargeable type batteries.
- Do not mix old and new batteries.
- Do not use different types at the same time.
- Do not heat or expose to flame.
- Do not take apart or short circuit.
- Do not attempt to recharge alkaline or manganese batteries.
- Do not use batteries if the covering has been peeled off.

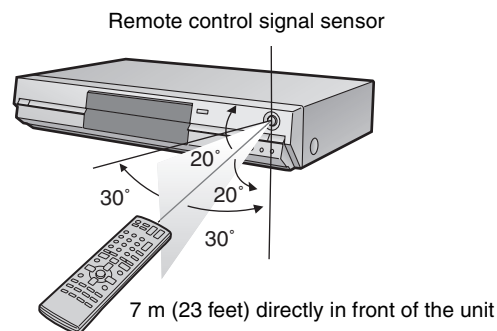
Mishandling of batteries can cause electrolyte leakage which can damage items the fluid contacts and may cause a fire.

Remove if the remote control is not going to be used for a long period of time. Store in a cool, dark place.

## Note

If you cannot operate the unit or television using the remote control after changing the batteries, please re-enter the codes (➡ page 14).

## Use

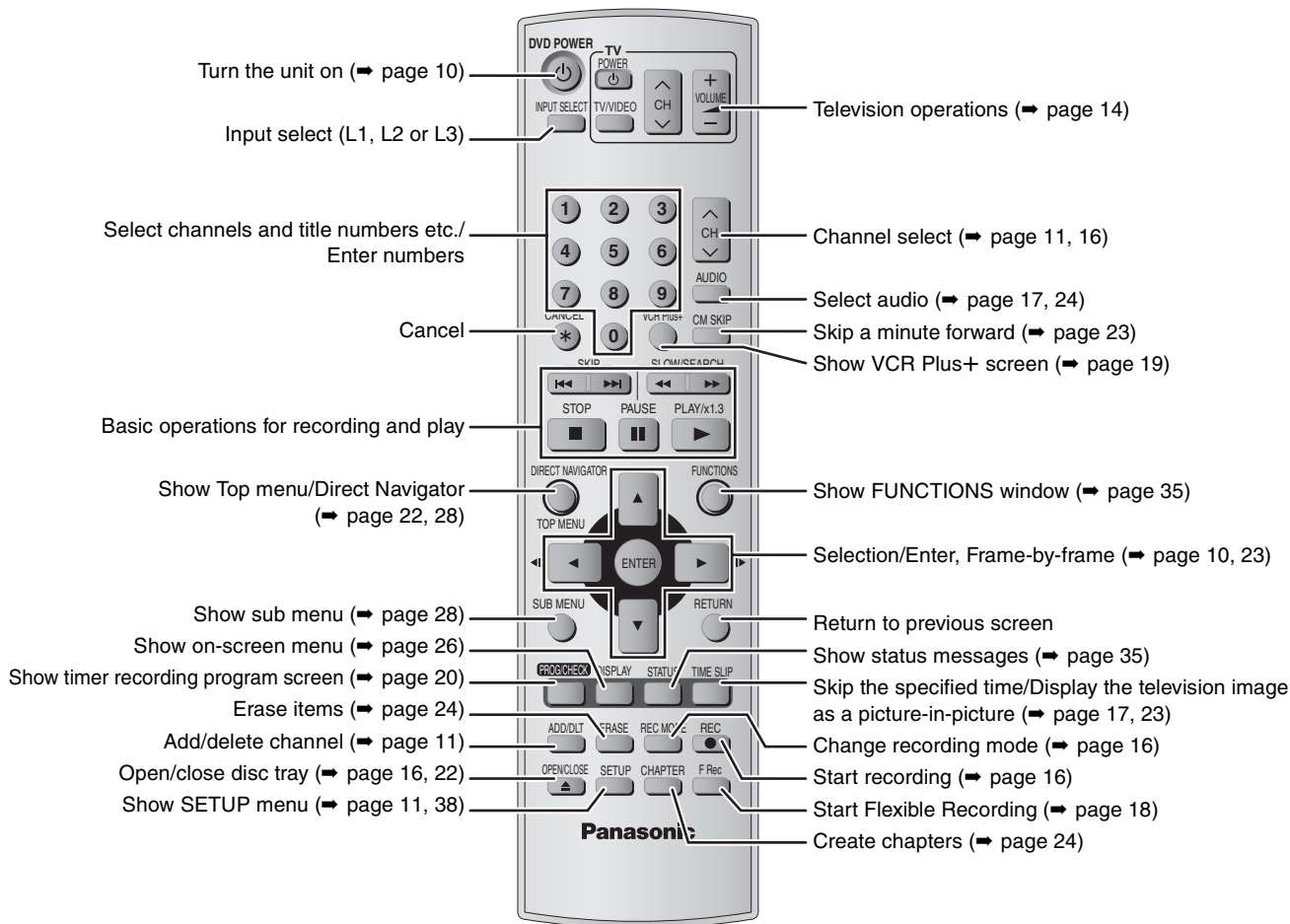


**The manufacturer accepts no responsibility and offers no compensation for loss of recorded or edited material due to a problem with the unit or recordable media, and accepts no responsibility and offers no compensation for any subsequent damage caused by such loss.**

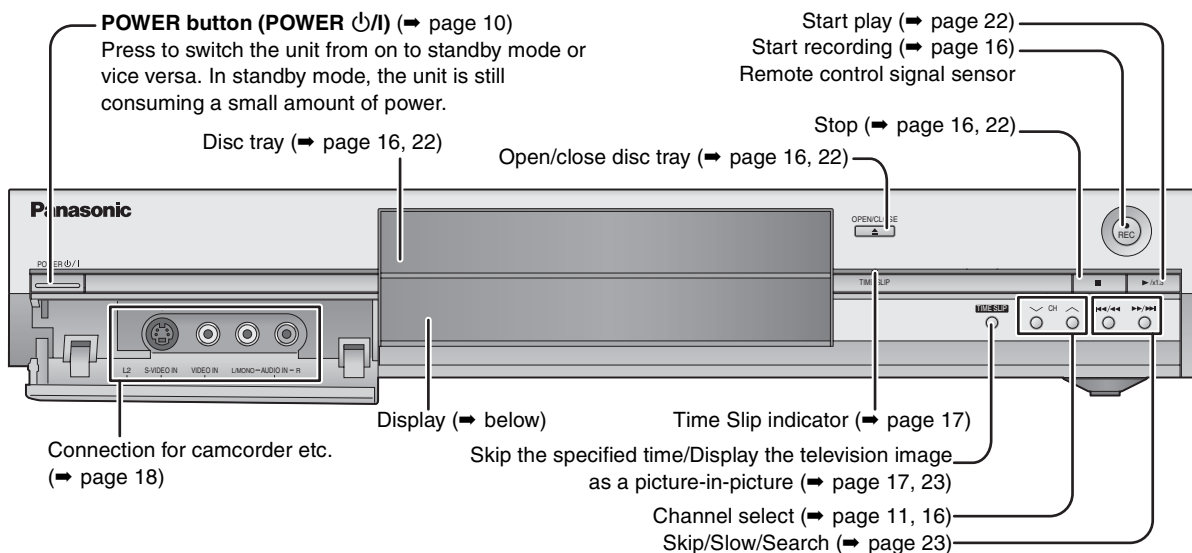
### Examples of causes of such losses are

- A disc recorded and edited with this unit is played in a DVD recorder or computer disc drive manufactured by another company.
- A disc used as described above and then played again in this unit.
- A disc recorded and edited with a DVD recorder or computer disc drive manufactured by another company is played in this unit.

## Remote control

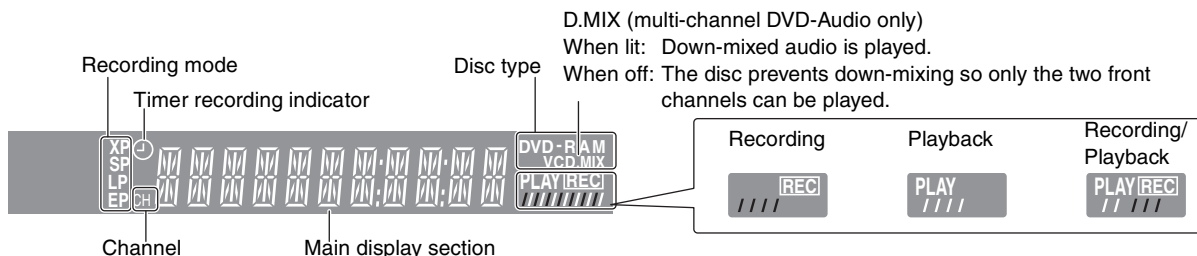


## Main unit



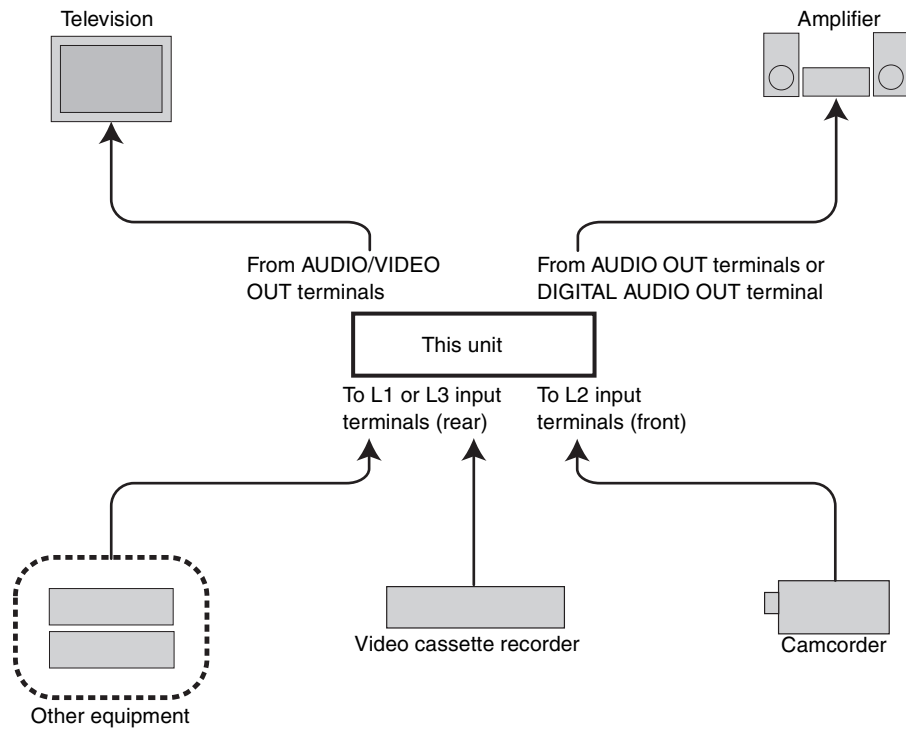
Rear panel terminals (⇒ page 7)

## The unit's display



# STEP 1 Connection

## ■ Examples of equipment you can connect to this unit's terminals



**Do not place the unit on amplifiers or equipment that may become hot.**

The heat can damage the unit.



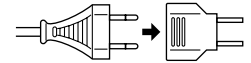
**Before moving the unit, ensure the disc tray is empty. Failure to do so will risk severely damaging the disc and the unit.**

## ■ When the unit is not to be used for a long time

To save power, unplug it from the household AC outlet. This unit consumes a small amount of power, even when it is turned off (approx. 2.9 W).

### For units with PX printed on the outer packaging

If the power plug does not fit your AC outlet, use the power plug adaptor (included). If it still doesn't fit, contact an electrical parts distributor for assistance.



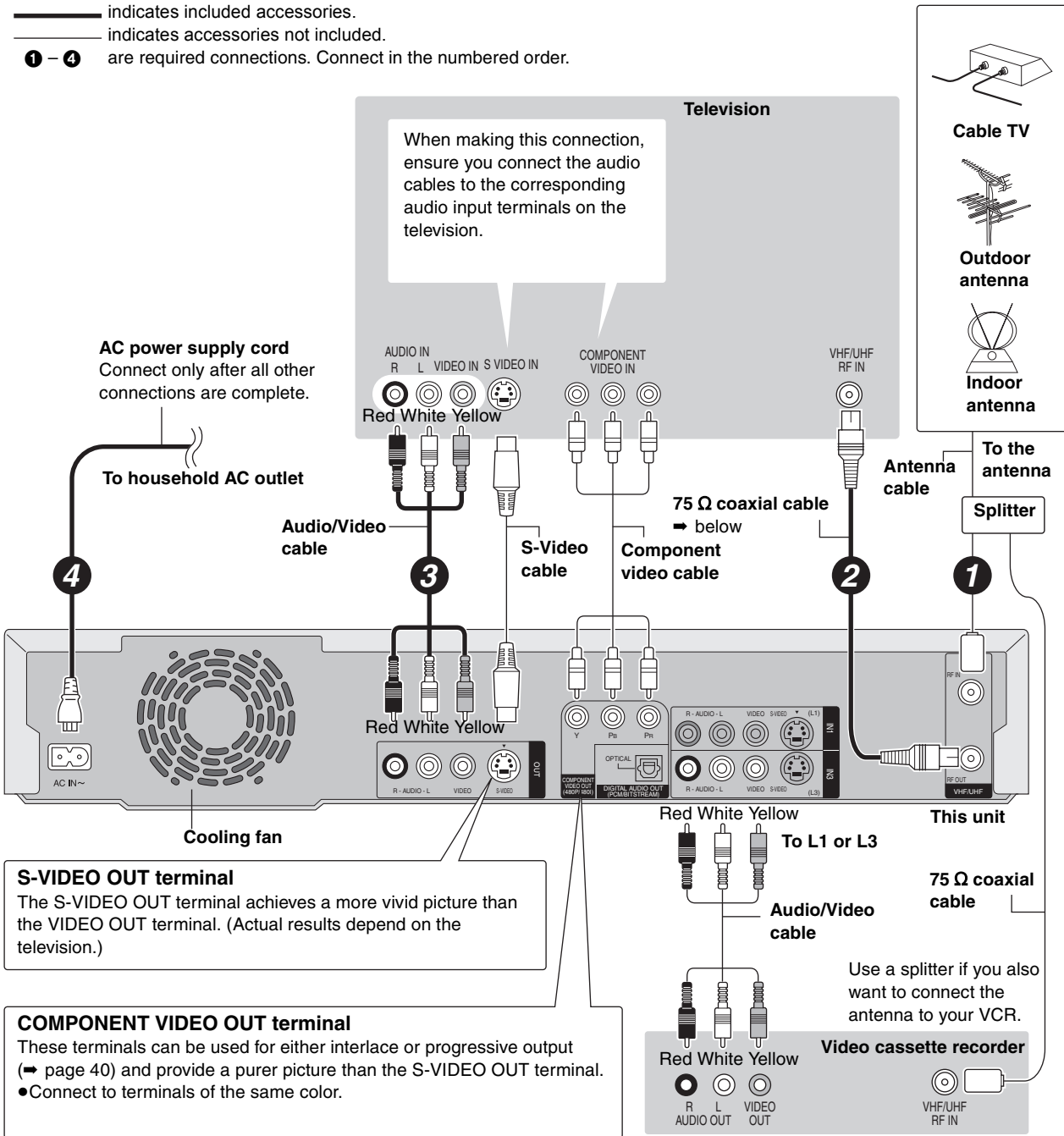
- The equipment connections described are examples.
- Before connection, turn off all equipment and read the appropriate operating instructions.
- Peripheral equipment and optional cables sold separately unless otherwise indicated.

## Connecting a television and VCR

———— indicates included accessories.

———— indicates accessories not included.

① - ④ are required connections. Connect in the numbered order.

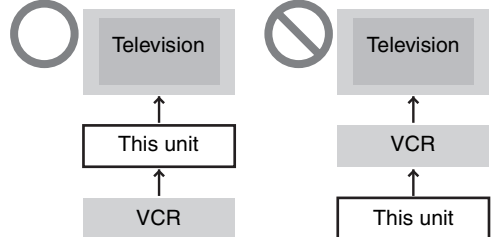


**S-VIDEO OUT terminal**  
The S-VIDEO OUT terminal achieves a more vivid picture than the VIDEO OUT terminal. (Actual results depend on the television.)

**COMPONENT VIDEO OUT terminal**  
These terminals can be used for either interlace or progressive output (→ page 40) and provide a purer picture than the S-VIDEO OUT terminal.  
• Connect to terminals of the same color.

**75 Ω coaxial cable**  
The picture and sound signal from this unit does not go through the 75 Ω coaxial cable to the television. Make sure you connect one of the following terminals on this unit to the television: the AUDIO/VIDEO OUT terminal, the S-VIDEO OUT terminal or the COMPONENT VIDEO OUT terminal. If the television has none of these terminals, consult your local dealer.  
• Refer to page 8 if the antenna connector doesn't match.

**Do not connect the unit through a video cassette recorder**  
Video signals fed through video cassette recorders will be affected by copyright protection systems and the picture will not be shown correctly on the television.

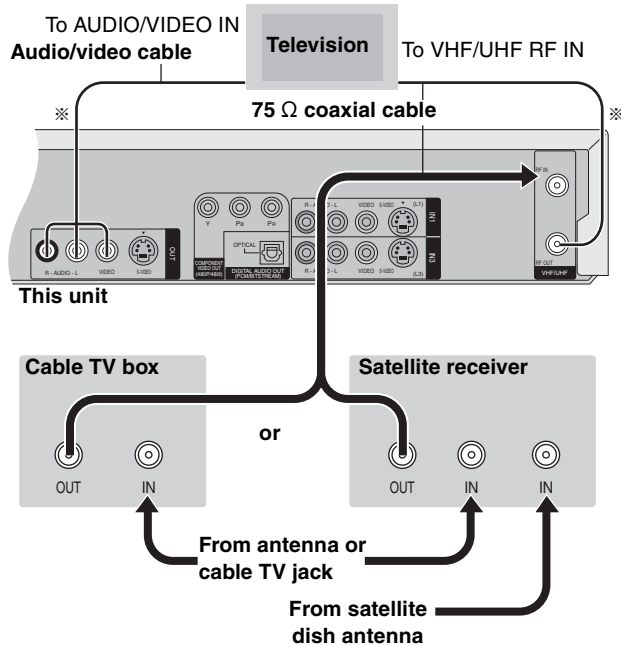


• When connecting to a television with a built in VCR, connect to the input terminals on the television side, not the VCR side.

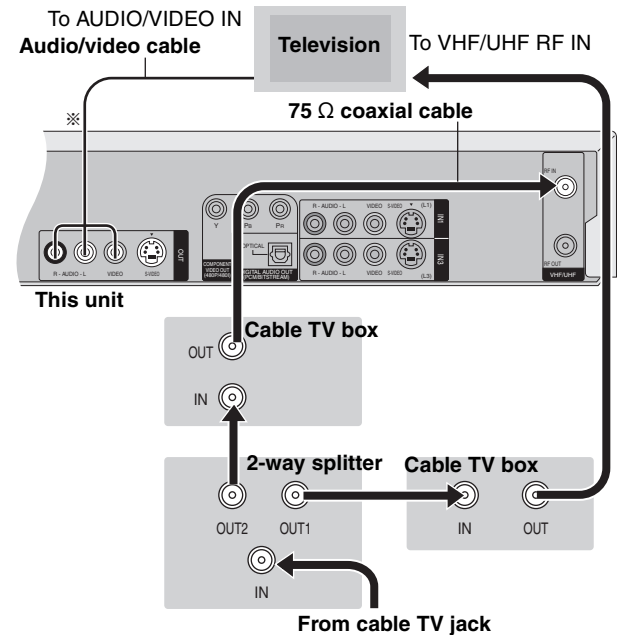
## STEP 1 Connection

### Connecting a cable TV box/satellite receiver

- You need to subscribe to a cable TV or satellite TV service, to enjoy viewing their programming.
- Consult your service provider regarding appropriate cable TV box or satellite receiver.



- You can record and view simultaneously scrambled and unscrambled channels if connections are made as shown in the diagram below.



※ For more information on connections (→ page 7)

### If the antenna connector doesn't match

#### Other antenna connections to the unit

Use one of the following connections to suit the antenna lead.

- If your television has both lead and coaxial VHF terminals, use the lead connection to minimize signal loss.

#### ■ A single twin lead

from the antenna  
(Flat) Twin lead 300 Ω cable  
300–75 Ω transformer  
To this unit's RF IN terminal

#### ■ A twin lead and a coaxial cable

from the antenna  
(Flat) Twin lead 300 Ω cable  
VHF/UHF band mixer  
(Round) 75 Ω coaxial cable  
To this unit's RF IN terminal

#### ■ Two twin leads

from the antenna  
(Flat) Twin lead 300 Ω cable  
VHF/UHF band mixer  
300–75 Ω transformer  
To this unit's RF IN terminal

#### Other antenna connections from the unit to the television

Use one of the following connections to suit the antenna terminals on your television. Refer to the television's operating instructions.

#### ■ A twin lead and coaxial plug terminal

VHF/UHF band separator  
75 Ω coaxial cable  
VHF  
UHF  
Television

#### ■ A twin lead terminal

75–300 Ω transformer  
75 Ω coaxial cable  
VHF or UHF  
Television

#### ■ Two twin lead terminals

VHF/UHF band separator  
75 Ω coaxial cable  
VHF  
UHF  
Television

#### ■ Multiple antenna terminals

- Connect to one of the ANT terminals, then change the television's setting as necessary.

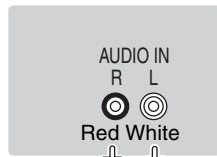
Split out  
ANT 1  
75 Ω coaxial cable  
Television  
ANT 2



## Connecting an amplifier or system component

### ■ Connection to a stereo amplifier

#### Amplifier's rear panel



Audio cable

Optical digital audio cable  
Do not bend sharply when connecting.

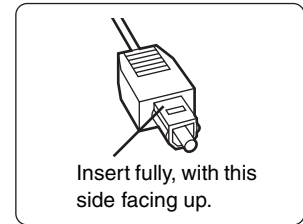
### ■ To enjoy multi-channel surround sound on DVD-Video

Connect an amplifier with a built-in decoder displaying these logo marks using an optical digital audio cable and change the settings in Digital Audio Output (→ page 37).

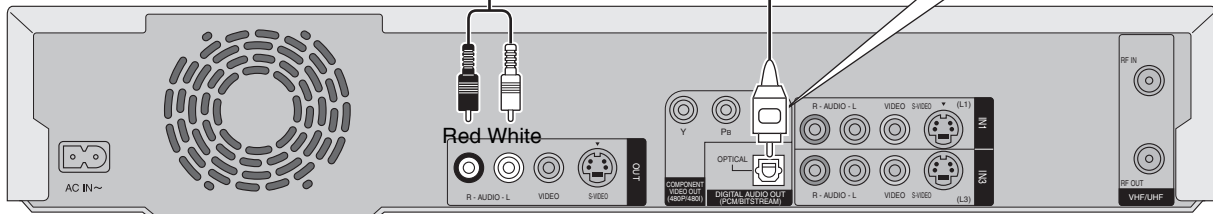


- You cannot use DTS Digital Surround decoders not suited to DVD.
- Even if using this connection, output will be only 2 channels when playing DVD-Audio.

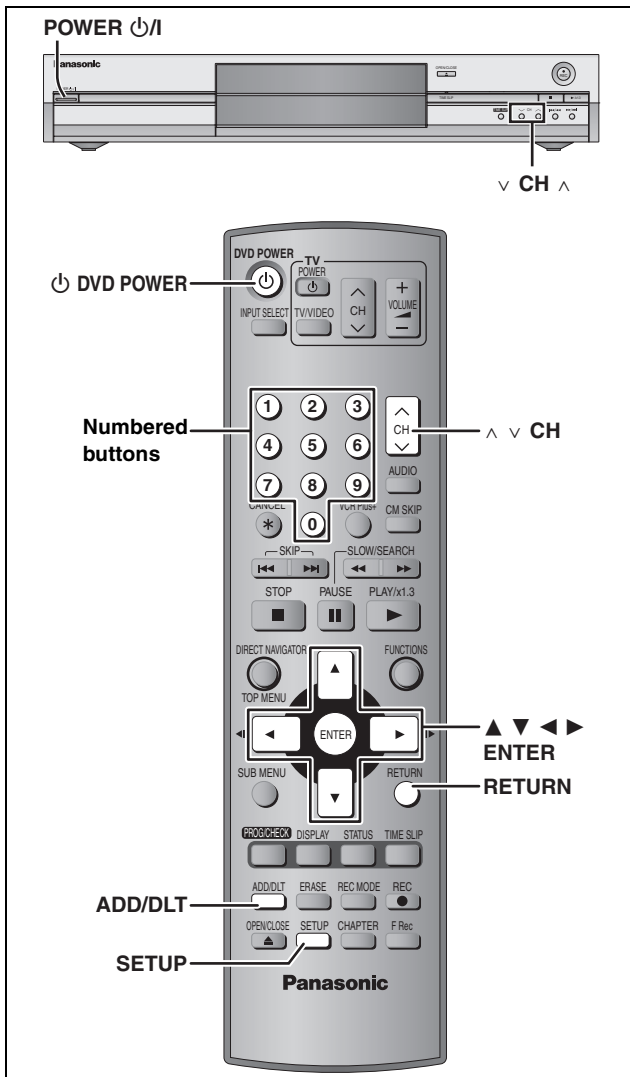
#### Amplifier's rear panel



This unit



## STEP 2 Plug-in Auto Tuning



After plugging the unit into your household AC outlet and pressing [DVD 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.

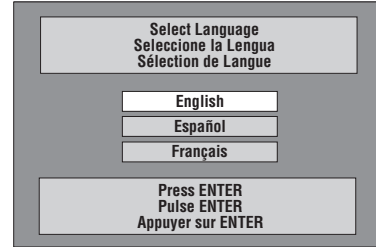
The unit automatically determines the type of transmission (airwaves or cable) and puts them into channels as follows.

	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

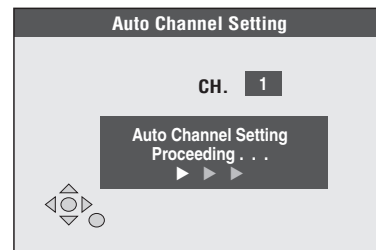
- Turn on the television and select the appropriate video input to suit the connections to this unit.
- If you connect the unit through a cable TV box or satellite receiver (→ page 8), tune to your local PBS for Auto Clock Setting to work. If there is no local PBS, set the clock manually (→ page 38, Manual Clock Setting).

### 1 Press [DVD POWER].

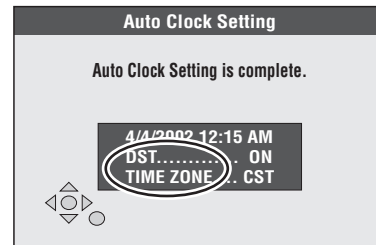


### 2 Press [▲, ▼] to select the language and press [ENTER].

### 3 Press [ENTER] to start Plug-in Auto Tuning.



The unit then proceeds with Auto Clock Setting. The time is displayed when finished.



- 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

### 4 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 (→ page 38).

### ■ If the unit couldn't set the clock automatically

Set the time manually (→ page 38, Manual Clock Setting).

### ■ To start Plug-in Auto Tuning again (after relocation, for example)

Antenna system, channel caption, and VCR Plus+ guide channel settings all revert to the default values when you perform the procedure below. Timer recording settings are also cleared.

When the unit is on and stopped

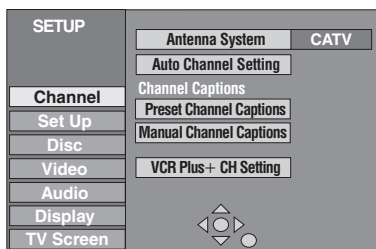
- 1 Press and hold [V CH] and [^ CH] on the main unit for about five seconds.

The unit turns off.

- 2 Press [D DVD POWER] to turn the unit on.

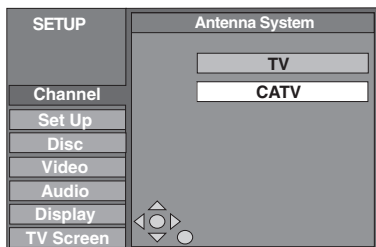
#### If Plug-in Auto Tuning fails

### 1 Press [SETUP].



### 2 Press [▲, ▼] to select “Channel” and press [▶].

### 3 Press [▲, ▼] to select “Antenna System” and press [ENTER].



### 4 Press [▲, ▼] to select “TV” or “CATV” and press [ENTER].

### 5 Press [▲, ▼] to select “Auto Channel Setting” and press [ENTER].

### 6 Press [ENTER].

Auto Channel Setting starts. This takes a few minutes.

### 7 Press [ENTER].

#### To cancel partway

Press [RETURN].

#### To exit the screen

Press [SETUP].

#### Adding and deleting channels

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

### 1 Press the numbered buttons to select a channel.

#### TV Mode (Airwaves)

e.g., 5: [0] → [5]

15: [1] → [5]

#### CATV Mode (Cable)

e.g., 5: [0] → [0] → [5]

15: [0] → [1] → [5]

115: [1] → [1] → [5]

Unit's display



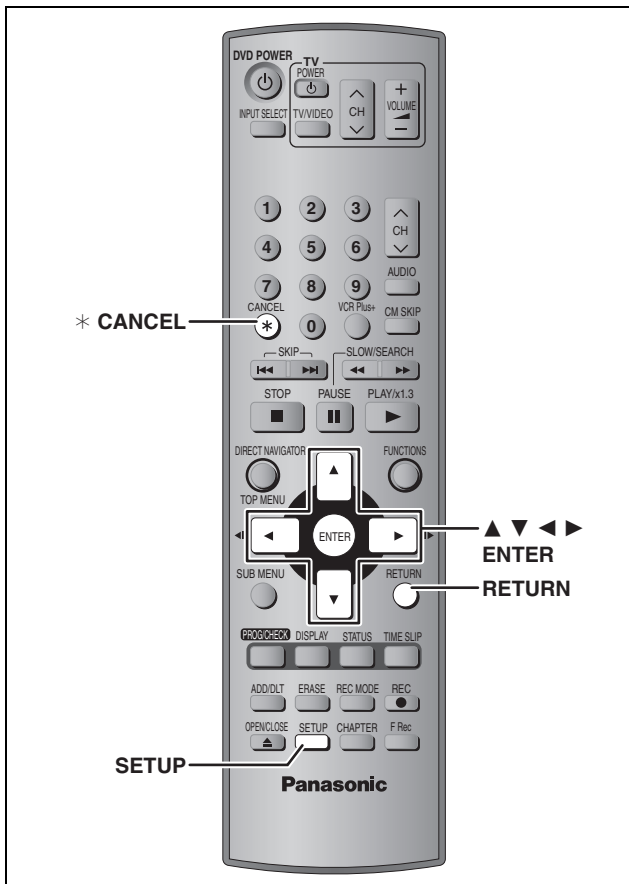
- You can also use [^ v CH] when you are going to delete a channel.

### 2 Press [ADD/DLT].

e.g., The channel is deleted.

CHANNEL 15 DELETED

## STEP 3 Channel settings



### 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.

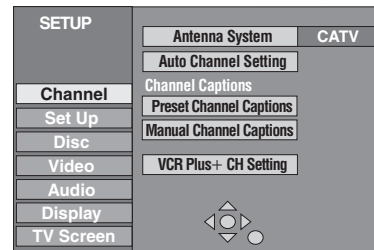
e.g.,

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.

- 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.

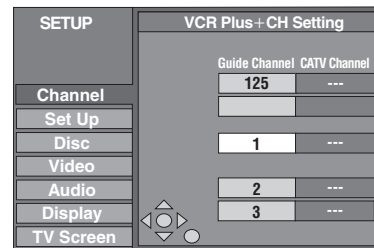
**1** Press [SETUP].



**2** Press [▲, ▼] to select “Channel” and press [▶].

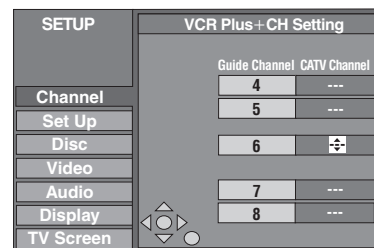
**3** Press [▲, ▼] to select “VCR Plus+ CH Setting” and press [ENTER].

e.g., “Antenna System” is set to “CATV”.



**4** 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.



**5** Press [▲, ▼] to select the channel corresponding to the guide channel and press [◀].

To delete a number, press [\* CANCEL].

Repeat steps 4 and 5 to enter other channels.

**6** Press [ENTER].

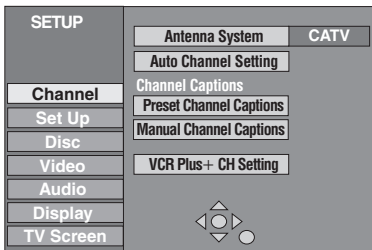
**To exit the screen**  
Press [SETUP].

**To return to the previous screen**  
Press [RETURN].

## Channel captions

You can give the preset captions, or manually enter new ones yourself. The captions you enter are displayed when the channel is displayed and in the Direct Navigator screen.

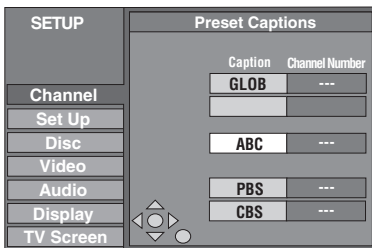
### 1 Press [SETUP].



### 2 Press [▲, ▼] to select “Channel” and press [▶].

#### Preset Channel Captions

### 3 Press [▲, ▼] to select “Preset Channel Captions” and press [ENTER].



### 4 Press [▲, ▼] to select the caption and press [▶].

You can choose from the following captions.

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

- When selecting the caption, press and hold [▲, ▼] to scroll up and down the screen.

### 5 Press [▲, ▼] to select the channel corresponding to the caption and press [◀].

- Channels are only displayed if they contain a station and if captions have not been added manually.
- To delete the channel number, press [\* CANCEL].

Repeat steps 4 and 5 to enter other channels.

### 6 Press [ENTER].

#### Manual Channel Captions

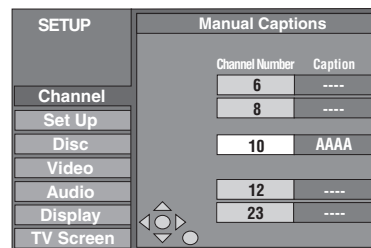
### 3 Press [▲, ▼] to select “Manual Channel Captions” and press [ENTER].

### 4 Press [▲, ▼] to select the channel and press [▶].

- Channels are only displayed if they contain a station and if preset captions have not been added.

### 5 Press [▲, ▼] to select the first character and press [▶].

- You can choose from the following characters:  
A–Z, 0–9, -, &, !, /, (space)
- To delete the caption, press [\* CANCEL].
- Repeat this step to enter the other characters.



### 6 Press [◀, ▶] to return to the “Channel Number” column.

Repeat steps 4–6 to enter other channels.

### 7 Press [ENTER].

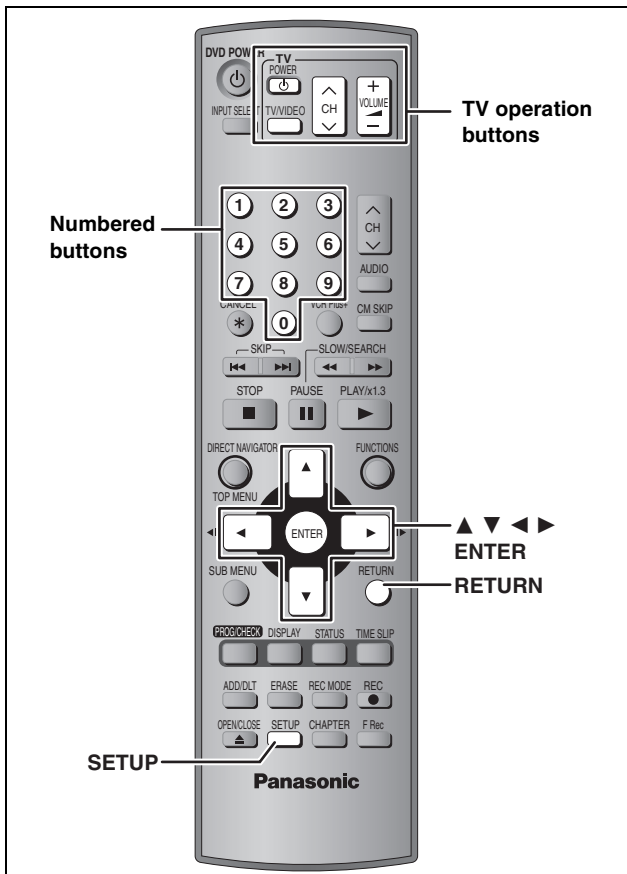
#### To exit the screen

Press [SETUP].

#### To return to the previous screen

Press [RETURN].

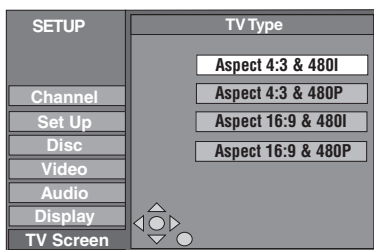
# STEP 4 Set up to match your television and remote control



## Selecting television type

You do not have to change the setting when connected to a 4:3 standard aspect television that is not compatible with progressive output (→ page 40).

- 1 Press [SETUP].
- 2 Press [▲, ▼] to select “TV Screen” and press [▶].
- 3 Press [▲, ▼] to select “TV Type” and press [ENTER].



● Aspect 4:3/Aspect 16:9:



4:3 standard aspect television      16:9 widescreen television

● 480P/480i:

Select “480P” if the television is compatible with progressive output.

- 4 Press [▲, ▼] to select the item and press [ENTER].

## Television operation

You can configure the remote control TV operation buttons to turn the television on/off, change the television input mode, select the television channel and change the television volume.

Point the remote control at the television

**While pressing [POWER TV], enter the code with the numbered buttons.**

e.g., 01: [0] → [1]

Manufacturer and Code No.

Panasonic		PHILIPS (RC-5)	03
National	01, 02	RCA	05
QUASAR		SAMSUNG	14, 18, 19
FISHER	10	SANYO	10
GE	05	SHARP	06, 07
GOLDSTAR	15, 16, 17	SONY	08
HITACHI	12	SYLVANIA	03
JVC	11	THOMSON	05
LG	15, 16, 17	TOSHIBA	09
MAGNAVOX	03	ZENITH	04
mitsubishi	13		

Test by turning on the television and changing channels. Repeat the procedure until you find the code that allows correct operation.

- If your television brand is not listed or if the code listed for your television does not allow control of your television, this remote control is not compatible with your television.

## When other Panasonic products respond to this remote control

Change the remote control code on the main unit and the remote control (the two must match) if you place other Panasonic products close together.

Use “1”, the factory set code, under normal circumstances.

- 1 Press [SETUP].
- 2 Press [▲, ▼] to select “Set Up” and press [▶].
- 3 Press [▲, ▼] to select “Remote Control Code” and press [ENTER].
- 4 Press [▲, ▼] to select the code (1, 2, or 3) and press [ENTER].



- 5 While pressing [ENTER], press and hold the numbered button ([1], [2] or [3]) for more than 2 seconds.
- 6 Press [ENTER].

■ When the following indicator appears on the unit's display



The unit's remote control code

Change the code on the remote control to match the main unit's (→ step 5).



**To exit the screen**

Press [SETUP].

**To return to the previous screen**

Press [RETURN].

## Discs you can use for recording and play (12 cm/8 cm)

Disc type	Logo	Instructions
<b>DVD-RAM</b> ● 4.7 GB/9.4 GB, 12 cm (5") ● 2.8 GB, 8 cm (3") Indicated in these instructions with <b>RAM</b>		<b>Re-writable discs</b> ● You can record up to 16 hours [in EP (8H) mode on double-sided disc. You cannot record or play continuously on two sides.] (⇒ page 17, Recording modes and approximate recording times). ● You can perform chasing playback (⇒ page 17). ● Scratch and dust resistant cartridge discs and large capacity double sided discs (9.4GB) are commercially available. ● You can record digital broadcasts that allow "One time only recording" when using CPRM (Content Protection for Recordable Media) compatible discs (⇒ page 40).
<b>DVD-R</b> ● 4.7 GB, 12 cm (5"), 1.4 GB, 8 cm (3") for General Ver. 2.0 ● 4.7 GB, 12 cm (5") for General Ver. 2.0/4×-SPEED DVD-R Revision 1.0 <b>DVD-R</b>		<b>One time recording discs (recordable until the disc is full)</b> ● You can record up to 8 hours [in EP (8H) mode]. ● By finalizing the disc, you can play it in a DVD player as DVD-Video (Play only) (⇒ page 33, 40). ● You cannot record digital broadcasts that allow "One time only recording". ● This unit is compatible with 1×–4× recording speed discs.

● We recommend using Panasonic discs. DVD-R from other manufacturers may not be recorded or played due to the condition of the recording.

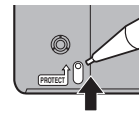
### ■ Which should I use, DVD-RAM or DVD-R?

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





(○:Possible, ×:Impossible)	DVD-RAM	DVD-R
Re-writable	○	×
Edit	○	※1
Play on other players	○※2	○※3
Recording both Main and SAP of MTS broadcast	○	×※4
Recording broadcasts that allow one copy	○※5	×
Recording 16:9 aspect picture	○	※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 (⇒ page 33, 40).
- ※4 Only one is recorded (⇒ page 37, Select MTS).
- ※5 CPRM (⇒ page 40) compatible discs only.
- ※6 The picture is recorded in 4:3 aspect.

■ **Protection RAM** (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.



## Play-only discs (12 cm/8 cm)

Disc type	Logo	Instructions
<b>DVD-Audio</b> <b>DVD-A</b>		High fidelity music discs ● Played on this unit in 2 channels.
<b>DVD-Video</b> <b>DVD-V</b>		High quality movie and music discs
<b>Video CD</b> <b>VCD</b>		Music and video recorded (including CD-R/RW)
<b>Audio CD</b> <b>CD</b>		Music and audio recorded (including CD-R/RW)
	—	CD-R and CD-RW with music recorded in MP3 (⇒ page 25)

- This unit plays CD-R/CD-RW (audio recording discs). Close the sessions or finalize the disc after recording. Play may be impossible on some CD-R or CD-RW discs due to the condition of the recording.
- The producer of the material can control how discs are played. So you may not always be able to control play as described in these operating instructions. Read the disc's instructions carefully.

## 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 (⇒ page 40, Finalize)
- 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.

## 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.

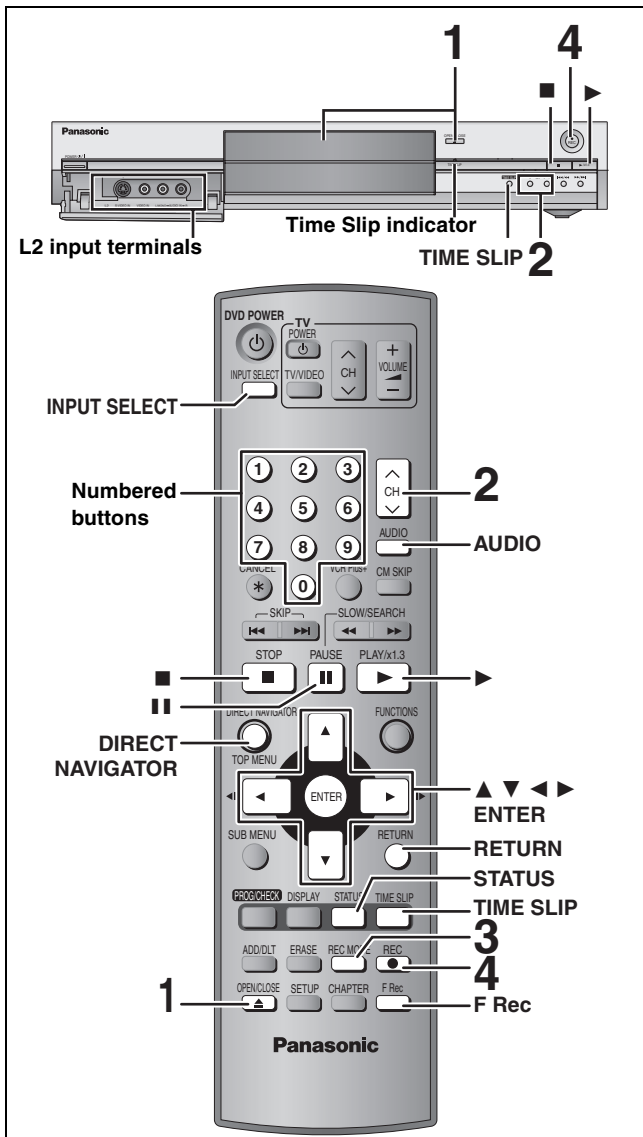


### ■ Handling precautions

- 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, benzene, thinner, static electricity prevention liquids or any other solvent.
- Do not use scratch-proof protectors or covers.
- Do not use the following discs:
  - Discs 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.

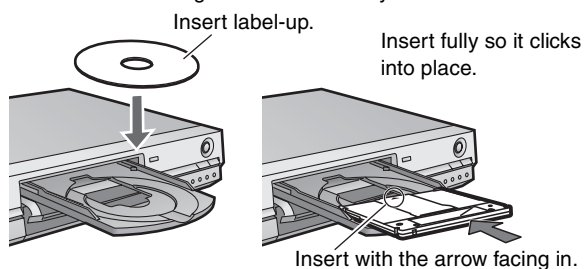


### RAM DVD-R

- 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.
- It is not possible to record CPRM (→ page 40) protected material onto DVD-R or 2.8 GB DVD-RAM discs.

## 1 Press [▲ OPEN/CLOSE] to open the tray and insert a disc.

- Press the button again to close the tray.



## 2 Press [^ v CH] to select the channel.



To select with the numbered buttons:

### TV Mode (Airwaves)

e.g., 5: [0] → [5]  
15: [1] → [5]

### CATV Mode (Cable)

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

- Select the audio to record (→ page 17).

## 3 Press [REC MODE] to select the recording mode (XP, SP, LP, or EP).



Remaining time on the disc

## 4 Press [● REC] to start recording.



Recording will take place on open space on disc. Data will not be overwritten.

- You cannot change the channel or recording mode during recording.

### ■ To stop recording

Press [■].

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 [II].

Press again to restart recording.

(Title is not split into a separate title.)

### ■ To specify a time to stop recording

During recording

Press [● REC] to select the recording time.

Each time you press the button:

0:30 → 1:00 → 1:30 → 2:00 → 3:00 → 4:00  
 ↑ Counter (cancel) ↓

- This does not work during timer recordings (→ page 19) or while using Flexible Recording (→ page 18).

### Off Timer

The unit switches to standby after about 6 hours in the stop mode.

You can turn this feature off or change the time to 2 hours

(→ page 36, "Off Timer").

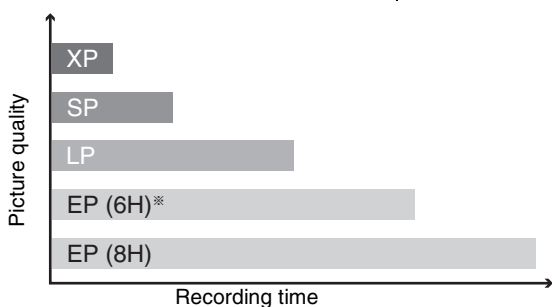


## Recording modes and approximate recording times

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

(Unit: hour)

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



\* When "Recording Time in EP Mode" is set to "EP (6H)" in the SETUP menu. The sound quality is better when using "EP (6H)" than when using "EP (8H)".

### Note

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.

### FR (Flexible Recording Mode)

The unit automatically selects a recording rate between XP and EP (8H) 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.

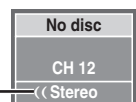


## Selecting audio to record

### RAM

Press [AUDIO].

- **Stereo:** Main audio (stereo)
  - If the broadcast is "Mono+SAP", audio will be monaural even if you select Stereo mode.
- ↓
- SAP:** Secondary audio program (SAP)
  - If recorded in SAP mode, main audio is also recorded.
- ↓
- Mono:** Main audio (monaural)
  - Select "Mono" if reception is poor during a stereo broadcast.



e.g., "Stereo" is selected ("(" appears when the unit is receiving the audio type you selected).

- If you change the sound setting while recording, the recorded sound will also change.

### DVD-R

Select the audio (Main or SAP) in "Select MTS" in the SETUP menu (→ page 37).

## Playing while you are recording

### RAM

Playing from the beginning of the title you are recording—Chasing playback

Press [▶] (PLAY).

Time Slip indicator on the main unit lights.

Playing a title previously recorded while recording—Simultaneous rec and play

1 Press [DIRECT NAVIGATOR].

2 Press [▲, ▼, ◀, ▶] to select a title and press [ENTER].

Time Slip indicator on the main unit lights.

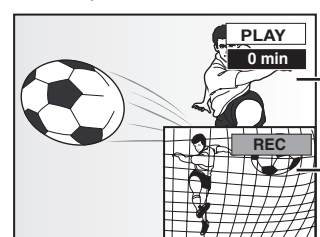
To exit the Direct Navigator screen

Press [DIRECT NAVIGATOR].

Reviewing the recorded images while recording—Time Slip

1 Press [TIME SLIP].

Time Slip indicator on the main unit lights.



Play starts from 30 seconds previous.

The current recording images

- You will hear the playback audio.

2 Press [▲, ▼] to select the time and press [ENTER].

- Press [TIME SLIP] to show the play images in full. Press again to show the play and recording images.

■ To stop play

Press [■].

■ To stop recording

2 seconds after play stops

Press [■].

■ To stop timer recording

Press [■], then [ENTER] within 5 seconds.

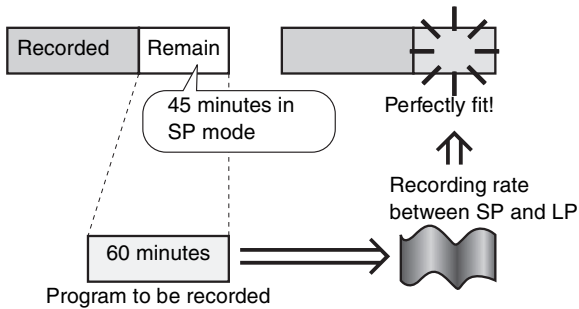
- You can also press and hold [■] on the main unit for more than 3 seconds to stop recording.

Refer to the control reference on page 16.

## Flexible Recording

RAM DVD-R

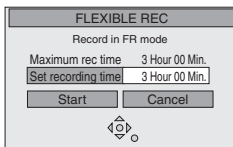
The unit sets the best possible picture quality that fits the recording within the remaining disc space.  
e.g.,



### Preparation

Select the channel to record.

- 1 While stopped  
Press [F Rec].



- 2 Press [◀, ▶] to select "Hour" and "Min." and press [▲, ▼] to set the recording time.

- You can also set the recording time with the numbered buttons.

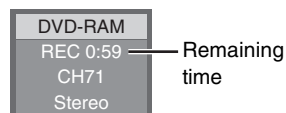
- 3 When you want to start recording  
Press [▲, ▼, ▶, ▶] to select "Start" and press [ENTER].

- Recording starts.
- The recording mode becomes FR mode.

To exit the FLEXIBLE REC window without recording  
Press [RETURN].

To stop recording partway  
Press [■].

To show the remaining time  
Press [STATUS].



## Recording from a video cassette recorder

RAM DVD-R

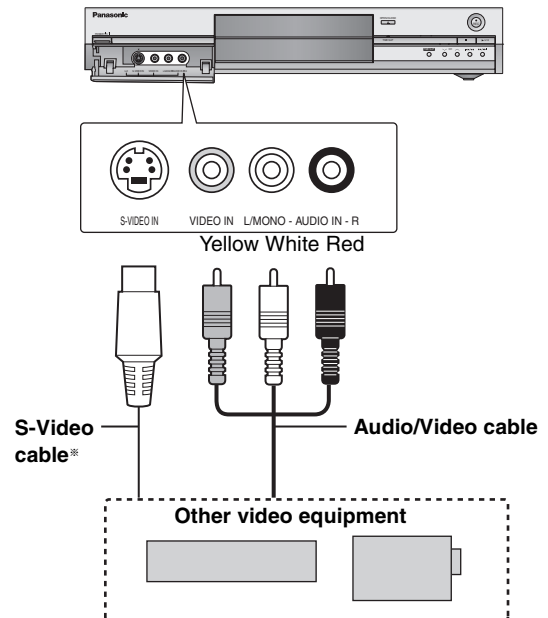
### Preparation

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

### Note

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.

e.g.: Connecting to the L2 input terminals



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.

- 1 While stopped  
Press [INPUT SELECT] to select the input channel for the equipment you have connected.

- 2 Press [REC MODE] to select the recording mode (XP, SP, LP or EP).

- Using Flexible Recording (↔ left), 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.

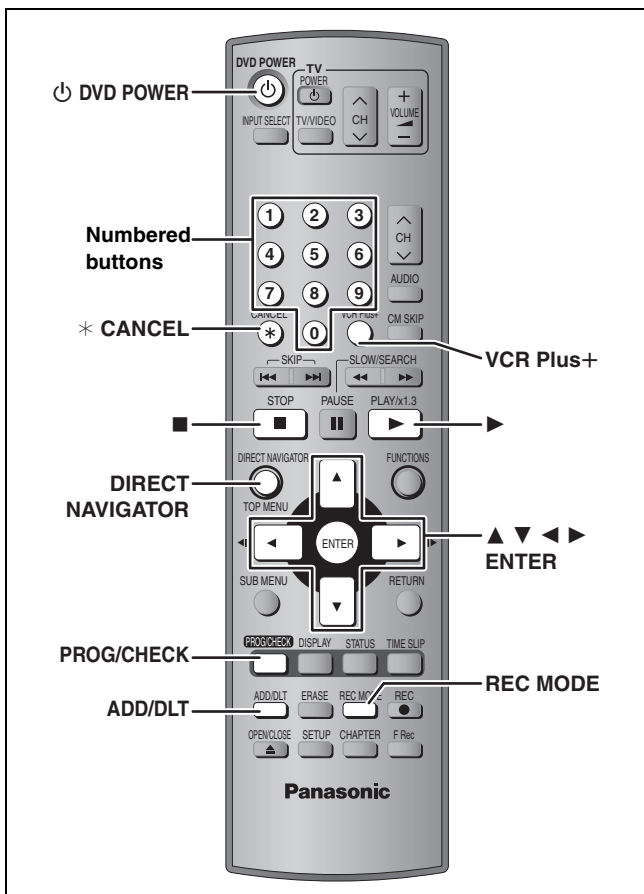
### To skip unwanted parts

Press [■] to pause recording. (Press again to restart recording.)

### To stop recording

Press [■].

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.



**RAM DVD-R**

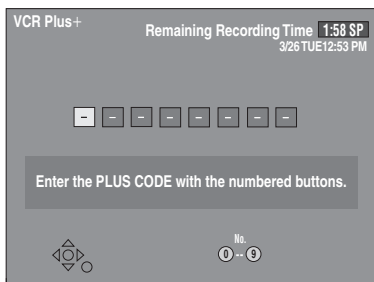
You can enter up to 16 programs up to a month in advance.

- When connecting a cable TV box or satellite receiver, the VCR Plus+ system does not work. Program the timer recording manually and select the channel on the cable TV box or satellite receiver before the timer recording starts.

## Using VCR Plus+ number to make timer recordings

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

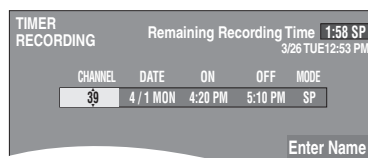
### 1 Press [VCR Plus+].



### 2 Press the numbered buttons to enter the VCR Plus+ number.

Press [◀] to move back to correct a digit.

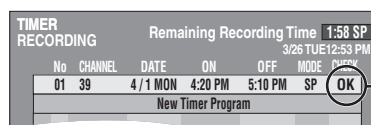
### 3 Press [ENTER].



- 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 [▲, ▼, ◀, ▶] (⇒ page 20, step 3).
- You can also press [REC MODE] to change the recording mode.
- **Enter Name**  
Press [◀, ▶] to select "Enter Name" and press [ENTER] (⇒ page 34).

### 4 Press [ENTER].

The settings are stored.



Check to make sure "OK" is displayed.

Repeat steps 1–4 to program other recordings.

### 5 Press [PROG/CHECK].

The message "TURN RECORDER OFF FOR TIMER RECORDING." is shown on the television.

### 6 Press [DVD POWER].

The unit turns off and "Ⓞ" lights on the unit's display to indicate timer recording standby has been activated.

**RAM**

- Even if the unit is in timer recording standby, you can play the disc. Without pressing [DVD POWER], just press [▶] (PLAY) or [DIRECT NAVIGATOR]. Timer recording works even during play.

#### ■ To release the unit from recording standby

Press [DVD POWER].

The unit turns on and "Ⓞ" goes out.

- Be sure to press [DVD POWER] to return the unit to standby mode before the scheduled recording time. Timer recording will work only if "Ⓞ" is displayed.

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

Press [■], then [ENTER] within 5 seconds.

- You can also press and hold [■] on the main unit for more than 3 seconds to stop recording.

**Note**

- "Ⓞ" flashes when the unit cannot go to timer recording standby (e.g., a recordable disc is not in the disc tray).
- The actual time recorded may be longer than the program itself when television programs are recorded using VCR Plus+.
- 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 set DST (Daylight Saving Time) to ON when manually setting the clock (⇒ page 38), timer recording may not work when summer switches to winter and vice versa.

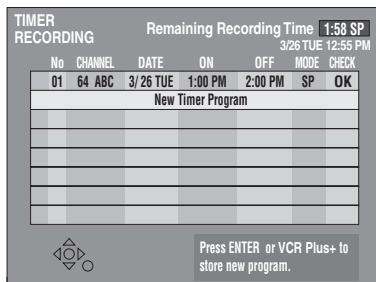
Refer to the control reference on page 19.

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 the timer recording starts.

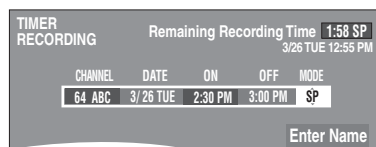
## Manually programming timer recordings

### 1 Press [PROG/CHECK].



### 2 Press [▲, ▼] to select “New Timer Program” and press [ENTER].

### 3 Press [▶] to move through the items and change the items with [▲, ▼].



- Press and hold [▲, ▼] to alter ON (Start time) and OFF (Finish time) in 30-minute increments.
- You can also set CHANNEL, DATE, ON (Start time), and OFF (Finish time) with the numbered buttons.
- You can also press [REC MODE] to change the recording mode.

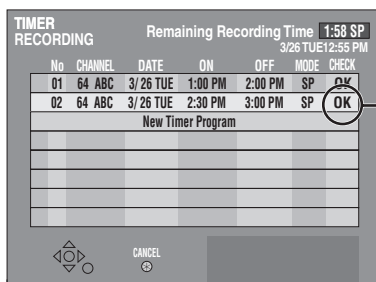
#### •DATE

- Date: Current date up to one month later minus one day
- ↓ ↑
- Daily timer: SUN-SAT → MON-SAT → MON-FRI
- ↓ ↑
- Weekly timer: WEEKLY SUN → --- → WEEKLY SAT

#### •Enter Name

- Press [◀, ▶] to select “Enter Name” and press [ENTER] (→ page 34).

### 4 Press [ENTER].



Repeat steps 2–4 to program other recordings.

### 5 Press [PROG/CHECK].

The message “TURN RECORDER OFF FOR TIMER RECORDING.” is shown on the television.

### 6 Press [⏻ DVD POWER].

The unit turns off and “⏻” lights on the unit’s display to indicate timer recording standby has been activated.

#### RAM

- Even if the unit is in timer recording standby, you can play the disc. Without pressing [⏻ DVD POWER], just press [▶] (PLAY) or [DIRECT NAVIGATOR]. Timer recording works even during play.

#### ■ To release the unit from recording standby

Press [⏻ DVD POWER].

The unit turns on and “⏻” goes out.

- Be sure to press [⏻ DVD POWER] to return the unit to standby mode before the scheduled recording time. Timer recording will work only if “⏻” is displayed.

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

Press [■], then [ENTER] within 5 seconds.

- You can also press and hold [■] on the main unit for more than 3 seconds to stop recording.

#### Note

- “⏻” flashes when the unit cannot go to timer recording standby (e.g., a recordable disc is not in the disc tray).
- 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 set DST (Daylight Saving Time) to ON when manually setting the clock (→ page 38), timer recording may not work when summer switches to winter and vice versa.

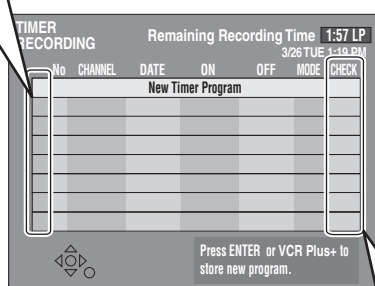
## Check, change or delete a program

- Even when the unit is turned off, you can display the timer recording list by pressing [PROG/CHECK].

### 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 no more space left
  - the number of possible titles has reached its maximum.

#### ■ To change a program

Press [▲, ▼] to select the program and press [ENTER].  
(→ page 20, step 3)

#### ■ To delete a program

Press [▲, ▼] to select the program and press [\* CANCEL] or [ADD/DLT].

#### ■ To exit the timer recording list

Press [PROG/CHECK].

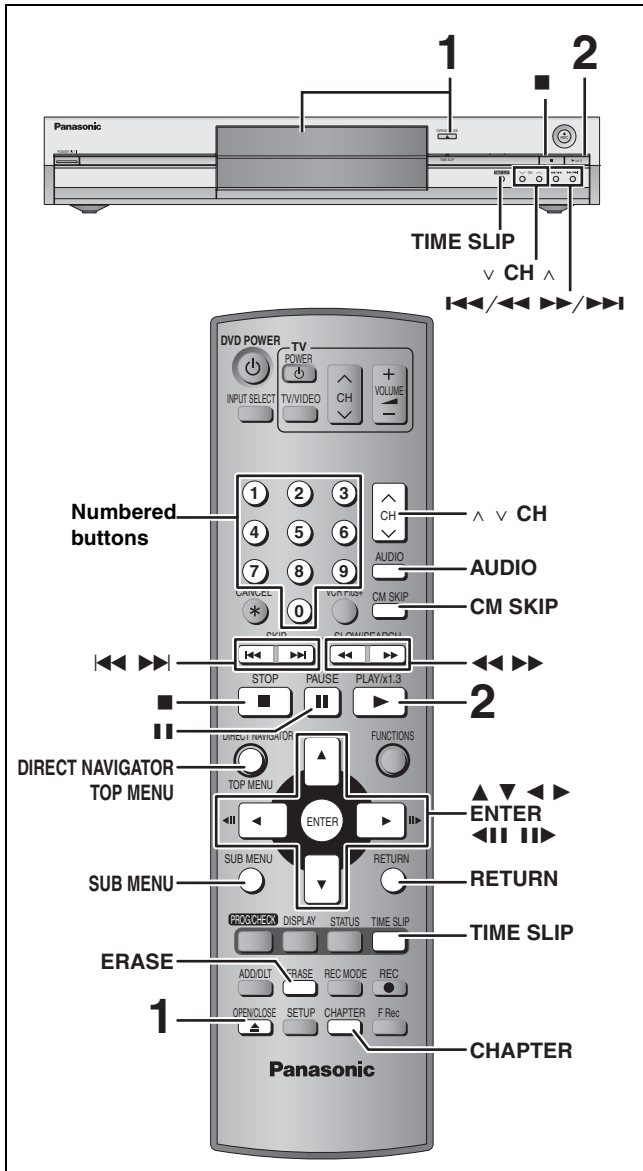
The message "TURN RECORDER OFF FOR TIMER RECORDING." is shown on the television.

#### ■ To put the unit on timer recording standby

Press [⏻ DVD POWER].

The unit turns off and "Ⓞ" lights on the unit's display to indicate timer recording standby has been activated.

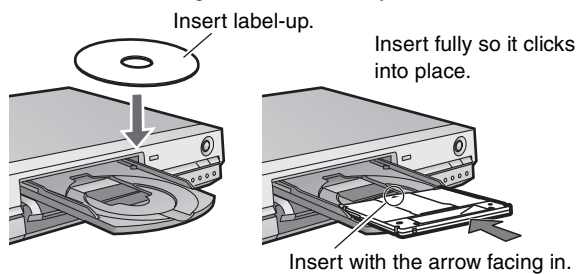
- Programs that failed to record are displayed gray. They are automatically deleted from the timer recording list at 4 a.m. two days later.
- During timer recording, you can change the end time as long as the recording mode is not "FR".



- 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] to open the tray and insert a disc.

- Press the button again to close the tray.



## 2 Press [▶] (PLAY).

**RAM DVD-R**

Play starts from the most recently recorded title.

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

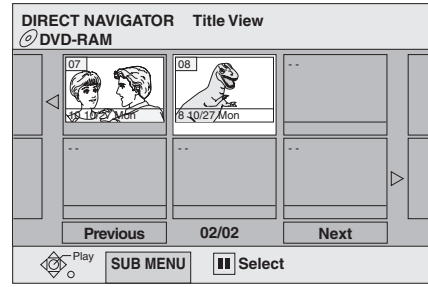
Play starts from the beginning of the disc.



### ■ 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 numbered buttons.  
e.g., 5: [0] ⇒ [5] 15: [1] ⇒ [5]

#### To exit the screen

Press [DIRECT NAVIGATOR].

#### Direct Navigator screen icons

- Title protected.
- Title that was not recorded due to recording protection (Digital broadcasts etc.)
- Title cannot be played because data is damaged.
- Currently recording.

### ■ When a menu screen appears on the television

**DVD-A DVD-V**

Press [▲, ▼, ◀, ▶] to select the item and press [ENTER].

Some items can also be selected using the numbered buttons.

**VCD**

Press the numbered buttons to select the item.

e.g., 5: [0] ⇒ [5] 15: [1] ⇒ [5]



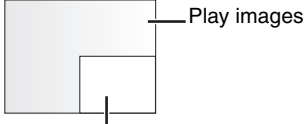
#### • To return to the menu screen

**DVD-A** Press [TOP MENU].

**DVD-V** Press [TOP MENU] or [SUB MENU].

**VCD** Press [RETURN].

## Operations during play

<p>Stop</p>	<p><b>Press [■].</b> The stopped position is memorized. “PLAY” flashes in the unit’s display. (Excluding when playing from the Direct Navigator and when playing a play list.) <b>Resume play function</b> Press [▶] (PLAY) to restart from this position.</p>	
<p>Pause</p>	<p><b>Press [⏸].</b> Press again to restart play.</p>	
<p>Search</p>	<p><b>Press [◀◀] or [▶▶].</b></p> <ul style="list-style-type: none"> <li>•On the main unit, press and hold [◀◀/▶▶] or [▶▶/▶▶].</li> <li>•The speed increases up to 5 steps.</li> <li>•Press [▶] (PLAY) to restart play.</li> <li>•Audio is heard during first level search forward. You can turn off the sound during search (⇒ page 37, “Search Audio &amp; PLAY ×1.3”). Audio is heard during all level of search. <b>DVD-A</b> (excluding moving picture parts) <b>CD</b></li> </ul>	
<p>Skip</p>	<p><b>Press [◀◀] or [▶▶].</b></p> <ul style="list-style-type: none"> <li>•On the main unit, press [◀◀/▶▶] or [▶▶/▶▶].</li> <li>•Each press increases the number of skips.</li> </ul>	
<p>Starting from a selected item</p>	<p><b>Press the numbered buttons.</b> e.g., 5: [0] ⇒ [5] <b>CD</b> (MP3 discs only) 5: [0] ⇒ [0] ⇒ [5] 15: [1] ⇒ [5] 15: [0] ⇒ [1] ⇒ [5]</p> <p><b>DVD-A</b> Selecting groups While stopped (screen saver is displayed on the television ⇒ right) 5: [5]</p> <ul style="list-style-type: none"> <li>•This works only when stopped (screen saver is displayed on the television ⇒ right) with some discs.</li> </ul>	
<p>Quick View <b>RAM</b> The play speed can be increased without distorting the audio.</p>	<p><b>Press and hold [▶] (PLAY/×1.3).</b></p> <ul style="list-style-type: none"> <li>•Press again to return to normal speed.</li> <li>•This does not work if the setting is “Off” in “Search Audio &amp; PLAY ×1.3” (⇒ page 37).</li> </ul>	
<p>Slow-motion <b>RAM DVD-R DVD-A</b> (Motion picture parts only) <b>DVD-V VCD</b></p>	<p><b>While paused, press [◀◀] or [▶▶].</b></p> <ul style="list-style-type: none"> <li>•On the main unit, press and hold [◀◀/▶▶] or [▶▶/▶▶].</li> <li>•The speed increases up to 5 steps.</li> <li>•Press [▶] (PLAY) to restart play.</li> <li>•Forward direction only. <b>VCD</b></li> <li>•The unit will pause if slow-motion play is continued for 5 minutes.</li> </ul>	
<p>Frame-by-frame <b>RAM DVD-R DVD-A</b> (Motion picture parts only) <b>DVD-V VCD</b></p>	<p><b>While paused, press [◀  ] or [  ▶].</b></p> <ul style="list-style-type: none"> <li>•Each press shows the next frame.</li> <li>•Press [▶] (PLAY) to restart play.</li> <li>•Forward direction only. <b>VCD</b></li> </ul>	
<p>Displaying the television image as a picture-in-picture</p> <p>Skipping the specified time (Time Slip) <b>RAM DVD-R</b></p>	<p><b>Press [TIME SLIP].</b> The unit displays the television image as a picture-in-picture. •You will hear the playback audio. •Press [TIME SLIP] again to cancel. •The blue background does not appear on the receiving screen even if you select “On” from the “Blue Background” in the SETUP menu (⇒ page 37).</p> <p><b>1 Press [TIME SLIP].</b> <b>2 Press [▲, ▼] to select the time and press [ENTER].</b> Play skips the specified time. •Press [TIME SLIP] to show the play images in full.</p>	 <p>Play images</p> <p>Current receiving images</p> <ul style="list-style-type: none"> <li>•You can change the channel being received by pressing [^ v CH].</li> <li>•You cannot change the channel being received while recording.</li> </ul>
<p>CM Skip <b>RAM DVD-R</b> Play restarts from approximately a minute later.</p>	<p><b>Press [CM SKIP].</b></p>	

Refer to the control reference on page 22.

## Editing operations during play

### Erase

RAM DVD-R

- 1 Press [ERASE].
  - 2 Press [◀, ▶] to select "Erase" and press [ENTER].
- A title cannot be restored once it is erased. Make certain before proceeding.
  - You cannot erase when recording and playing at the same time.

### Create chapters

RAM

- Press [CHAPTER].
- Press [◀◀, ▶▶] to skip to the start of a chapter.
  - You cannot divide when recording and playing at the same time.

Playing back

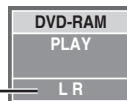
## Changing audio during play

Press [AUDIO].

RAM VCD

LR→L→R  
↑

e.g., "L R" is selected



- When playing a SAP broadcast recorded DVD-RAM:  
MAIN ↔ SAP

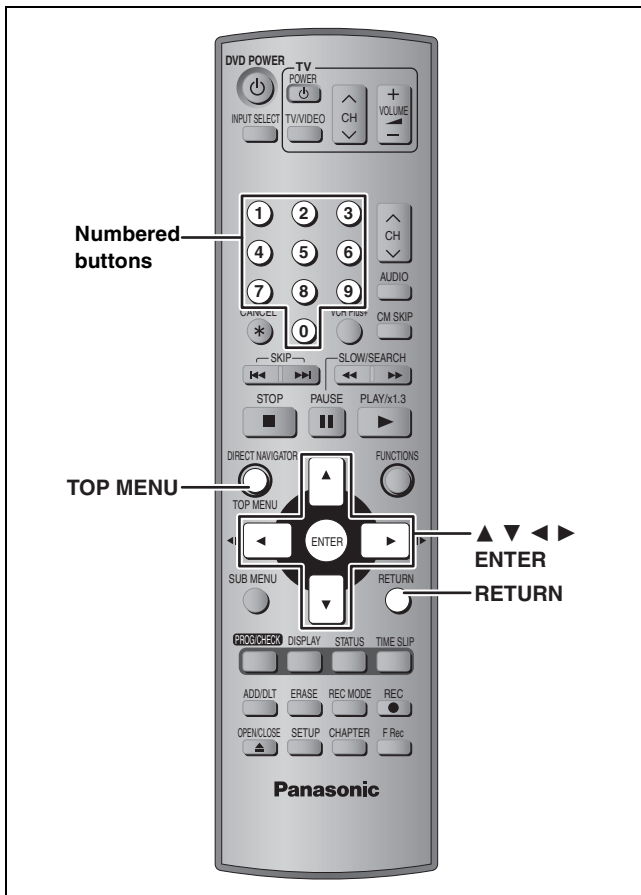
DVD-A DVD-V

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 the selected language (→ page 26, Sound track).



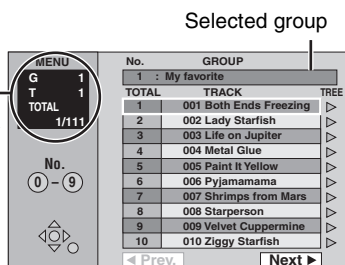


**CD** (MP3 discs only)

This unit plays MP3 files recorded on CD-R/RW designed for audio recording that are finalized (→ page 40) on a computer. Files are treated as tracks and folders are treated as groups.

## 1 Press [TOP MENU].

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



## 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 numbered buttons.

e.g., 5: [0] → [0] → [5]  
 15: [0] → [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 [TOP MENU].

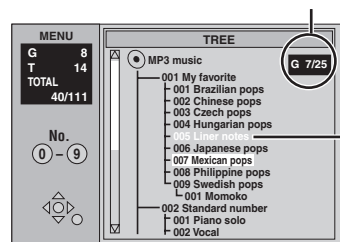
## Using the tree screen to find a group

While the file list is displayed

### 1 Press [▶] while a track is highlighted to display 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.

### 2 Press [▲, ▼, ◀, ▶] to select a group and press [ENTER].

The file list for the group appears.

### To return to the file list

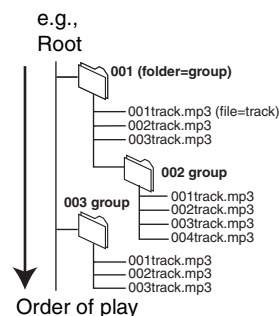
Press [RETURN].

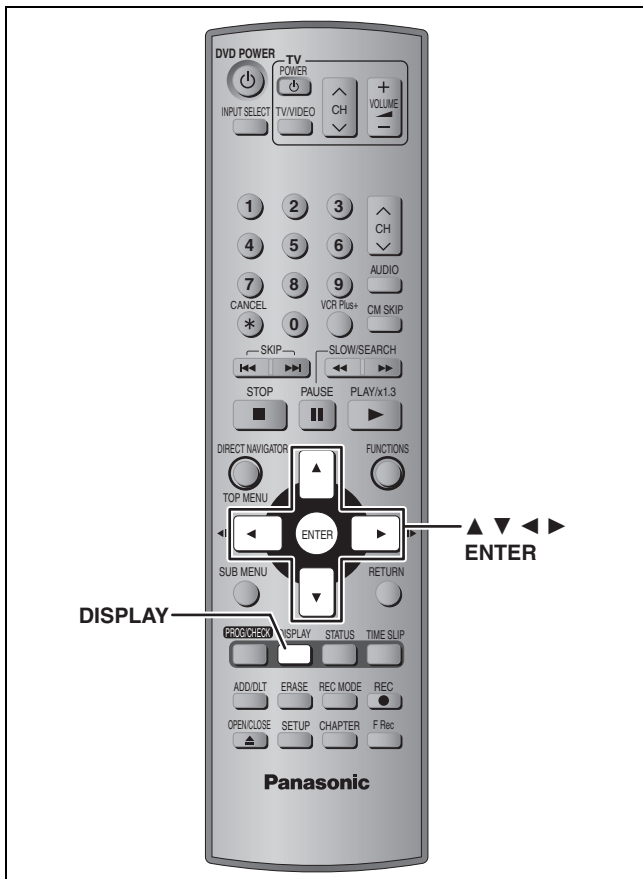
### Tips for making MP3 discs

- 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 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.

### 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.





## Common procedures

### 1 Press [DISPLAY].

Disc	Sound track	1	DD Digital	2/0 ch
Play	Subtitle		OFF	
Video	Audio channel		L R	

Menu      Item      Setting

- Depending on the condition of the unit (playing, stopped, etc.) and disc contents, there are some items that you cannot select or change.

### 2 Press [▲, ▼] to select the menu and press [▶].

### 3 Press [▲, ▼] to select the item and press [▶].

### 4 Press [▲, ▼] to select the setting.

- Some items can be changed by pressing [ENTER].

#### To clear the on-screen menus

Press [DISPLAY].

## Disc menu—Setting disc content

### Sound track\*

**RAM DVD-R**

The disc's audio attributes appear.

**DVD-A DVD-V**

Select the audio and language (Audio attribute, Language → below).

### Subtitle\*

**RAM DVD-R** (Only discs that contain subtitle on/off information)

**DVD-A DVD-V**

Turn the subtitle on/off and select the language.

- Subtitle on/off information cannot be recorded using this unit. **RAM DVD-R**
- If the subtitles overlap closed captions recorded on discs, turn the subtitles off.

### Audio channel **RAM VCD**

→ page 24, Changing audio during play

### Angle\* **DVD-A DVD-V**

### STILL-P (Still picture) **DVD-A**

Selects the play method for still pictures.

**Slide Show:** Plays according to the default order on the disc.

**Page:** Select the still picture number and play.

- **RANDOM:** Plays in random order.
- **Return:** Returns to the default still picture on the disc.

### PBC (Playback control → page 40) **VCD**

Indicates whether menu play (playback control) is on or off.

\* You may have to use the menus (→ page 22) on the disc to change.

- The display changes according to the disc content. You cannot change when there is no recording.

### Audio attribute

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

### 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

## Play menu—Change play sequence

This function works only when the elapsed play time is displayed.

### Repeat play

- All **VCD** **CD** (excluding MP3 discs)
  - Chapter **RAM** **DVD-R** **DVD-V**
  - Group **DVD-A** **CD** (MP3 discs only)
  - PL (Play list) **RAM**
  - Title **RAM** **DVD-R** **DVD-V**
  - Track **DVD-A** **VCD** **CD**
- Select "OFF" to cancel.

## Video menu—Change picture quality

### Picture

- **Normal:** Default setting
- **Soft:** Soft picture with fewer video artifacts
- **Fine:** Details are sharper
- **Cinema:** Mellows movies, enhances detail in dark scenes.

### MPEG-DNR

Reduces noise and picture degradation.

### Progressive\* (⇒ page 40)

Select "ON" to enable progressive output.

- Select "OFF" if the picture is stretched horizontally.
- When progressive output is on, closed captions cannot be displayed.

### Transfer\* (When "Progressive" is set to "ON".)

Select the method of conversion for progressive output to suit the type of material being played (⇒ page 40, Film and video).

- **Auto1 (normal):** Detects 24 frame-per-second film content and appropriately converts it.
- **Auto2:** Compatible with 30 frame-per-second film content in addition to 24 frame-per-second film content.
- **Video:** Select when using Auto1 and Auto2, and the video content is distorted.

\* Only when you have selected "480P" in "TV Type" (⇒ page 14).

## Audio menu—Change sound effect

### V.S.S. **RAM** **DVD-R** **DVD-V**

(Only with Dolby Digital with 2 or more channels)

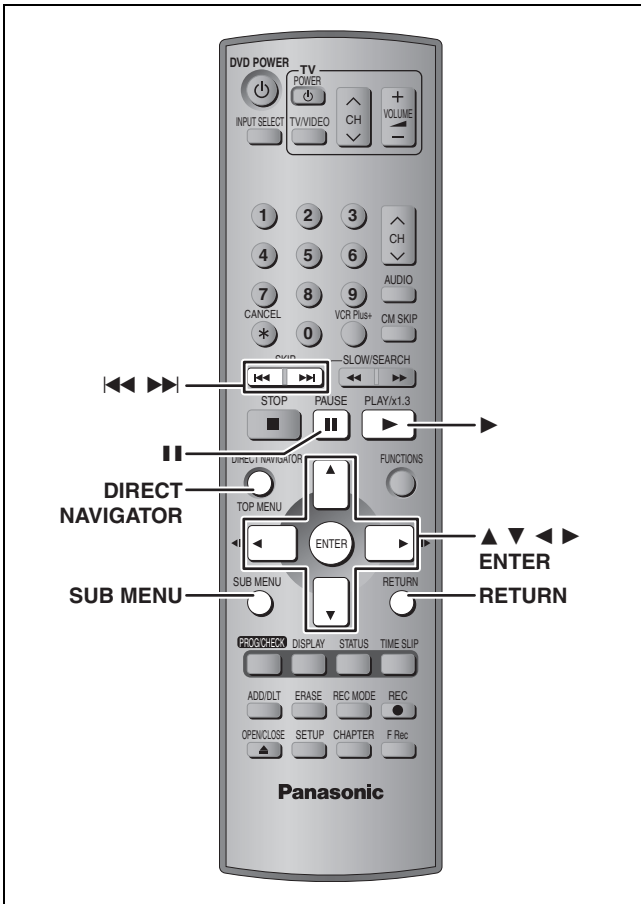
Enjoy a surround-like effect if you are using two front speakers only.

- Turn V.S.S. off if it caused distortion.
- V.S.S. does not work for SAP recordings.

### Dialog Enhancer **DVD-A** **DVD-V**

(Dolby Digital, 3-channel or over only, including a center channel)

The volume of the center channel is raised to make dialog easier to hear.



**RAM DVD-R**

**Title/Chapter**  
 Programs are recorded as a single title consisting of one chapter.

Start End

You can divide a title into multiple chapters. **RAM**  
 (→ page 24, Create chapters, → page 29, Divide Chapter)

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

- Titles are divided into about 5-minute chapters after finalizing (→ page 33). **DVD-R**

- The maximum number of items on a disc:
  - Titles: 99
  - Chapters: Approximately 1000 (Depends on disc contents.)

**Note**

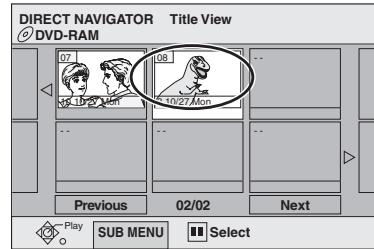
- Once erased or shortened, it cannot be restored to its original state. Make certain before proceeding.
- You cannot edit during recording.

## Editing titles/chapters and playing chapters

**Preparation**

Release protection (cartridge → page 15, disc → page 33). **RAM**

- 1 Press [DIRECT NAVIGATOR].
- 2 Press [▲, ▼, ◀, ▶] to select the title.



**To show other pages**

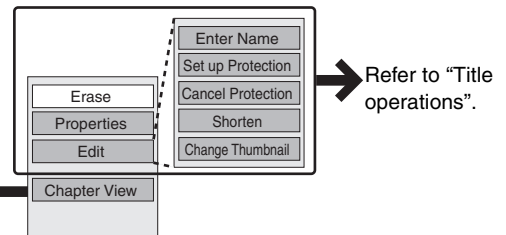
Press [▲, ▼, ◀, ▶] to select “Previous” or “Next” and press [ENTER].

- You can also press [◀◀, ▶▶] to show other pages.

**Multiple editing**

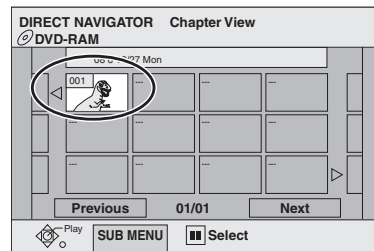
Select with [▲, ▼, ◀, ▶] and press [II]. (Repeat.)  
 A check mark appears. Press [II] again to cancel.

- 3 Press [SUB MENU], then [▲, ▼] to select the operation and press [ENTER].
  - If you select “Edit”, press [▲, ▼] to select the operation and press [ENTER].



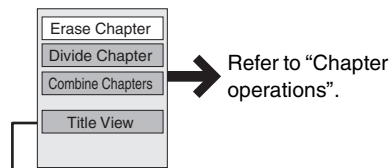
If you select “Chapter View”

- 4 Press [▲, ▼, ◀, ▶] to select the chapter.
  - To start play → Press [ENTER].
  - To edit → Step 5.



•To show other pages/Multiple editing (→ above)

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



•You can go back to the Title View.

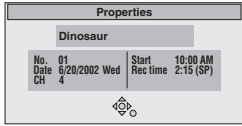
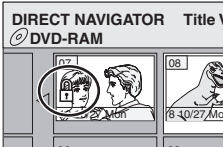
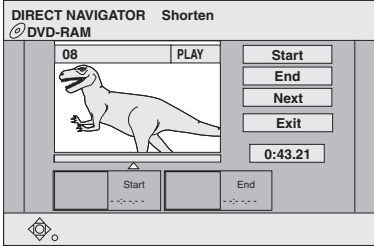
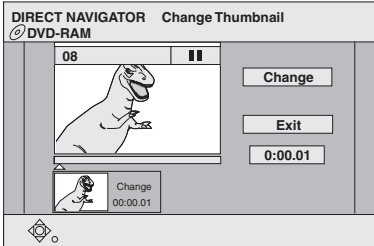
**To exit the screen**

Press [DIRECT NAVIGATOR].

**To return to the previous screen**

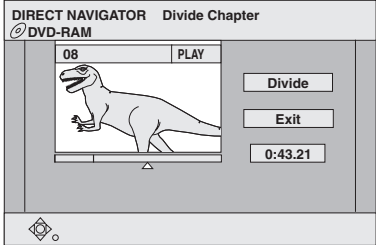
Press [RETURN].

## Title operations

<b>Erase*</b> <b>RAM DVD-R</b>	<p><b>Press [◀, ▶] to select “Erase” and press [ENTER].</b></p> <ul style="list-style-type: none"> <li>The available recording time on DVD-R does not increase when you erase titles.</li> </ul>
<b>Properties</b> <b>RAM DVD-R</b>	<p>Information (e.g., time and date) is shown.</p> 
<b>Enter Name</b> <b>RAM DVD-R</b>	<p>→ page 34, Entering text</p>
<b>Set up Protection*</b> <b>Cancel Protection*</b> <b>RAM</b>	<p>If set, this will protect the title from accidental erasure.</p> <p><b>Press [◀, ▶] to select “Yes” and press [ENTER].</b></p> <p>The lock symbol appears when the title is protected.</p> 
<b>Shorten</b> <b>RAM</b>	<p>You can remove unnecessary part of the recording such as commercials.</p> <ol style="list-style-type: none"> <li><b>Press [ENTER] at the start point and end point of the section you want to erase.</b></li> <li><b>Press [▲, ▼] to select “Exit” and press [ENTER].</b> <ul style="list-style-type: none"> <li>Select “Next” and press [ENTER] to erase other sections.</li> </ul> </li> <li><b>Press [◀, ▶] to select “Erase” and press [ENTER].</b></li> </ol> 
<b>Change Thumbnail</b> <b>RAM DVD-R</b>	<p>You can change the image to be shown as a thumbnail picture in the Title View.</p> <ol style="list-style-type: none"> <li><b>Press [▶] (PLAY) to start play.</b></li> <li><b>Press [ENTER] when the image you want to use as a thumbnail is shown.</b></li> <li><b>Press [▲, ▼] to select “Exit” and press [ENTER].</b></li> </ol> 

\* Multiple editing is possible.

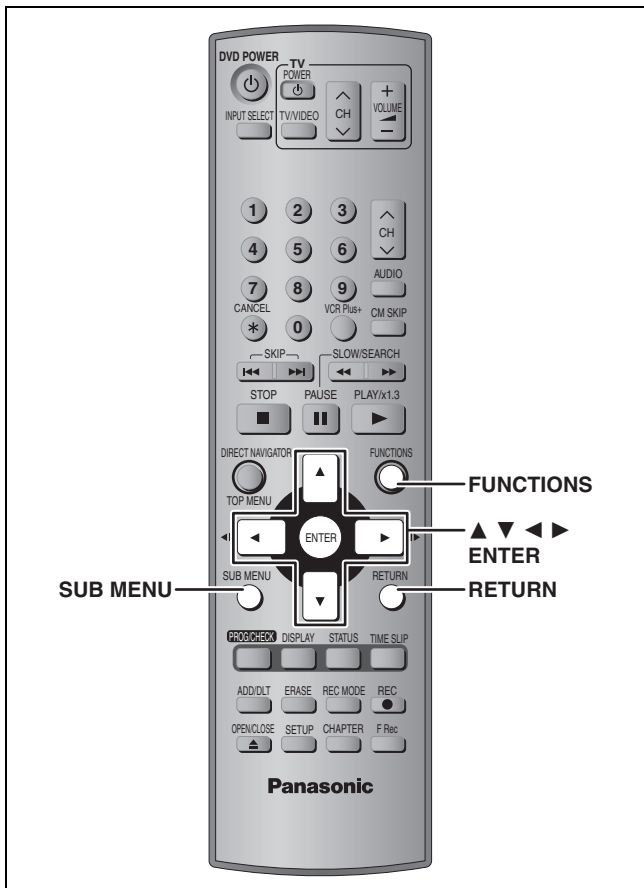
## Chapter operations

<b>Erase Chapter*</b> <b>RAM</b>	<p><b>Press [◀, ▶] to select “Erase” and press [ENTER].</b></p>
<b>Divide Chapter</b> <b>RAM</b>	<ol style="list-style-type: none"> <li><b>Press [ENTER] at the point you want to divide.</b> <ul style="list-style-type: none"> <li>Repeat this step to divide at other points.</li> </ul> </li> <li><b>Press [▲, ▼] to select “Exit” and press [ENTER].</b></li> </ol> 
<b>Combine Chapters</b> <b>RAM</b>	<p><b>Press [◀, ▶] to select “Combine” and press [ENTER].</b></p> <ul style="list-style-type: none"> <li>The selected chapter and next chapter are combined.</li> </ul>

\* Multiple editing is possible.

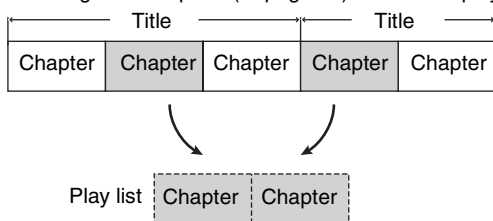
### For quicker editing

- Use search, Time Slip or slow-motion (→ page 23) to find the desired point.
- Press [◀◀, ▶▶] to skip to the end of a title.



## RAM

You can arrange the chapters (➔ page 28) to create a play list.



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

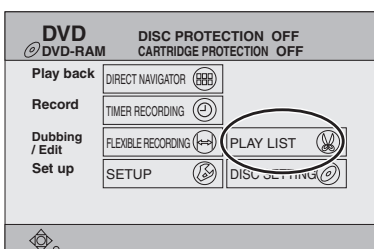
- The maximum number of items on a disc:
  - Play lists: 99
  - Chapters in play lists: Approximately 1000 (Depends on disc contents.)

## Creating play lists

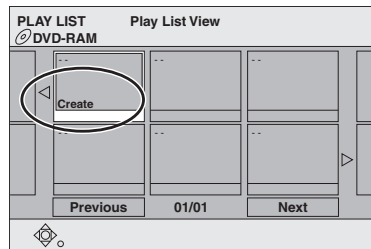
### Preparation

Release protection (cartridge ➔ page 15, disc ➔ page 33).

- 1 While stopped  
Press [FUNCTIONS].



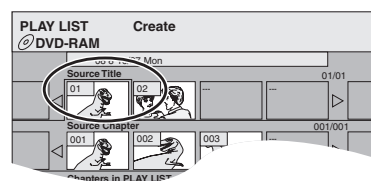
- 2 Press [▲, ▼, ◀, ▶] to select “PLAY LIST” and press [ENTER].



- 3 Press [▲, ▼, ◀, ▶] to select “Create” and press [ENTER].

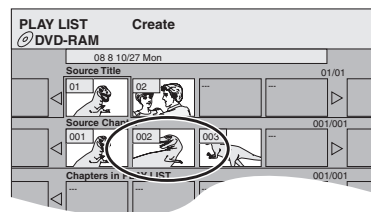
- 4 Press [◀, ▶] to select the source title and press [▼].

- Press [ENTER] to select all the chapters in the title, then skip to step 6.



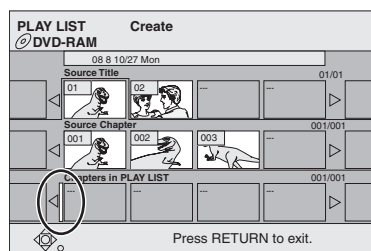
- 5 Press [◀, ▶] to select the chapter you want to add to a play list and press [ENTER].

- Press [▲] to cancel.



- You can also create a new chapter from the source title. Press [SUB MENU] to select “Divide Chapter” and press [ENTER] (➔ page 29, Divide Chapter).

- 6 Press [◀, ▶] to select the position to insert the chapter and press [ENTER].



- Repeat steps 5–6 to add other chapters.
- Press [▲] to select other source titles.

- 7 Press [RETURN].

### To exit the screen

Press [RETURN] several times.

### To return to the previous screen

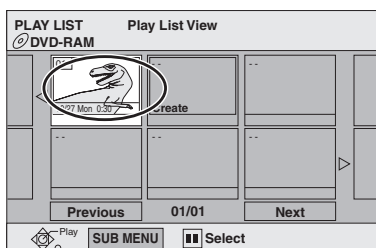
Press [RETURN].

## Editing and playing play lists/chapters

- 1 While stopped  
Press [FUNCTIONS].
- 2 Press [▲, ▼, ◀, ▶] to select “PLAY LIST” and press [ENTER].
- 3 Press [▲, ▼, ◀, ▶] to select the play list.

To start play ⇒ Press [ENTER].

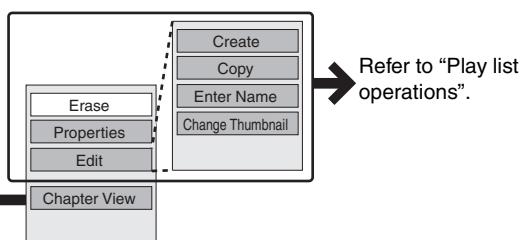
To edit ⇒ Step 4.



•To show other pages/Multiple editing (⇒ page 28)

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

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

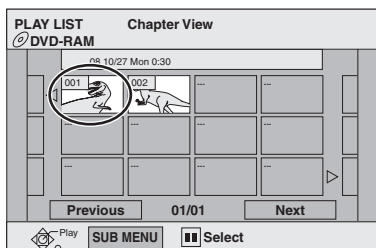


If you select “Chapter View”

- 5 Press [▲, ▼, ◀, ▶] to select the chapter.

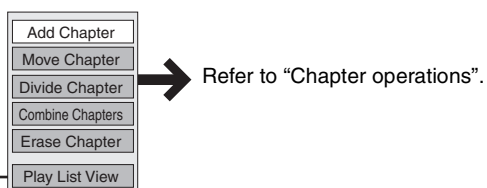
To start play ⇒ Press [ENTER].

To edit ⇒ Step 6.



•To show other pages/Multiple editing (⇒ page 28)

- 6 Press [SUB MENU], then [▲, ▼] to select the operation and press [ENTER].



•You can go back to the Play List View.

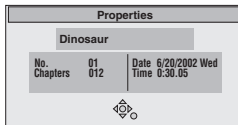
### To exit the screen

Press [RETURN] several times.

### To return to the previous screen

Press [RETURN].

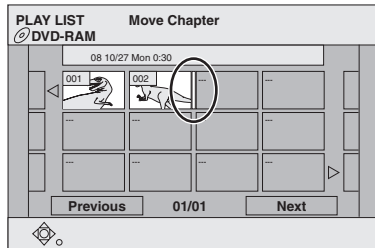
## Play list operations

Erase*	Press [◀, ▶] to select “Erase” and press [ENTER].
Properties	Play list information (e.g., time and date) is shown. 
Create	⇒ page 30, Creating play lists
Copy*	Press [◀, ▶] to select “Copy” and press [ENTER].
Enter Name	⇒ page 34, Entering text
Change Thumbnail	⇒ page 29, Change Thumbnail

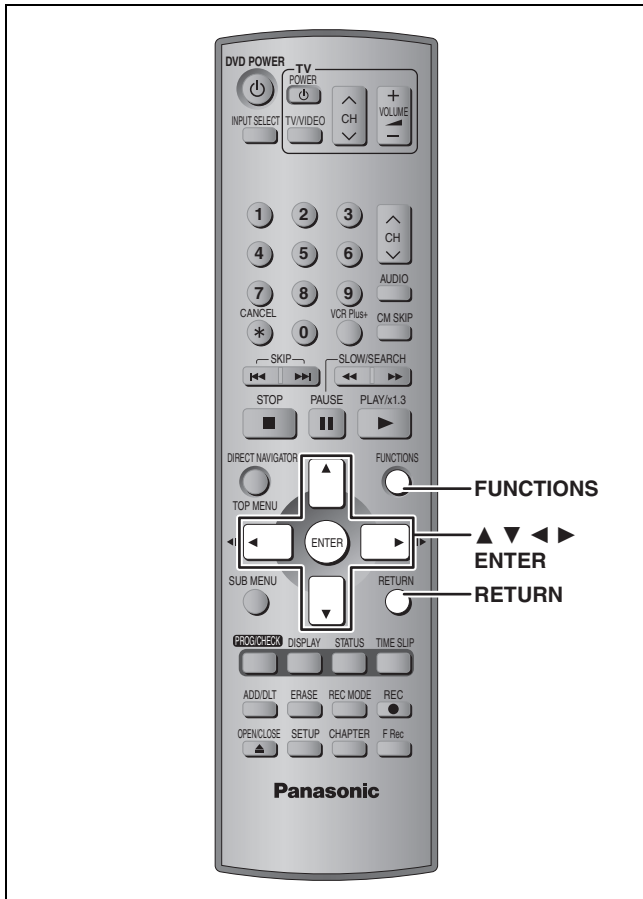
\* Multiple editing is possible.

## Chapter operations

•Editing chapters in a play list does not modify the source titles and source chapters.

Add Chapter	⇒ page 30, Creating play lists, Step 4–6
Move Chapter	Press [▲, ▼, ◀, ▶] to select the position to insert the chapter and press [ENTER]. 
Divide Chapter	⇒ page 29, Divide Chapter
Combine Chapters	⇒ page 29, Combine Chapters
Erase Chapter*	⇒ page 29, Erase Chapter

\* Multiple editing is possible.

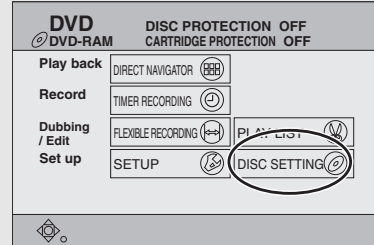


## RAM DVD-R

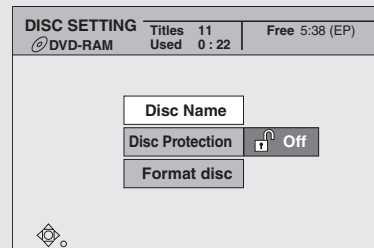
### Preparation

Release protection. **RAM**  
(cartridge → page 15, disc → right)

- 1 While stopped  
Press **[FUNCTIONS]**.



- 2 Press **[▲, ▼, ◀, ▶]** to select “DISC SETTING” and press **[ENTER]**.



- 3 Press **[▲, ▼]** to select the operation and press **[ENTER]**.

### To exit the screen

Press **[RETURN]** several times.

### To return to the previous screen

Press **[RETURN]**.

### Note

- Once the disc has been formatted, the contents cannot be restored. Check carefully before proceeding. The contents on the disc are erased when you format it even if you have set title or disc protection.
  - After finalizing **DVD-R**,
    - The disc becomes play-only and you can no longer record or edit.
    - 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.

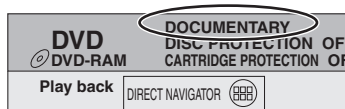


## Disc Name

### RAM DVD-R

➔ page 34, Entering text

The disc name is displayed in the FUNCTIONS window.

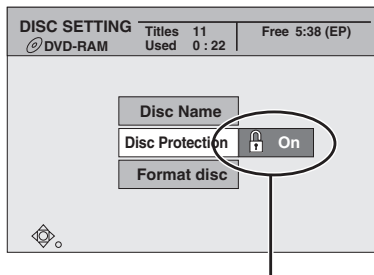


## Disc Protection

### RAM

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

Press [◀, ▶] to set disc protection and press [ENTER].



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

## Format disc

➔ page 40, Formatting)

### RAM

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 “Yes” and press [ENTER].

**2** Press [◀, ▶] to select “Start” and press [ENTER].

A message appears when formatting is finished.

**3** Press [ENTER].

### To stop formatting

Press [RETURN].

• You can cancel formatting if it takes more than 2 minutes. The disc must be reformatted if you do this.

• Do not disconnect the AC power supply cord while the message “Formatting ..” is on the television. This can render the disc unusable.

• Formatting normally takes a few minutes, however it may take up to a maximum of 70 minutes.

• Formatting cannot be performed on DVD-R or CD-R/RW.

## Select First play

### DVD-R

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

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.

## Finalize

➔ page 40, Finalize)

### DVD-R

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 “Yes” and press [ENTER].

**2** Press [◀, ▶] to select “Start” and press [ENTER].

A message appears when finalizing is finished.

**3** Press [ENTER].

• 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 cannot finalize DVD-R recorded on other manufacturer’s equipment.

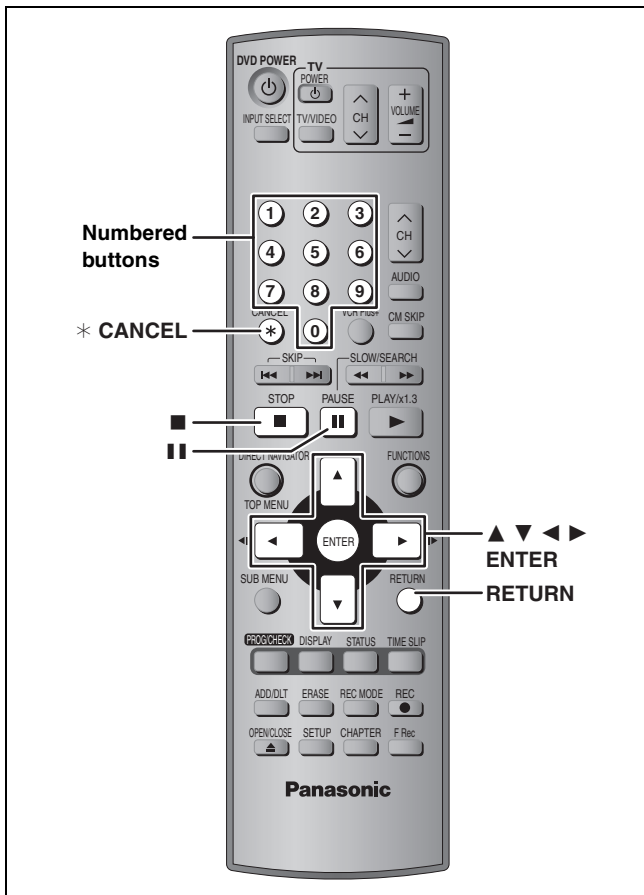
	Before finalize	After finalize
Disc display on this unit	DVD-R	DVD-V
Recording/Editing/Entering name	○	×
Play on other players	×	○

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

• Visit Panasonic’s homepage for more information about DVDs.

For U.S.A.: <http://www.panasonic.com/playDVD-R>

For Canada: [www.panasonic.ca](http://www.panasonic.ca)



## RAM DVD-R

You can give names to recorded titles, etc.

The maximum number of characters:

RAM	Characters
Title	64 (44*)
Play list	64
Disc	64

\*Timer recording

DVD-R	Characters
Title	44
Disc	40

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

## 1 Show Enter Name screen.

Title (timer recording)

Select "Enter Name" in step 3 on page 19, 20.

Title

Select "Enter Name" in step 3 on page 28.

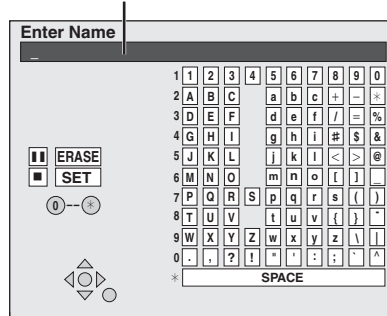
Play list

Select "Enter Name" in step 4 on page 31.

Disc

Select "Disc Name" in step 3 on page 32.

**Name field:** shows the text you have entered



## 2 Press [▲, ▼, ◀, ▶] to select a character and press [ENTER].

Repeat this step to enter other characters.

### •To erase a character

Press [▲, ▼, ◀, ▶] to select the character in the name field and press [■].

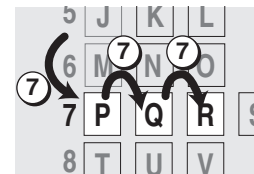
### •Using the numbered buttons to enter characters

e.g., entering the letter "R"

- ① Press [7] to move to the 7th row.
- ② Press [7] twice to highlight "R".
- ③ Press [ENTER].

### •To enter a space

Press [\* CANCEL] and press [ENTER].

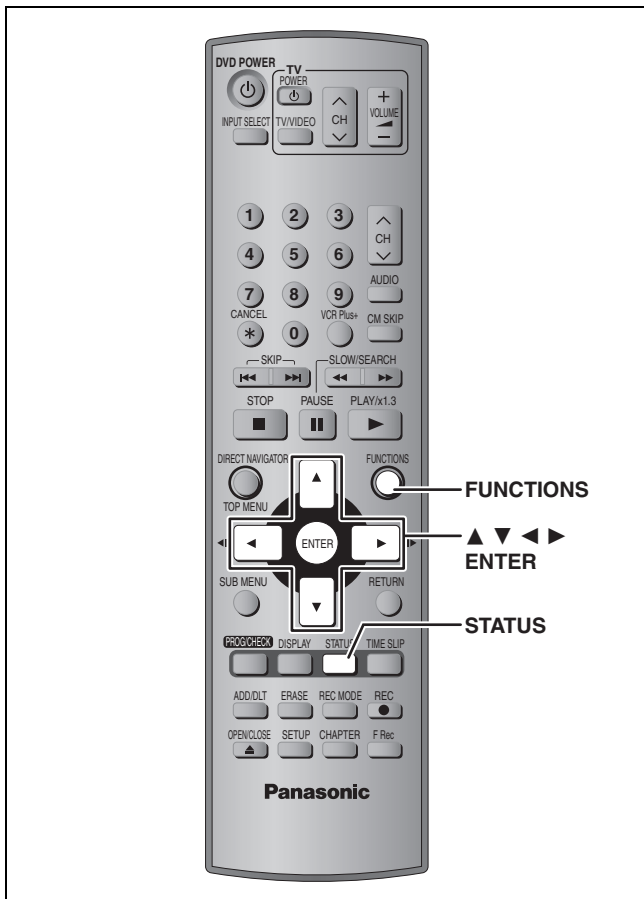


## 3 Press [■] (SET).

Returns to the previously displayed screen.

### To end partway

Press [RETURN].  
Text is not saved.

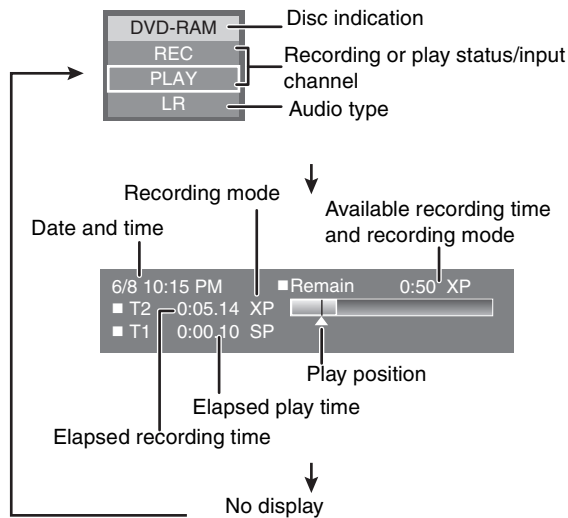


## Status messages

Status messages appear on the television when you operate the unit to show the condition of the unit.

### Press [STATUS].

The display changes each time you press the button.



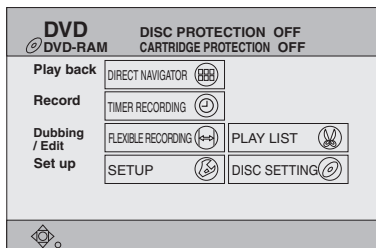
Convenient functions

## FUNCTIONS window

By using the FUNCTIONS window you may access the main functions quickly and easily.

### 1 While stopped

Press [FUNCTIONS].



Functions displayed depend on the type of disc.

### 2 Press [▲, ▼, ◀, ▶] to select an item and press [ENTER].

To exit the FUNCTIONS window  
Press [FUNCTIONS].



## Summary of settings

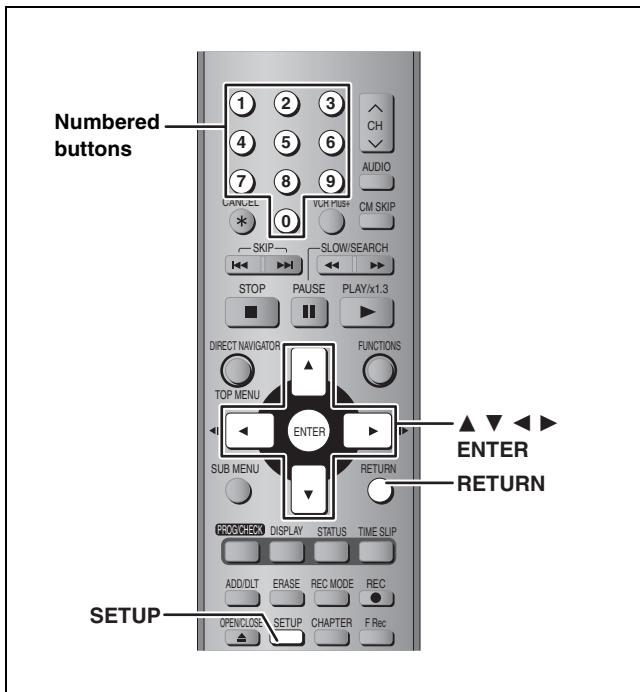
See page 38 for details on menu operation.

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

Tabs	Menus	Options (Underlined items are the factory presets.)		
<b>Channel</b>	<b>Antenna System</b> (⇒ page 11)	●TV	● <u>CATV</u>	
	<b>Auto Channel Setting</b> (⇒ page 11)	–		
	<b>Preset Channel Captions</b> (⇒ page 13)	–		
	<b>Manual Channel Captions</b> (⇒ page 13)	–		
	<b>VCR Plus+ CH Setting</b> (⇒ page 12)	–		
<b>Set Up</b>	<b>Off Timer</b> Select how long the unit remains on when it is not being used.	●2 hr	● <u>6 hr</u>	●Off
	<b>Remote Control Code</b> (⇒ page 14)	● <u>Set Code 1</u>	●Set Code 2	●Set Code 3
	<b>Auto Clock Setting</b> (⇒ page 38)	–		
	<b>Manual Clock Setting</b> (⇒ page 38)	–		
	<b>Time Zone Adjust</b> (⇒ page 38)	●–1	● <u>0</u>	●+1
	<b>Re-initialize Settings</b> This returns all values in the SETUP menus, except for the clock, channel settings, ratings level, and on-screen language, to the default settings.	●Yes	● <u>No</u>	
	<b>Disc</b>	<b>Languages</b> Choose the language for audio, subtitle and disc menus. <b>DVD-V</b> Press [ENTER] to display the menu.	●Enter a code (⇒ page 40) when you select “Other ****”. ●Some discs start in a certain language despite any changes you make here.	
	<b>Audio Language</b>	●English	●French	●Spanish
		●Original: The original language of each disc will be selected. ●Other ****		
	<b>Subtitle Language</b>	● <u>Automatic</u> : 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 ****
	<b>Menu Language</b>	● <u>English</u>	●French	●Spanish ●Other ****
	<b>Ratings</b> Set a ratings level to limit DVD-Video play.  Follow the on-screen instructions. Enter a 4-digit password with the numbered buttons when the password screen is shown. ●Do not forget your password.	● <u>8 No Limit</u> : 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.	●Unlock Recorder ●Change Password	
		●Change Level	●Temporary Unlock	
	<b>Recording Time in EP Mode</b> Select the maximum number of hours for recording in EP mode (⇒ page 17, Recording modes and approximate recording times).	●EP (6H): You can record for 6 hours on an unused 4.7 GB disc.		
		● <u>EP (8H)</u> : You can record for 8 hours on an unused 4.7 GB disc.		
	<b>Play DVD-Audio in Video Mode</b> 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.		
		● <u>Audio (Off)</u>		
<b>Video</b>	<b>3-D Y/C Separation</b>	● <u>On</u> : Reduces noise by separating the luminance (Y) and color (C) signals when recording.	●Off: Reduces the ghosting that occurs when recording fast moving images.	
	<b>Hybrid VBR Resolution</b> (⇒ page 40, VBR)	●Automatic: The resolution is automated to provide efficient recording with less block noise. <b>RAM</b>		
		● <u>Fixed</u> : The resolution is fixed to ensure that there is no loss of source picture resolution while recording.		
	<b>Still Mode</b> Select the type of picture shown when you pause play (⇒ page 40, Frames and fields).	● <u>Automatic</u>		
		●Field: Select if jittering occurs when “Automatic” is selected.	●Frame: Select if small text or fine patterns cannot be seen clearly when “Automatic” is selected.	
	<b>Line-in NR</b> Reduces video tape noise while dubbing. ●When noise reduction is on, “3-D Y/C Separation” (⇒ above) does not work regardless of the setting.	● <u>Automatic</u> : 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.	

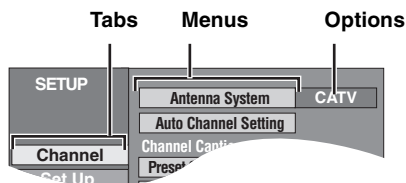
Continued on next page

Tabs	Menus	Options (Underlined items are the factory presets.)
Video Continued	<b>Black Level Control</b> Select normal, lighter or darker for adjusting the black level control to the desired setting for picture enhancement.	
	<b>Input Level</b> Adjusts the black level of the input signal.	●Lighter ● <u>Darker</u>
	<b>Output Level (Composite/S Video)</b> Adjusts the black level of the output signal from the VIDEO OUT and S-VIDEO OUT terminal.	● <u>Lighter</u> ●Darker
	<b>Output Level (Component)</b> Adjusts the black level of the output signal from the COMPONENT VIDEO OUT (Y/P <sub>B</sub> /P <sub>R</sub> ) terminals.	●Lighter ● <u>Normal</u> ●Darker
Audio	<b>Search Audio &amp; PLAY ×1.3</b> You may hear sound regardless of this setting with some discs.	●On: Audio is heard during first level search forward. ●Off: Audio is not heard during search. Quick View (⇒ page 23) does not work.
	<b>D. Range Compression</b> <u>DVD-V</u> (Dolby Digital only) Change the dynamic range for late night viewing.	●On ● <u>Off</u>
	<b>Select MTS</b> Select whether to record the main or secondary audio type (SAP) when recording to DVD-R. (You cannot change secondary audio when recording audio to DVD-R from an external source.)	● <u>Main</u> ●SAP
	<b>Digital Audio Output</b> Change the settings when you have connected equipment through this unit's DIGITAL AUDIO OUT terminal (⇒ page 9). Press [ENTER] to display the menu.	
	<b>PCM Down Conversion</b> 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 sampling frequency of 96 kHz or 88.2 kHz.) ●Off: Signals are output as 96 kHz or 88.2 kHz. (Choose when the connected equipment can process signals with sampling frequency of 96 kHz or 88.2 kHz.)
	<b>Dolby Digital</b>  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.
	<b>DTS</b>  <b>Note</b> 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. ●PCM: When connecting to equipment not displaying the DTS logo.
	<b>Status Messages</b> Choose whether to show status messages automatically.	● <u>Automatic</u> ●Off
	<b>On-screen Language</b> Choose the language for these menus and the on-screen messages.	● <u>English</u> ●Español ●Français
	<b>Blue Background</b> Select "Off" if you do not want to have the unit show the blue background when reception is weak.	●On ●Off
<b>Front Display</b> Changes the brightness of the unit's display.	● <u>Bright</u> ●Dim ●Automatic: The display turns dark during play, and reappears momentarily if a button is pressed. When the unit is turned off all displays disappear. While using this mode the standby power consumption can be reduced.	
TV Screen	<b>TV Type</b> (⇒ page 14)	● <u>Aspect 4:3 &amp; 480I</u> ●Aspect 4:3 & 480P ●Aspect 16:9 & 480I ●Aspect 16:9 & 480P
	<b>4:3 TV Settings for DVD-Video</b> Select how DVD-Video widescreen picture is shown on a 4:3 standard aspect television.	● <u>Pan &amp; Scan</u> : Video recorded for a widescreen is played as Pan & Scan (unless prohibited by the producer of the disc). ●Letterbox: Video recorded for a widescreen is played in the letterbox style.
	<b>4:3 TV Settings for DVD-RAM</b> Select how DVD-RAM widescreen picture is shown on a 4:3 standard aspect television.	●4:3: Titles played as recorded. ●Pan & Scan: Video recorded for a widescreen is played as Pan & Scan. ● <u>Letterbox</u> : Video recorded for a widescreen is played in the letterbox style.



### Common procedures

- 1 While stopped  
Press [SETUP].



- 2 Press [▲, ▼] to select the tab and press [▶].
- 3 Press [▲, ▼] to select the menu and press [ENTER].
- 4 Press [▲, ▼] to select the option and press [ENTER].

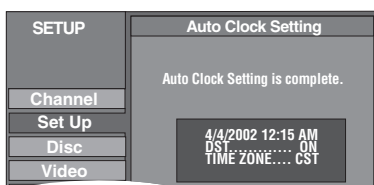
### Clock settings

- 1 Press [SETUP].
- 2 Press [▲, ▼] to select "Set Up" and press [▶].

#### Auto Clock Setting

- 3 Press [▲, ▼] to select "Auto Clock Setting" and press [ENTER].
- 4 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.



- If the time was not set correctly, use manual clock setting or time zone adjust.
  - 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].

#### To cancel partway

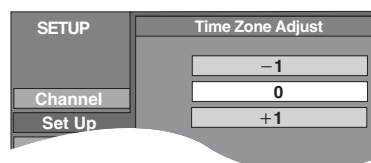
Press [RETURN].

#### Time Zone Adjust

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

You cannot change this setting if you set the clock manually.

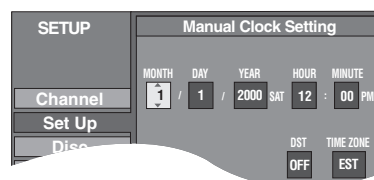
- 3 Press [▲, ▼] to select "Time Zone Adjust" and press [ENTER].



- 4 Press [▲, ▼] to select "-1" or "+1" and press [ENTER].

#### Manual Clock Setting

- 3 Press [▲, ▼] to select "Manual Clock Setting" and press [ENTER].



- 4 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 (→ above)

- 5 Press [ENTER].

The clock starts.

When you change the time zone, the recording times for titles recorded before the time zone was changed also change to correspond to the new time zone.

#### To exit the screen

Press [SETUP].

#### To return to the previous screen

Press [RETURN].

# Specifications

<b>Recording system:</b>	DVD Video Recording format (DVD-RAM), DVD-Video format (DVD-R)
<b>Optical pick-up:</b>	System with 1 lens, 2 integration units (658 nm wavelength for DVDs, 795 nm wavelength for CDs)
<b>Recordable discs:</b>	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) 12 cm (5") 4.7 GB DVD-R discs (for General Ver. 2.0/4×-SPEED DVD-R Revision 1.0)
<b>Recording time:</b>	Max. 8 hours (using 4.7 GB disc) XP: 60 minutes SP: 120 minutes LP: 240 minutes EP: 360 minutes or 480 minutes
<b>Discs played:</b>	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) 12 cm (5") 4.7 GB DVD-R discs (for General Ver. 2.0/4×-SPEED DVD-R Revision 1.0) DVD-VIDEO discs DVD-Audio discs CD-Audio discs (CD-DA) Video CD discs CD-R/CD-RW discs (CD-DA, Video CD, MP3 formatted discs)
<b>Video system</b>	
<b>TV system:</b>	NTSC system, 525 lines, 60 fields
<b>Recording system:</b>	MPEG2 (Hybrid VBR)
<b>Input:</b>	LINE (pin jack)×3, 1.0 Vp-p; 75 Ω S connector×3 Y: 1.0 Vp-p; 75 Ω C: 0.286 Vp-p; 75 Ω
<b>Output:</b>	LINE (pin jack)×1, 1.0 Vp-p; 75 Ω S connector×1 Y: 1.0 Vp-p; 75 Ω C: 0.286 Vp-p; 75 Ω
<b>Component video output (480P/480i):</b>	Y: 1.0 Vp-p; 75 Ω Pb: 0.7 Vp-p; 75 Ω Pr: 0.7 Vp-p; 75 Ω
<b>Antenna reception input:</b>	TV Channel: 2ch-69ch, 75 Ω CATV Channel: 1ch-125ch, 75 Ω

<b>Audio system</b>	
<b>Recording system:</b>	Dolby Digital
<b>Input:</b>	LINE (pin jack)×3 Reference input: 309 mVrms FS: 2 Vrms (1 kHz, 0 dB) Input impedance: 47 kΩ
<b>Output:</b>	LINE (pin jack)×1 Reference output: 309 mVrms FS: 2 Vrms (1 kHz, 0 dB) Output impedance: 1 kΩ (Load impedance: 10 kΩ)
<b>Number of channels:</b>	Recording: 2 channels Playback: 2 channels
<b>Other input/output connectors:</b>	Digital audio optical output connector
<b>Operating temperature range:</b>	5 °C-40 °C (41 °F-104 °F)
<b>Operating humidity range:</b>	10 %-80 % RH (no condensation)
<b>Clock unit:</b>	Quartz-controlled 12-hour digital display

## LASER Specification

Class I LASER Product	
<b>Wave length:</b>	795 nm 658 nm
<b>Laser power:</b>	No hazardous radiation is emitted with the safety protection

## Power supply

<b>For U.S.A. and Canada</b>	AC 120 V, 60 Hz
<b>For units with PX printed on the outer packaging</b>	AC 110 -240 V, 50/60 Hz

<b>Power consumption:</b>	25 W
<b>Dimensions:</b>	Approx. 430 (W)×79 (H)×274 (D) mm [Approx. 16 <sup>15</sup> / <sub>16</sub> "(W)×3 <sup>1</sup> / <sub>8</sub> "(H)×10 <sup>13</sup> / <sub>16</sub> "(D)] (excluding protrusions)
<b>Mass:</b>	Approx. 3.3 kg (7.28 lbs)

<b>Power consumption in standby mode:</b>	approx. 2.9 W
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## Note

Specifications are subject to change without notice.  
Mass and dimensions are approximate.

# 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 that came with the cloth carefully.

Observe the following points to ensure continued listening and viewing pleasure.

Dust and dirt may adhere to the unit's lens over time, making it impossible to record or play discs. Use the **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.

## 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.

## 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.

## 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-Video 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 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.



Frame

Field

Field

- 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.

## 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.

## Pan&Scan/Letterbox

In general, DVD-Video are produced with the intention that they be viewed on a widescreen television (16:9 aspect ratio), so images often don't fit regular (4:3 aspect ratio) televisions. Two styles of picture, "Pan & Scan" and "Letterbox", deal with this problem.

Pan&Scan: The sides are cut off so the picture fills the screen.



Letterbox: Black bands appear at the top and bottom of the picture so the picture itself appears in an aspect ratio of 16:9.



## Playback control (PBC)

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

(This unit is compatible with version 2.0 and 1.1.)

## 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.

## VBR (Variable bitrate)

This is a method of video recording that adjusts the bit rate according to video signal.

## Language code list

Enter the code with the numbered buttons.

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



# Frequently asked questions

Set up		Page
What equipment is necessary to play multi channel surround sound?	<ul style="list-style-type: none"> <li>• DVD-Video: You can play DVD-Video multi channel surround by digitally connecting an amplifier equipped with a Dolby Digital and a DTS decoder.</li> <li>• DVD-Audio: This unit plays DVD-Audio in 2 channels. You cannot play multi channel surround sound.</li> </ul>	9 —
Are the headphones and speakers directly connected to the unit?	<ul style="list-style-type: none"> <li>• You cannot directly connect to the unit. Connect through the amplifier etc.</li> </ul>	9
The television has both S-VIDEO IN terminal and COMPONENT VIDEO IN terminals. Which terminal should I connect with?	<ul style="list-style-type: none"> <li>• We recommend the COMPONENT VIDEO IN terminal. Component signal outputs the color difference signals (P<sub>B</sub>/P<sub>R</sub>) and luminance signal (Y) separately in order to achieve high fidelity in reproducing colors. If the television is compatible with progressive output, a high quality picture can be output because this unit's component video output terminal outputs a progressive output signal.</li> </ul>	7
Is my television progressive output compatible?	<ul style="list-style-type: none"> <li>• All Panasonic televisions that have 480P input terminals are compatible. Consult the manufacturer if you have another brand of television.</li> </ul>	—


Disc		
Can I play DVD-Video, DVD-Audio and Video CDs bought in another country?	<ul style="list-style-type: none"> <li>• You can play them if the video standard is NTSC.</li> <li>• However, you cannot play DVD-Video if their region number does not include "1" or "All".</li> </ul>	— —
Can a DVD-Video that does not have a region number be played?	<ul style="list-style-type: none"> <li>• The DVD-Video region number indicates the disc conforms to a standard. You cannot play discs that do not have a region number.</li> </ul>	—
Please tell me about DVD-R and DVD-RW compatibility with this unit.	<ul style="list-style-type: none"> <li>• This unit records and plays DVD-R. However, you cannot record onto DVD-R discs that are finalized.</li> <li>• This unit also records and plays 1×–4× recording speed DVD-R discs.</li> <li>• This unit does not record or play DVD-RW.</li> </ul>	— — —
Please tell me about CD-R and CD-RW compatibility with this unit.	<ul style="list-style-type: none"> <li>• You can play CD-R and CD-RW on this unit that are created using a compatible format.</li> <li>• You cannot write to a CD-R or CD-RW with this unit.</li> </ul>	15, 25 —

Recording		
Can I record from a commercially purchased video cassette or DVD?	<ul style="list-style-type: none"> <li>• Most commercially sold video cassettes and DVD are copy protected; therefore, recording is usually not possible.</li> </ul>	—
Can a DVD-R recorded on this unit be played on other equipment?	<ul style="list-style-type: none"> <li>• You can play on DVD-R compatible players after finalizing the disc on this unit; however, due to the condition of the recording, play may not be possible.</li> </ul>	33
How many times can I write to a DVD-RAM disc?	<ul style="list-style-type: none"> <li>• You can write to the disc approximately 100,000 times depending upon the conditions of use.</li> </ul>	—
Can I record digital audio signals using this unit?	<ul style="list-style-type: none"> <li>• You cannot record digital signals. The digital audio terminals on this unit are for output only.</li> </ul>	—
Can a digital audio signal from this unit be recorded to other equipment?	<ul style="list-style-type: none"> <li>• You can record if using the PCM signal. When recording DVD, change the "Digital Audio Output" settings to the following from the SETUP menu. <ul style="list-style-type: none"> <li>–PCM Down Conversion    On</li> <li>–Dolby Digital            PCM</li> <li>–DTS                            PCM</li> </ul> </li> <li>However, only <ul style="list-style-type: none"> <li>–As long as digital recording from the disc is permitted.</li> <li>–As long as the recording equipment is compatible with a sampling frequency of 48 kHz.</li> </ul> </li> <li>• You cannot record MP3 signals.</li> </ul>	37 —
Can I switch to MTS during recording?	<ul style="list-style-type: none"> <li>• With DVD-RAM, you can, and the audio recorded also changes. Just press [AUDIO].</li> <li>• With DVD-R, you cannot. Change before recording with the "Select MTS" in the SETUP menu.</li> </ul>	17 37

## On the television

		Page
Cannot finish recording completely.	<ul style="list-style-type: none"> <li>The program was copy-protected.</li> <li>The disc may be full.</li> </ul>	— —
Cannot play.	<ul style="list-style-type: none"> <li>You inserted an incompatible disc (Discs recorded in PAL video etc.).</li> </ul>	—
Cannot record on the disc.	<ul style="list-style-type: none"> <li>The disc may be dirty or scratched.</li> </ul>	15
Unable to format.		
Please check the disc.		
Cannot record. Disc is full.	<ul style="list-style-type: none"> <li>Create space by erasing any unnecessary titles. <b>RAM</b></li> <li>Use a new disc. <b>RAM DVD-R</b></li> </ul>	24, 29, 33
Cannot record. Maximum number of titles exceeded.		—
Error has occurred. Please press ENTER.	<ul style="list-style-type: none"> <li>Press [ENTER] to start recovery process. You cannot operate the unit while it is recovering ("SELF CHECK" appears on the unit's display).</li> </ul>	—
No disc	<ul style="list-style-type: none"> <li>The disc may be upside down.</li> </ul>	—
Please change the disc.	<ul style="list-style-type: none"> <li>There may be a problem with the disc. Press [<b>▲</b> OPEN/CLOSE] to remove it and check it for scratches or dirt. (The unit turns off automatically after you open the tray.)</li> </ul>	15
This is a non-recordable disc.	<ul style="list-style-type: none"> <li>The unit cannot record on the disc you inserted. Insert a DVD-RAM or unfinalized DVD-R.</li> <li>You inserted an unformatted DVD-RAM. Format the disc with this unit.</li> </ul>	—
This disc is not formatted properly.		33
⊘	<ul style="list-style-type: none"> <li>The operation is prohibited by the unit or disc.</li> </ul>	—

## On the unit's display

<b>CHK REMOTE</b> □ ("□" stands for a number.)	<ul style="list-style-type: none"> <li>The remote control and main unit are using different codes. Change the code on the remote control.</li> </ul>  <p>Press and hold [ENTER] and the indicated number button at the same time for more than 2 seconds.</p>	14
<b>HARD ERR</b>	<ul style="list-style-type: none"> <li>If there is no change after turning the unit on and off, consult the dealer where the unit was purchased.</li> </ul>	—
<b>NO READ</b>	<ul style="list-style-type: none"> <li>The disc is dirty or badly scratched. The unit cannot record, play, or edit.</li> <li>You have used a DVD-RAM/PD lens cleaner and it has finished. Press [<b>▲</b> OPEN/CLOSE] to eject the disc.</li> </ul>	15 —
<b>PROG FULL</b>	<ul style="list-style-type: none"> <li>There are already 16 timer programs. Delete unnecessary timer programs.</li> </ul>	21
<b>SELF CHECK</b>	<ul style="list-style-type: none"> <li>There was a power failure or the AC plug was disconnected while the unit was on. The unit is carrying out its recovery process. Wait until the message disappears.</li> </ul>	—
<b>UNSUPPORT</b>	<ul style="list-style-type: none"> <li>You have inserted a disc the unit cannot play or record on.</li> </ul>	15
<b>U14</b>	<ul style="list-style-type: none"> <li>The unit is hot. The unit switches to standby for safety reasons. Wait for about 30 minutes until the message disappears. Select a position with good ventilation when installing the unit. Do not block the cooling fan on the rear of the unit.</li> </ul>	—
<b>U99</b>	<ul style="list-style-type: none"> <li>The unit fails to operate properly. Press [POWER ⏻/I] on the main unit to switch the unit to standby. Now press [POWER ⏻/I] on the main unit again to turn the unit on.</li> </ul>	—

# Troubleshooting guide

Before requesting service, make the following checks. If you are in doubt about some of the check points, or if the remedies indicated in the chart do not solve the problem, refer to the “Customer Services Directory” on page 46 if you reside in the U.S.A., or refer to the “Product information” on page 45 if you reside in Canada. In other areas, consult your dealer.

## The following do not indicate a problem with this unit:

- Regular disc rotating sounds. The sound of the disc rotating may become louder especially when finalizing a DVD-R.
- Poor reception due to atmospheric conditions.
- Image disturbance during search.
- Interruptions to reception due to periodic satellite broadcasting breaks.

## Power

## Page

<b>No power.</b>	● Insert the AC power supply cord securely into a known active AC outlet.	<b>7</b>
<b>The unit switches to the standby mode.</b>	● This is a power saving feature. Change “Off Timer” in the SETUP menu, if you would prefer. ● One of the unit’s safety devices is activated. Press [POWER ⏻/⏻] on the main unit to turn the unit on.	<b>36</b> —

## Displays

<b>The display is dim.</b>	● Change “Front Display” in the SETUP menu.	<b>37</b>
<b>“12:00” is flashing on the unit’s display.</b>	● Set the clock.	<b>38</b>
<b>Compared to the actual recorded time, the remaining time displayed is less.</b>	● The displayed recording/play time is converted from the number of frames at 29.97 frames (equal to 0.999 seconds) to one second. There will be slight a difference between the time displayed and the actual elapsed time (e.g., actual one-hour elapsed time may display as approximately 59 minutes 56 seconds). This does not affect the recording.	—
<b>The time recorded on the disc and the available time shown do not add up. The play time shown for MP3 does not agree with the actual time.</b>	● Times shown may disagree with actual times. ● Even if you erase recorded content from the DVD-R, there is no increase in disc space. ● More disc space than the actual recording time is used after recording or editing the DVD-R 200 times or more. ● While searching, the elapsed time may not display correctly.	— — — —

## TV screen and video


<b>Television reception worsens after connecting the unit.</b>	● This can occur because the signals are being divided between the unit and other equipment. It can be solved by using a signal booster, available from audio-visual suppliers.	—
<b>Status messages do not appear.</b>	● Select “Automatic” in “Status Messages” in the SETUP menu.	<b>37</b>
<b>The blue background does not appear.</b>	● Select “On” in “Blue Background” in the SETUP menu.	<b>37</b>
<b>The 4:3 aspect ratio picture expands left and right.</b>	● Use the television to change the aspect. If your television does not have that function, set “Progressive” in the Video menu to “OFF”.	<b>27</b>
<b>Screen size is wrong.</b>	● Check the settings for “TV Type”, “4:3 TV Settings for DVD-Video” or “4:3 TV Settings for DVD-RAM” in the SETUP menu.	<b>37</b>
<b>There is a lot of after-image when playing video.</b>	● Set “MPEG-DNR” in the Video menu to “OFF”.	<b>27</b>
<b>When playing DVD-Video using progressive output, one part of the picture momentarily appears to be doubled up.</b>	● Set “Progressive” in the Video menu to “OFF”. This problem is caused by the editing method or material used on DVD-Video, but should be corrected if you use interlace output.	<b>27</b>
<b>There is no apparent change in picture quality when adjusted with the Video menu in the on-screen menus.</b>	● The effect is less perceivable with some types of video.	—
<b>The images from this unit do not appear on the television. Picture is distorted.</b>	● Make sure that the television is connected to the VIDEO OUT terminal, S-VIDEO OUT terminal or COMPONENT VIDEO OUT terminals on this unit. ● Make sure that the television’s input setting (e.g., VIDEO 1) is correct. ● The television isn’t compatible with progressive signals. Press and hold [■] and [TIME SLIP] on the main unit at the same time for about 5 seconds. The setting will change to interlace.	<b>7</b> — —

Sound

Page

<b>No sound.</b> <b>Low volume.</b> <b>Distorted sound.</b> <b>Cannot hear the desired audio type.</b>	<ul style="list-style-type: none"> <li>•Check the connections and settings. Check the input mode on the amplifier if you have connected one.</li> </ul>	7-9, 37
	<ul style="list-style-type: none"> <li>•Press [AUDIO] to select the audio.</li> <li>•Turn off V.S.S. in the following cases.                             <ul style="list-style-type: none"> <li>–When using discs that do not have surround sound effects such as Karaoke discs.</li> <li>–When playing MTS broadcast programs.</li> </ul> </li> <li>•The disc may have a restriction on the method of audio output. If “D.MIX” does not appear in the display when playing multi-channel DVD-Audio, only audio for the two front channels will be output. Refer to the disc’s jacket.</li> </ul>	17, 24 27
	<ul style="list-style-type: none"> <li>•The disc may have a restriction on the method of audio output. If “D.MIX” does not appear in the display when playing multi-channel DVD-Audio, only audio for the two front channels will be output. Refer to the disc’s jacket.</li> </ul>	—
<b>Cannot switch audio.</b>	<ul style="list-style-type: none"> <li>•You cannot change the audio type when a DVD-R is in the disc tray.</li> </ul>	—
	<ul style="list-style-type: none"> <li>•You cannot change the audio type when playing a DVD-R. (You can select “Main” or “SAP” in “Select MTS” in the SETUP menu before recording.)</li> </ul>	37
	<ul style="list-style-type: none"> <li>•You have used digital connection. Set “Dolby Digital” to “PCM” or connect using audio cables (analog connection).</li> <li>•There are discs which audio cannot be changed because of how the disc was created.</li> </ul>	37, 9 —

Operation

<b>Cannot operate the television.</b> <b>The remote control doesn’t work.</b>	<ul style="list-style-type: none"> <li>•Change manufacturer code. Some televisions cannot be operated even if you change the code.</li> <li>•The remote control and main unit are using different codes. Change the code on the remote control.</li> </ul>	14 14
	 <p>Press and hold [ENTER] and the indicated number button at the same time for more than 2 seconds.</p>	
	<ul style="list-style-type: none"> <li>•The batteries are depleted. Replace them with new ones.</li> <li>•Colored glass may obstruct the signal reception/transmission.</li> <li>•Don’t place the signal sensor in direct sunlight or in areas that may be subject to sunlight exposure.</li> </ul>	4 — —
<b>The unit is on but cannot be operated.</b>	<ul style="list-style-type: none"> <li>•Some operations may be prohibited by the disc.</li> <li>•The unit is hot (“U14” appears on the display). Wait for “U14” to disappear.</li> <li>•One of the unit’s safety devices may have been activated.</li> </ul> <p>Reset the unit as follows:                      Press [POWER ⏻/I] on the main unit to switch the unit to standby.                      If the unit doesn’t switch to standby, press and hold [POWER ⏻/I] on the main unit for about 10 seconds. The unit is forcibly switched to standby.                      Alternatively, disconnect the AC power supply cord, wait one minute, then reconnect it.</p>	— — —
	<ul style="list-style-type: none"> <li>•The unit may have a problem. While the unit is off, press and hold [■] and [CH ^] on the main unit at the same time for about 5 seconds. Remove the disc and consult the dealer.</li> </ul>	—

Recording and timer recording

<b>Cannot record.</b>	<ul style="list-style-type: none"> <li>•You haven’t inserted a disc or the disc you inserted cannot be recorded on. Insert a disc the unit can record onto.</li> </ul>	15
	<ul style="list-style-type: none"> <li>•The disc is unformatted. Format the disc. <b>RAM</b></li> </ul>	33
	<ul style="list-style-type: none"> <li>•The write-protect tab on the cartridge is set to PROTECT, or the disc is protected with DISC SETTING.</li> </ul>	15, 33
	<ul style="list-style-type: none"> <li>•Some programs have limitations on the number of times they can be recorded (CPRM).</li> </ul>	40
	<ul style="list-style-type: none"> <li>•The disc is full or nearly full. Erase unneeded titles or use another disc.</li> </ul>	24, 29, 33
	<ul style="list-style-type: none"> <li>•You cannot record on finalized DVD-R discs.</li> </ul>	—
	<ul style="list-style-type: none"> <li>•Due to peculiarities of DVD-R, you may be unable to record onto them if you either insert and remove the disc or switch the unit on and off while a disc is loaded, a total of fifty times.</li> <li>•A DVD-R recorded on this unit may not be recordable on other Panasonic DVD recorders.</li> </ul>	—
<b>Timer recording does not work properly.</b> <b>VCR Plus+ system does not work properly.</b>	<ul style="list-style-type: none"> <li>•When connecting a cable TV box or satellite receiver, the VCR Plus+ system does not work.</li> </ul>	—
	<ul style="list-style-type: none"> <li>•The timer program is incorrect or different timer program times overlap. Correct the program.</li> </ul>	21
	<ul style="list-style-type: none"> <li>•The unit is not on timer recording standby. (“⊙” on the unit’s display is not on.) Press [⏻ DVD POWER] to turn the unit off and make sure that “⊙” is on.</li> <li>•Correct the guide channels.</li> <li>•Set the clock.</li> </ul>	19, 20 12 38
<b>Timer recording does not stop even when [■] is pressed.</b>	<ul style="list-style-type: none"> <li>•Press [■] and then [ENTER] within 5 seconds to turn “⊙” off. Recording stops.</li> </ul>	19, 20
<b>The timer program remains even after recording finishes.</b>	<ul style="list-style-type: none"> <li>•The timer program remains if set to daily or weekly.</li> </ul>	20
<b>A part or whole of a recorded title has been lost.</b>	<ul style="list-style-type: none"> <li>•If there is a power failure or the plug is disconnected from the household AC outlet while recording or editing, the title may be lost or the disc may become unusable. You will have to format the disc (<b>RAM</b>) or use a new disc. We cannot offer any guarantee regarding lost programs or discs.</li> </ul>	33

Play		Page
Play fails to start even when [▶] (PLAY) is pressed. Play starts but then stops immediately.	● Insert the disc correctly with the label facing up.	22
	● You tried to play a blank DVD-RAM/DVD-R, or discs unplayable on this unit.	15
	● 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.	36
DVD-Video is not played.	● Some DVD-Video cannot be played when you change the ratings level.	36
Alternative soundtrack and subtitles cannot be selected.	● The languages are not recorded on the disc.	—
	● You may have to use the disc's 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.	26
Angle cannot be changed.	● Angles can only be changed during scenes where different angles are recorded.	—
You have forgotten your ratings password.	● While the disc tray is open, press and hold [◀◀/◀◀] and [▶▶/▶▶] on the main unit at the same time for 5 or more seconds.	—
Quick View does not work.	● This does not work if the setting is "Off" in "Search Audio & PLAY ×1.3".	37
	● This does not work when audio is other than Dolby Digital.	—
	● This does not work when recording is in XP or FR mode.	—
The resume play function does not work.	● This function only works when "PLAY" is flashing in the unit display.	—
	● 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.	—

Edit		Page
Cannot format.	● The disc is dirty. Use a special cleaner and wipe clean.	15
	● You tried formatting a disc that is not compatible with this unit.	15
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 to 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.	29
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.	—

## Product Service

- Damage requiring service**—The unit should be serviced by qualified service personnel if:
  - The AC power supply cord or AC adaptor has been damaged; or
  - Objects or liquids have gotten into the unit; or
  - The unit has been exposed to rain; or
  - The unit does not operate normally or exhibits a marked change in performance; or
  - The unit has been dropped or the cabinet damaged.
- Servicing**—Do not attempt to service the unit beyond that described in these operating instructions. Refer all other servicing to authorized servicing personnel.
- Replacement parts**—When parts need replacing ensure the servicer uses parts specified by the manufacturer or parts that have the same characteristics as the original parts. Unauthorized substitutes may result in fire, electric shock, or other hazards.
- Safety check**—After repairs or service, ask the servicer to perform safety checks to confirm that the unit is in proper working condition.

### Product information

For product information or assistance with product operation:

In the U.S.A., refer to "Customer Services Directory" on page 46.

In Canada, contact the Panasonic Canada Inc. Customer Care Centre at 1-800-561-5505, or visit the website ([www.panasonic.ca](http://www.panasonic.ca)), or an authorized Servicentre closest to you.

The model number and serial number of this product can be found on either the back or the bottom of the unit. Please note them in the space provided below and keep for future reference.

MODEL NUMBER \_\_\_\_\_ DMR-E55 \_\_\_\_\_

SERIAL NUMBER \_\_\_\_\_

### User memo:

DATE OF PURCHASE \_\_\_\_\_

DEALER NAME \_\_\_\_\_

DEALER ADDRESS \_\_\_\_\_

TELEPHONE NUMBER \_\_\_\_\_

# Limited Warranty (ONLY FOR U.S.A.)

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 DVD Recorder 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 or Part Name	Parts	Labor
DVD Recorder	One (1) Year	One (1) Year
Rechargeable Batteries, DVD-RAM Disc (in exchange for defective item)	Ten (10) Days	Not Applicable

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 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 or Mail-In Service

For Carry-In or Mail-In Service in the United States call 1-800-211-PANA (7262) 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.

### 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. 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, travel to and from the servicer, loss of media or images, data or other 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 WHICH ARE NOT COVERED BY THIS LIMITED WARRANTY ARE YOUR RESPONSIBILITY.**

Reference

## 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](mailto: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

F1003

# Limited Warranty (ONLY FOR CANADA)

Panasonic Canada Inc.  
5770 Ambler Drive, Mississauga, Ontario L4W 2T3

## PANASONIC/TECHNICS PRODUCT—LIMITED WARRANTY

Panasonic Canada Inc. warrants this product to be free from defects in material and workmanship and agrees to remedy any such defect for a period as stated below from the date of original purchase.

### Panasonic DVD Recorder One (1) year, parts and labour

#### **LIMITATIONS AND EXCLUSIONS**

This warranty does not apply to products purchased outside Canada or to any product which has been improperly installed, subjected to usage for which the product was not designed, misused or abused, damaged during shipping, or which has been altered or repaired in any way that affects the reliability or detracts from the performance, nor does it cover any product which is used commercially. Dry cell batteries are also excluded from coverage under this warranty.

This warranty is extended to the original end user purchaser only. A purchase receipt or other proof of date of original purchase is required before warranty service is performed.

**THIS EXPRESS, LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, EXCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.**

**IN NO EVENT WILL PANASONIC CANADA INC. BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES.**

In certain instances, some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, or the exclusion of implied warranties, so the above limitations and exclusions may not be applicable.

#### **WARRANTY SERVICE**

**For product operation and information assistance**, please contact your Dealer or our Customer Care Centre at: Telephone #: (905) 624-5505 Fax #: (905) 238-2360 Web: [www.panasonic.ca](http://www.panasonic.ca)

**For product repairs**, please contact one of the following:

- Your Dealer who will inform you of an authorized Servicentre nearest you.
- Our Customer Care Centre at (905) 624-5505 or [www.panasonic.ca](http://www.panasonic.ca)
- A Panasonic Factory Servicentre listed below:

#### Richmond, British Columbia

Panasonic Canada Inc.  
12111 Riverside Way  
Richmond, BC  
V6W 1K8  
Tel: (604) 278-4211  
Fax: (604) 278-5627

#### Calgary, Alberta

Panasonic Canada Inc.  
6835-8<sup>th</sup> St. N. E.  
Calgary, AB  
T2E 7H7  
Tel: (403) 295-3955  
Fax: (403) 274-5493

#### Mississauga, Ontario

Panasonic Canada Inc.  
5770 Ambler Dr.  
Mississauga, ON  
L4W 2T3  
Tel: (905) 624-8447  
Fax: (905) 238-2418

#### Lachine, Québec

Panasonic Canada Inc.  
3075, rue Louis A. Amos  
Lachine, QC  
H8T 1C4  
Tel: (514) 633-8684  
Fax: (514) 633-8020

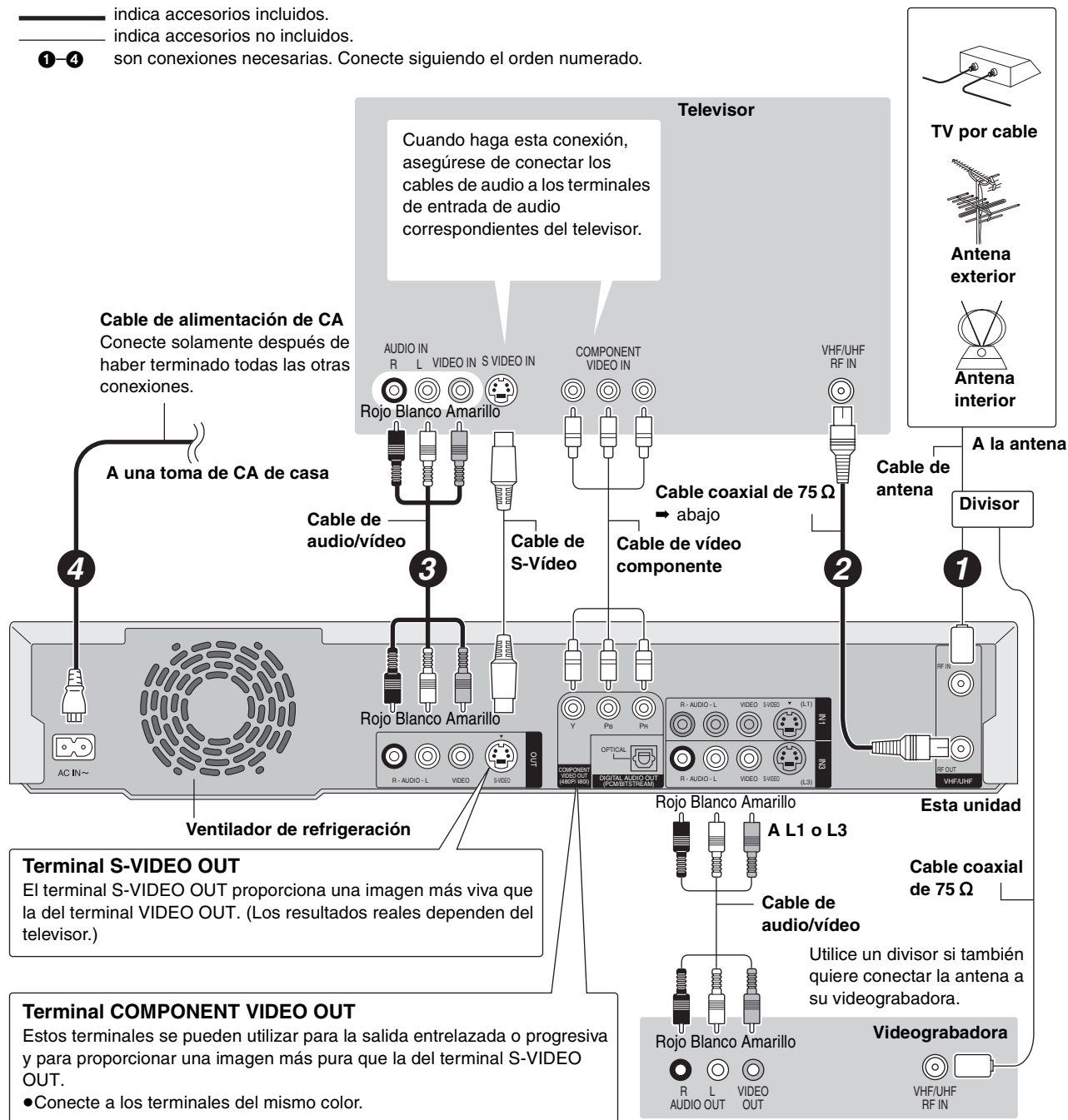
#### **IF YOU SHIP THE PRODUCT TO A SERVICENTRE**

Carefully pack and send prepaid, adequately insured and preferably in the original carton.  
Include details of the defect claimed, and proof of date of original purchase.

- Las conexiones del equipo descritas son ejemplos.
- Antes de hacer la conexión, apague todos los equipos y lea los manuales de instrucciones apropiados.
- El equipo periférico y los cables opcionales se venden por separado a menos que se indique lo contrario.

## Conexión de un televisor y videgrabadora

- indica accesorios incluidos.
- - - indica accesorios no incluidos.
- ①-④ son conexiones necesarias. Conecte siguiendo el orden numerado.



**Cable de alimentación de CA**  
Conecte solamente después de haber terminado todas las otras conexiones.

A una toma de CA de casa

Cable de audio/vídeo

Cable de S-Video

Cable coaxial de 75 Ω  
→ abajo

Cable de antena

A la antena

Ventilador de refrigeración

### Terminal S-VIDEO OUT

El terminal S-VIDEO OUT proporciona una imagen más viva que la del terminal VIDEO OUT. (Los resultados reales dependen del televisor.)

### Terminal COMPONENT VIDEO OUT

Estos terminales se pueden utilizar para la salida entrelazada o progresiva y para proporcionar una imagen más pura que la del terminal S-VIDEO OUT.

- Conecte a los terminales del mismo color.

Esta unidad

Cable de audio/vídeo

Cable de audio/vídeo

Utilice un divisor si también quiere conectar la antena a su videgrabadora.

Videgrabadora

### ■ Cable coaxial de 75 Ω

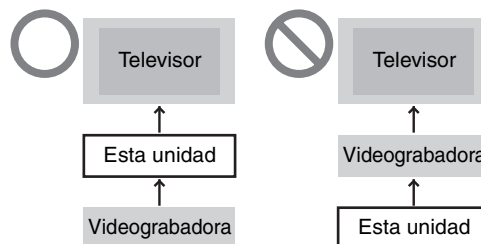
La señal de imagen y sonido procedente de este aparato no pasa a través del cable coaxial de 75 Ω al televisor. Asegúrese de conectar uno de los terminales siguientes de este aparato al televisor: el terminal AUDIO/VIDEO OUT, el terminal S-VIDEO OUT o el terminal COMPONENT VIDEO OUT. Si el televisor no tiene ninguno de estos terminales, consulte a su concesionario local.

### ■ Cuando el aparato no se utilice durante mucho tiempo

Para ahorrar energía, desenchufe el aparato de la toma de CA de casa. El aparato consume una pequeña cantidad de energía aunque está apagado (2,9 W aproximadamente).

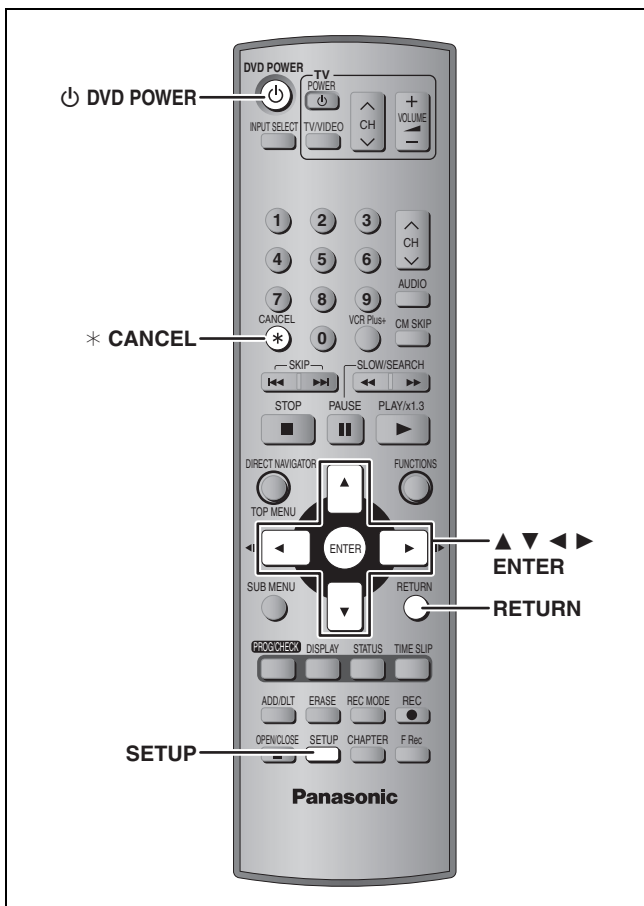
### ■ No conecte la unidad a través de una videgrabadora

Las señales de vídeo que pasan a través de videgrabadoras afectarán a los sistemas de protección del copyright, y la imagen no se mostrará correctamente en el televisor.



- Cuando conecte a un televisor con videgrabadora incorporada, conecte a los terminales de entrada del televisor, no a los de la videgrabadora.



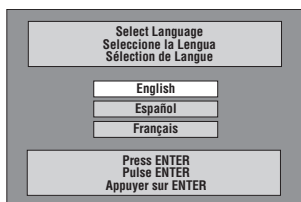


## Sintonización automática al enchufar

### Preparación

- Encienda el televisor y seleccione la entrada de vídeo apropiada a las conexiones de esta unidad.
- Si conecta el aparato a través de una caja de TV por cable o receptor de satélite, sintonice su PBS local para hacer la puesta en hora automática del reloj. Si no hay PBS local, ponga la hora manualmente en la pantalla "Ajuste manual del reloj".

### 1 Pulse [DVD POWER].



### 2 Pulse [▲, ▼] para seleccionar "Español" y pulse [ENTER].

### 3 Pulse [ENTER] para iniciar la sintonización automática al enchufar.

La unidad prosigue luego con Ajuste automático reloj. La hora se visualiza al terminar.

### 4 Pulse [ENTER].

#### ■ Si el reloj va una hora retrasado o adelantado con relación a la hora actual

- 1 Pulse [SETUP] para mostrar el menú SETUP.
- 2 Ponga "-1" o "+1" en "Ajuste del huso horario" en la ficha "Configuración" utilizando [▲, ▼, ◀, ▶] y [ENTER].
- 3 Pulse [SETUP] para salir.

#### ■ Si la unidad no puede ajustar el reloj automáticamente

Ponga manualmente la hora en la pantalla "Ajuste manual del reloj".

## Ajuste de canales guía VCR Plus+

Establezca estos canales guía para poder utilizar el número de programación VCR Plus+ para la grabación con temporizador. Antes de iniciar los ajustes, prepare una gráfica que muestre los canales, nombres de emisoras y canales guía.

Ej.,

Nombre de emisora	Canal guía	Número de canal	Ajuste de canal
CBS	04	04	No es necesario
HBO	33	15	Introduzca el canal 15 a continuación del canal guía 33.
Nickelodeon	38	20	Introduzca el canal 20 a continuación del canal guía 38.

Mire cuáles son los canales guía para las emisoras en revistas. Anote todas las emisoras que pueda recibir.

- Si ha conectado una caja de TV por cable o un receptor de satélite, el sistema VCR Plus+ no funcionará si usted no ha establecido los canales guía.

- 1 Pulse [SETUP].
- 2 Pulse [▲, ▼] para seleccionar "Canal" y pulse [▶].
- 3 Pulse [▲, ▼] para seleccionar "VCR Plus+ Ajuste canal" y pulse [ENTER].
- 4 Pulse [▲, ▼] para seleccionar el canal guía que quiere establecer y pulse [▶].
- 5 Pulse [▲, ▼] para seleccionar el canal correspondiente al canal guía y pulse [◀].  
Para borrar un número, pulse [\* CANCEL].  
Repita los pasos 4 y 5 para introducir otros canales.
- 6 Pulse [ENTER].

#### Para salir de la pantalla

Pulse [SETUP].

#### Para volver a la pantalla anterior

Pulse [RETURN].

## Selección del tipo de televisor

No tiene que cambiar el ajuste cuando conecte a un televisor de aspecto estándar 4:3 que no sea compatible con salida progresiva.

- 1 Pulse [SETUP].
- 2 Pulse [▲, ▼] para seleccionar "Pantalla TV" y pulse [▶].
- 3 Pulse [▲, ▼] para seleccionar "Tipo TV" y pulse [ENTER].

- Aspecto 4:3/Aspecto 16:9:



- 480P/480I: Seleccione "480P" si el televisor es compatible con salida progresiva.

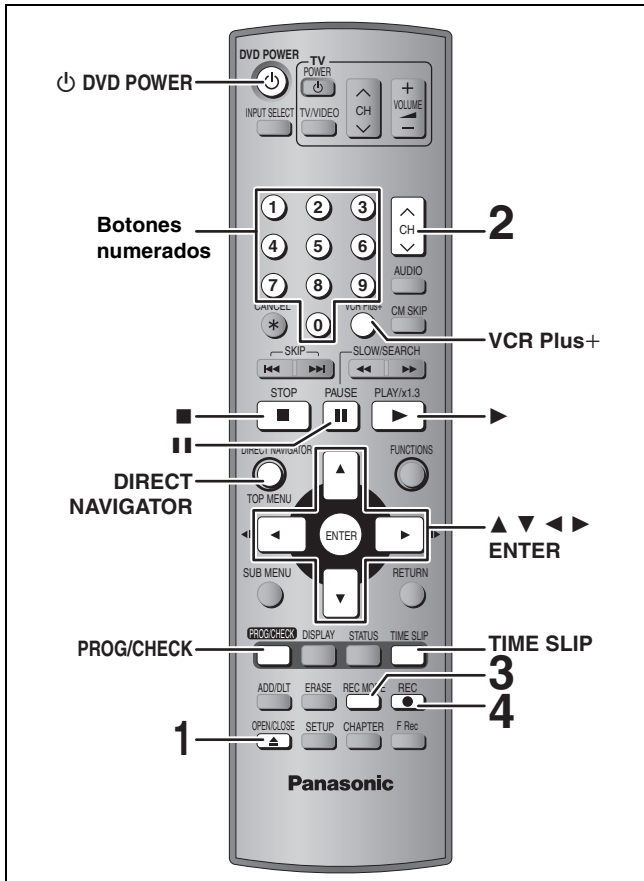
- 4 Pulse [▲, ▼] para seleccionar el elemento y pulse [ENTER].

#### Para salir de la pantalla

Pulse [SETUP].

#### Para volver a la pantalla anterior

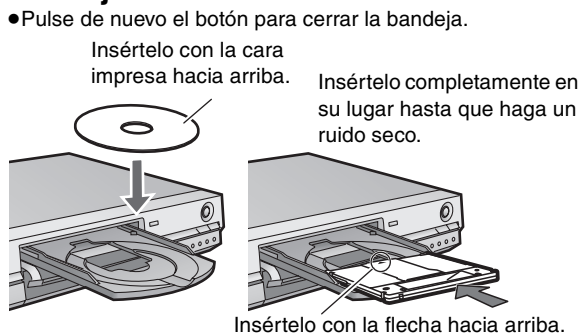
Pulse [RETURN].



**RAM DVD-R**

- No es posible grabar continuamente desde una cara a la otra en un disco de dos caras. Tendrá que expulsar el disco y darlo la vuelta.
- Cuando utilice discos DVD-RAM de 8 cm (3"), retire el disco del cartucho.
- Puede grabar hasta 99 títulos en un disco.
- No es posible grabar material protegido CPRM (protección del contenido de medios grabables) en discos DVD-R o DVD-RAM de 2,8 GB.

**1 Pulse [▲ OPEN/CLOSE] para abrir la bandeja e introducir un disco.**



**2 Pulse [▲ ▼ CH] para seleccionar el canal.**

Para seleccionar con los botones numerados:

**Modo de TV (del aire)**

Ej., 5: [0] → [5]  
15: [1] → [5]

**Modo CATV (Cable)**

Ej., 5: [0] → [0] → [5]  
15: [0] → [1] → [5]  
115: [1] → [1] → [5]

**3 Pulse [REC MODE] para seleccionar el modo de grabación (XP, SP, LP o EP).**

**4 Pulse [● REC] para empezar a grabar.**

La grabación se hará en el espacio vacío del disco. Los datos no se escribirán encima de otros.

- Durante la grabación no se puede cambiar el canal ni el modo de grabación.

**■ Para detener la grabación**

**Pulse [■].**

Grabado como 1 título hasta la posición donde paró.

**■ Para hacer una pausa en la grabación**

**Pulse [||].**

Pulse de nuevo para reiniciar la grabación.

(El título no se divide en un título separado.)

**■ Para especificar un tiempo y detener la grabación Durante la grabación**

**Pulse [● REC] para seleccionar el tiempo de grabación.**

**■ Modo de grabación**

Dependiendo del contenido que está siendo grabado, los tiempos de grabación pueden ser inferiores a los indicados.

(Unidad: hora)

Modo	DVD-RAM		DVD-R (4,7 GB)
	Una cara (4,7 GB)	Dos caras (9,4 GB)	
XP (Alta calidad)	1	2	1
SP (Normal)	2	4	2
LP (Duración larga)	4	8	4
EP (Duración extralarga)	8 (6*)	16 (12*)	8 (6*)

\* Cuando "Tiempo de grab. en el modo EP" se haya puesto en "EP (6H)" en el menú SETUP.

La calidad del sonido es mejor cuando se utiliza "EP (6H)" que cuando se utiliza "EP (8H)".

**■ Utilización del número VCR Plus+ para hacer grabaciones con temporizador**

Durante la parada

- 1 Pulse [VCR Plus+].
- 2 Pulse los botones numerados para introducir el número VCR Plus+ y pulse [ENTER].
- 3 Haga las correcciones necesarias utilizando [▲, ▼, ◀, ▶].
- 4 Pulse [ENTER].
- 5 Repita los pasos 1-4 para programar otras grabaciones.
- 6 Pulse [PROG/CHECK].

"Ⓞ" se enciende en el visualizador de la unidad.

**Reproducción mientras usted está grabando**

**RAM**

Reproducción con presecución	Puede empezar a reproducir desde el comienzo del título que está grabando. <b>Pulse [▶] (PLAY).</b> El indicador de salto hacia atrás de la unidad principal se enciende.
Grabación y reproducción simultáneas	Puede reproducir un título grabado previamente. <b>1 Pulse [DIRECT NAVIGATOR].</b> <b>2 Pulse [▲, ▼, ◀, ▶] para seleccionar un título y pulse [ENTER].</b> • Para salir de la pantalla Direct Navigator Pulse [DIRECT NAVIGATOR].
Time Slip	Puede revisar las imágenes grabadas mientras graba. <b>1 Pulse [TIME SLIP].</b> <b>2 Pulse [▲, ▼] para seleccionar el tiempo y pulse [ENTER].</b> • Pulse [TIME SLIP] para mostrar las imágenes de reproducción completas. Pulse de nuevo para mostrar las imágenes de reproducción y grabación.

**■ Para detener la reproducción**

**Pulse [■].**

**■ Para detener la grabación**

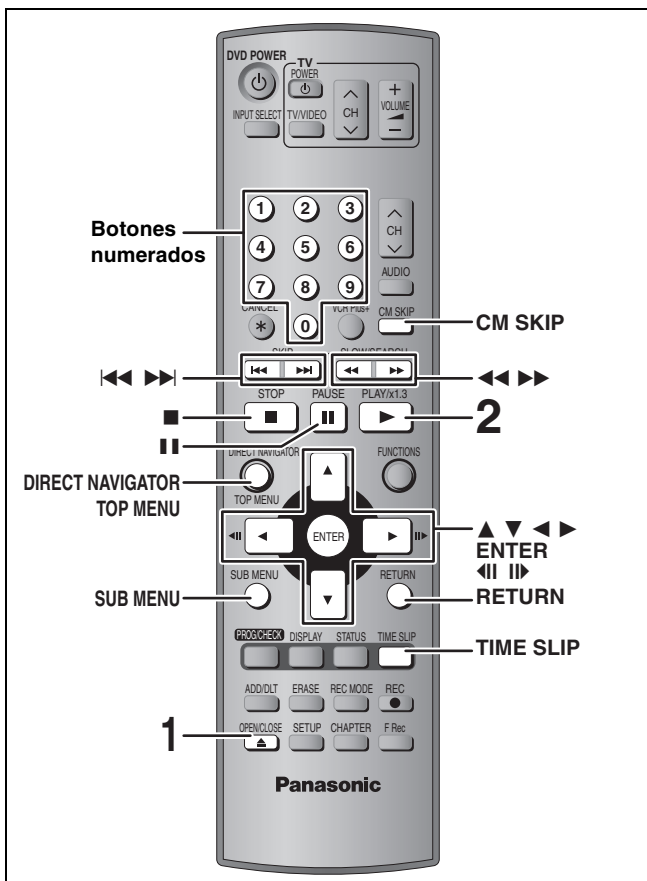
2 segundos después se detiene la reproducción

**Pulse [■].**

**■ Para detener la grabación con temporizador**

**Pulse [■] y luego [ENTER] antes de que pasen 5 segundos.**

- También puede mantener pulsado [■] en el aparato principal durante más de 3 segundos para detener la grabación.



- No es posible reproducir continuamente desde una cara a la otra en un disco de dos caras. Tendrá que expulsar el disco y darlo la vuelta.
- Cuando utilice discos DVD-RAM de 8 cm (3"), retire el disco del cartucho.

## 1 Pulse [▲ OPEN/CLOSE] para abrir la bandeja e introducir un disco.

- Pulse de nuevo el botón para cerrar la bandeja.

## 2 Pulse [▶] (PLAY).

**RAM DVD-R**

La reproducción empieza desde el título grabado más recientemente.

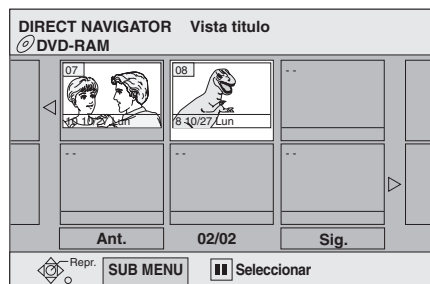
**DVD-A DVD-V VCD CD**

La reproducción empieza desde el comienzo del disco.

## ■ Selección de programas (títulos) grabados para reproducir

**RAM DVD-R**

### 1 Pulse [DIRECT NAVIGATOR].



### 2 Pulse [▲, ▼, ◀, ▶] para seleccionar el título y pulse [ENTER].

También puede seleccionar títulos con los botones numerados.  
Ej., 5: [0] → [5] 15: [1] → [5]

### Para salir de la pantalla

Pulse [DIRECT NAVIGATOR].

## ■ Cuando aparece una pantalla de menú en el televisor

**DVD-A DVD-V**

Pulse [▲, ▼, ◀, ▶] para seleccionar el elemento y pulse [ENTER]. Algunos elementos también se pueden seleccionar con los botones numerados.

**VCD**

Pulse los botones numerados para seleccionar el elemento.

Ej., 5: [0] → [5] 15: [1] → [5]

• Para volver a la pantalla de menú

**DVD-A** Pulse [TOP MENU].

**DVD-V** Pulse [TOP MENU] o [SUB MENU].

**VCD** Pulse [RETURN].

## Operaciones durante la reproducción

Parada	<p><b>Pulse [■].</b> La posición de parada se memoriza. "PLAY" parpadea en el visualizador del aparato. (Excepto cuando se reproduce desde Direct Navigator y cuando se reproduce una lista de reproducción.)</p> <p><b>Función de reanudación de la reproducción</b> Pulse [▶] (PLAY) para reanudar la reproducción desde esta posición.</p>
Pausa	<p><b>Pulse [⏸].</b> Pulse de nuevo para reiniciar la reproducción.</p>
Búsqueda	<p><b>Pulse [◀◀] o [▶▶].</b> • En el aparato principal, mantenga pulsado [◀◀/◀◀] o [▶▶/▶▶]. • La velocidad aumenta hasta 5 pasos. • Pulse [▶] (PLAY) de nuevo para reiniciar la reproducción.</p>
Salto	<p><b>Pulse [◀◀◀] o [▶▶▶].</b> • En el aparato principal, pulse [◀◀/◀◀] o [▶▶/▶▶]. • Cada pulsación aumenta el número de saltos.</p>
Inicio desde un elemento seleccionado	<p><b>Pulse los botones numerados.</b> Ej., 5: [0] → [5] 15: [1] → [5] [CD] (Discos MP3 solamente) 5: [0] → [0] → [5] 15: [0] → [1] → [5]</p> <p><b>DVD-A</b> Selección de un grupo Durante la parada (el salvapantallas se visualiza en el televisor) 5: [5] • Esto sólo funciona durante la parada con algunos discos (el salvapantalla está en el televisor).</p>
Visión rápida <b>RAM</b>	<p>La velocidad de reproducción puede aumentar sin distorsionar el audio. <b>Mantenga pulsado [▶] (PLAY/×1.3).</b> • Pulse de nuevo para volver a la velocidad normal.</p>
Cámara lenta <b>RAM DVD-R DVD-A</b> (Parte de imagen en movimiento solamente) <b>DVD-V VCD</b>	<p><b>Durante la pausa, pulse [◀◀] o [▶▶].</b> • En el aparato principal, mantenga pulsado [◀◀/◀◀] o [▶▶/▶▶]. • La velocidad aumenta hasta 5 pasos. • Pulse [▶] (PLAY) de nuevo para reiniciar la reproducción. • Sentido de avance solamente. <b>VCD</b></p>
Cuadro a cuadro <b>RAM DVD-R DVD-A</b> (Parte de imagen en movimiento solamente) <b>DVD-V VCD</b>	<p><b>Durante la pausa, pulse [⏸] o [⏹].</b> • Cada pulsación muestra el cuadro siguiente. • Pulse [▶] (PLAY) para reiniciar la reproducción. • Sentido de avance solamente. <b>VCD</b></p>
Visualización de la imagen de televisión en el modo de imagen en imagen	<p><b>Pulse [TIME SLIP].</b> El aparato visualiza la imagen de televisión en el modo de imagen en imagen. • Pulse de nuevo [TIME SLIP] para cancelar.</p>
Salto del tiempo especificado (Time Slip) <b>RAM DVD-R</b>	<p><b>1 Pulse [TIME SLIP].</b> <b>2 Pulse [▲, ▼] para seleccionar el tiempo y pulse [ENTER].</b> La reproducción salta el tiempo especificado. • Pulse [TIME SLIP] para mostrar las imágenes de reproducción completas.</p>
Salto CM <b>RAM DVD-R</b>	<p>La reproducción se reanuda un minuto después aproximadamente. <b>Pulse [CM SKIP].</b></p>

<b>Angle</b> .....	26	<b>Enter name</b>		<b>PCM Down Conversion</b> .....	37
<b>Antenna system</b> .....	11	disc .....	33	<b>Picture</b> .....	27
<b>Audio</b>		play list .....	31	<b>Play list</b> .....	30
attribute .....	26	title .....	19, 20, 29	<b>Progressive</b> .....	27, 40
language .....	36	<b>Erase</b>		<b>Properties</b>	
playback .....	24	chapter .....	29	play list .....	31
receiving, recording .....	17	chapter in play list .....	31	title .....	29
<b>Channel</b>		play list .....	31	<b>Protection</b>	
adding, deleting .....	11	title .....	24, 29	cartridge .....	15
audio .....	26	<b>Finalize</b> .....	33, 40	disc .....	33
Auto Channel Setting .....	11	<b>Flexible Recording</b> .....	18	title .....	29
captions .....	13	<b>Format disc</b> .....	33	<b>Quick View</b> .....	23
VCR Plus+ guide channel .....	12	<b>FR (Flexible Recording Mode)</b> .....	17	<b>Ratings level</b> .....	36
<b>Change Thumbnail</b> .....	29	<b>FUNCTIONS window</b> .....	35	<b>Recording</b>	
<b>Chasing playback</b> .....	17	<b>Language</b>		Flexible Recording .....	18
<b>Cleaning</b>		audio .....	36	mode .....	17
disc .....	15	code list .....	40	timer .....	19-21
lens .....	39	on-screen .....	37	<b>Re-initialize settings</b> .....	36
main unit .....	39	sound track .....	26	<b>Repeat play</b> .....	27
<b>Clock setting</b> .....	38	subtitle .....	26, 36	<b>Resume play function</b> .....	23
<b>CM Skip</b> .....	23	<b>Menu</b>		<b>SETUP menu</b> .....	36
<b>Connection</b>		MP3 .....	25	<b>Shorten (titles)</b> .....	29
amplifier, system component .....	9	on-screen .....	26	<b>Simultaneous rec and play</b> .....	17
antenna .....	7, 8	SETUP .....	36	<b>Sound track</b> .....	26
cable TV box, satellite receiver .....	8	<b>Mode</b>		<b>Status messages</b> .....	35
L2 input terminals .....	18	recording .....	17	<b>Subtitle</b> .....	26
television .....	7	Still Mode .....	36	<b>Time Slip</b> .....	17, 23
video cassette recorder .....	7, 18	<b>MPEG-DNR</b> .....	27	<b>Timer recording</b> .....	19-21
<b>Copy (play list)</b> .....	31	<b>MP3</b> .....	25	<b>Transfer</b> .....	27
<b>CPRM</b> .....	40	<b>Noise reduction (NR)</b>		<b>TV Type</b> .....	14
<b>Create play lists</b> .....	30	MPEG-DNR .....	27	<b>VCR Plus+</b>	
<b>Dialog Enhancer</b> .....	27	Line-in NR .....	36	guide channel .....	12
<b>Direct Navigator</b> .....	28	<b>On-screen</b>		timer recording .....	19
<b>Divide Chapter</b> .....	29	language .....	37	<b>V.S.S.</b> .....	27
<b>DVD-RAM, DVD-R</b> .....	15	menus .....	26		
		Status messages .....	35		

<b>DANGER</b> - VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM. (FDA 21 CFR)
<b>CAUTION</b> - VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM. (IEC 60825-1)
<b>ATTENTION</b> - RAYONNEMENT LASER VISIBLE ET INVISIBLE EN CAS D'OUVERTURE. EXPOSITION DANGEREUSE AU FAISCEAU.
<b>ADVARSEL</b> - SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING. UNGDÅ UDSÆTTELSE FOR STRÅLING.
<b>VARO!</b> - AVATTAESSA OLET ÄLTTIINÄ NÄKYVÄÄ JA NÄKYMÄTÖN LASERSTRÄLLEÄ ÄLÄ KATSO SÄTTEEN.
<b>WARNING</b> - SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD. BETRÄKTA EJ STRÅLEN.
<b>ADVARSEL</b> - SYNLIG OG USYNLIG LASERSTRÅLING NÄR DEKSEL ÅPNES. UNGGÅ EKSPONERING FOR STRÅLEN.
<b>VORSICHT</b> - SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN.
<b>注意</b> - 打开时有可见及不可见激光辐射。避免激光束照射。
<b>注意</b> - ここを開くと可視及び不可視のレーザー光が出ます。ビームを直接見たり、照れに当たらないでください。 RQLS0233

(Inside of product)



Except for U.S.A. and Canada

This product may receive radio interference caused by mobile telephones during use. If such interference is apparent, please increase separation between the product and the mobile telephone.

**Except for U.S.A. and Canada**

The socket outlet shall be installed near the equipment and easily accessible or the mains plug or an appliance coupler shall remain readily operable.

**For units with PX printed on the outer packaging**  
THIS UNIT IS INTENDED FOR USE IN MODERATE CLIMATES.

**For U.S.A.**

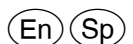
Panasonic Consumer Electronics Company, Division of Matsushita Electric Corporation of America  
One Panasonic Way Secaucus, New Jersey 07094  
<http://www.panasonic.com>

**For units with PX printed on the outer packaging**

Matsushita Electric Industrial Co., Ltd.  
Corporate Management Division for the Americas  
Sales Office for North America  
Tokyo Panasonic Sales Section  
32nd Floor, World Trade Center 4-1,  
Hamamatsu-cho, 2-Chome, Minato-Ku,  
Tokyo 105-6132, Japan

**For Canada**

Panasonic Canada Inc.  
5770 Ambler Drive  
Mississauga, Ontario  
L4W 2T3  
[www.panasonic.ca](http://www.panasonic.ca)



Panasonic Sales Company,  
Division of Matsushita Electric of Puerto Rico, Inc. ("PSC")  
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Puerto Rico 00985

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