Operating Instructions

DVD Video Recorder

Model No. **DMR-E55**

Panasonic®

DVD VIDEO RAM

DVD AUDIO

COMPACT disc DIGITAL VIDEO

RAM COMPATIBLE RECORDER
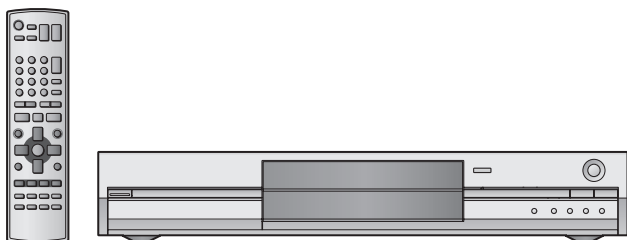
G-CODE ®

DIGA
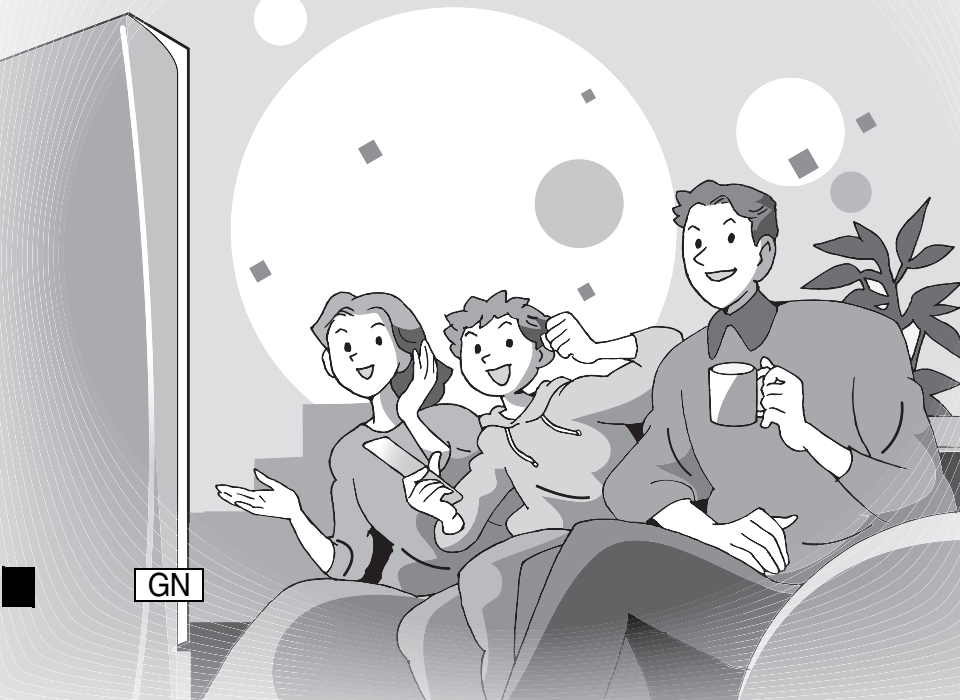
Region number supported by this unit

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

- The region number of this unit is "**4**".
- The unit will play DVDs marked with labels containing "**4**" or "**ALL**".

Example:

4 **ALL** **2 3 4**

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.

GN

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.**

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.**

THIS UNIT IS INTENDED FOR USE IN MODERATE CLIMATES.

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.

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

CLASS 1
LASER PRODUCT
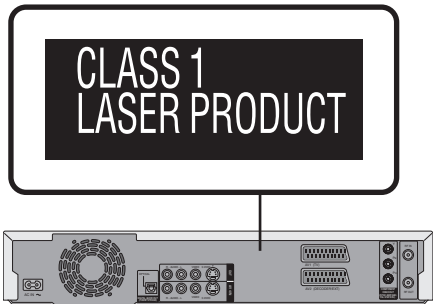
DANGER	– VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN.
	AVOID DIRECT EXPOSURE TO BEAM. (FDA 21 CFR)
CAUTION	– VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN.
	AVOID EXPOSURE TO BEAM. (IEC60825-1)
ATTENTION	– RAYONNEMENT LASER VISIBLE ET INVISIBLE EN CAS D'OUVERTURE.
	EXPOSITION DANGEREUSE AU FAISCEAU.
ADVARSEL	– SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING.
	UNDGÅ UDSÆTTELSE FOR STRÅLING.
VARO!	– AVATTAESSA OLET ALTTIINA NÄKYVÄÄ JA NÄKYMÄTÖN
	LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.
VARNING	– SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL
	ÄR ÖPPNAD. BETRAKTA EJ STRÅLEN.
ADVARSEL	– SYNLIG OG USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES.
	UNNGÅ EKSPONERING FOR STRÅLEN.
VORSICHT	– SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG
	GEÖFFNET. NICHT DEM STRAHL AUSSETZEN.
注 意	– 打开时有可见及不可见激光辐射。避免激光束照射。
注 意	– 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、触れたりしないでください。 RQLS0233

(Inside of product)

Table of contents

Useful features

This DVD Video recorder records high quality images to rapid random access capable DVD-RAM media. This has resulted in many new features that out perform 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 programme 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.

Accessories
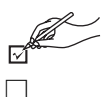
Please check and identify the supplied accessories.

☐ | ☐ | ☐ | ☐ | ☐

1 Remote control (EUR7720KC0)

1 AC mains lead
●For use with this unit only. Do not use it with other equipment.

1 RF coaxial cable
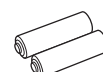
2 Batteries for remote control

1 Audio/video cable

The remote control

■ Batteries

R6, LR6, AA, UM-3
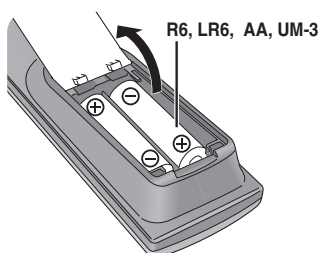
●Insert so the poles (+ and −) match those in the remote control.
●Do not use rechargeable type batteries.
●Do not mix old and new batteries.
●Do not use different types at the same time.
●Do not heat or expose to flame.
●Do not take apart or short circuit.
●Do not attempt to recharge alkaline or manganese 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 11).

■ Use
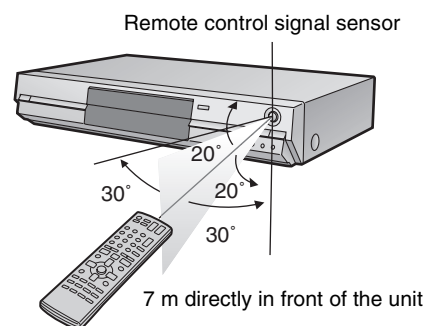
Remote control signal sensor

20˚
30˚
20˚
30˚

7 m directly in front of the unit

Control reference guide

Remote control

Turn the unit on (➡page 9)

Input select (AV3 or AV4)

Select channels and title numbers etc./
Enter numbers

Cancel

Basic operations for recording and play

Show Top menu/Direct navigator (➡page 20, 26)

Show sub menu (➡page 26)
Show on-screen menu (➡page 24)
Show timer recording programme screen (➡page 18)
Erase items (➡page 22)
Programme recording standby/release
(➡page 17, 18)

Manual tuning operation (➡page 38)

Television operations (➡page 11)

Channel select (➡page 14)

Show G-CODE screen (➡page 17)
Skip 30 seconds forward (➡page 21)

Show FUNCTIONS window (➡page 33)

Selection/Enter, Frame-by-frame (➡page 9, 21)

Return to previous screen

Show status messages (➡page 33)
Skip the specified time/Display the television image
as a picture-in-picture (➡page 15, 21)
Change recording mode (➡page 14)
Start recording (➡page 14)
Select audio (➡page 22)
Create chapter (➡page 22)

Panasonic

Main unit

Standby/on switch (⏻/I) (➡page 9)
Press to switch the unit from on to standby mode or vice
versa. In standby mode, the unit is still consuming a
small amount of power.

Disc tray (➡page 14, 20)

Open/close disc tray (➡page 14, 20)

Start play (➡page 20)
Start recording (➡page 14)
Remote control signal sensor

Stop (➡page 14, 21)

Panasonic

Display (➡below)

Time slip indicator (➡page 15)

Connection for camcorder etc.
(➡page 16)

Skip the specified time/Display the television image as
a picture-in-picture (➡page 15, 21)
Channel select (➡page 14)
Skip/Slow/Search (➡page 21)
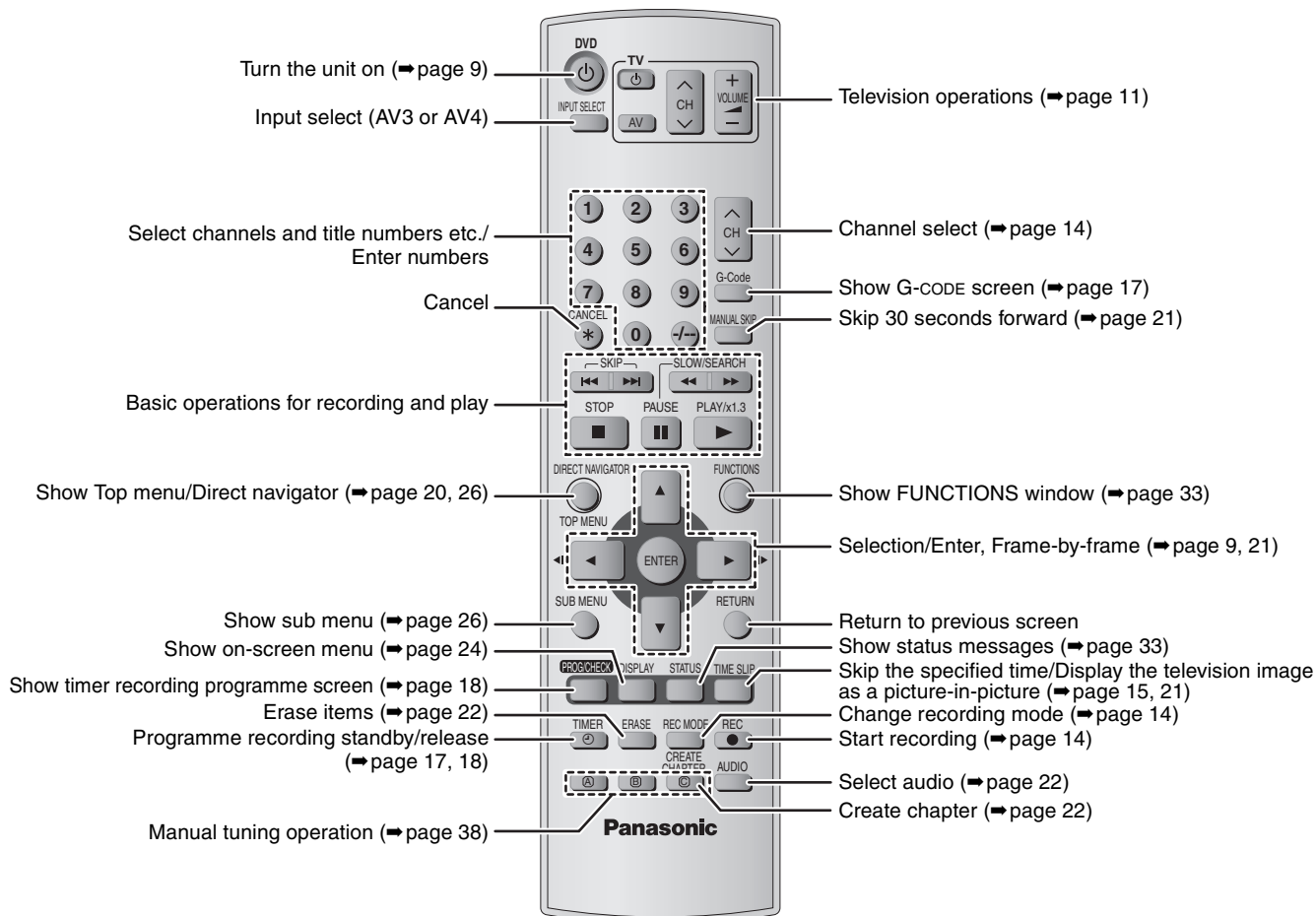
Rear panel terminals (➡page 7)

The unit's display

D.MIX (multi-channel DVD-Audio only)
When lit: down-mixed audio is played.
When off: the disc prevents down-mixing so on the two front channels can
            be played.

Recording mode
Timer recording indicator

Disc type

Recording	Playback	Recording/Playback
REC	PLAY	PLAY REC

Main display section
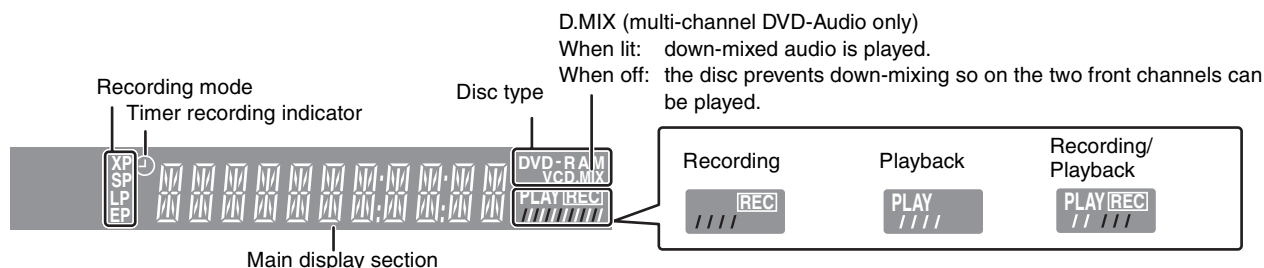
STEP 1 Connection

- ≥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.

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

Television

Amplifier

From AUDIO/VIDEO OUT or
COMPONENT VIDEO OUT terminals

From AUDIO OUT terminals or
DIGITAL AUDIO OUT terminal
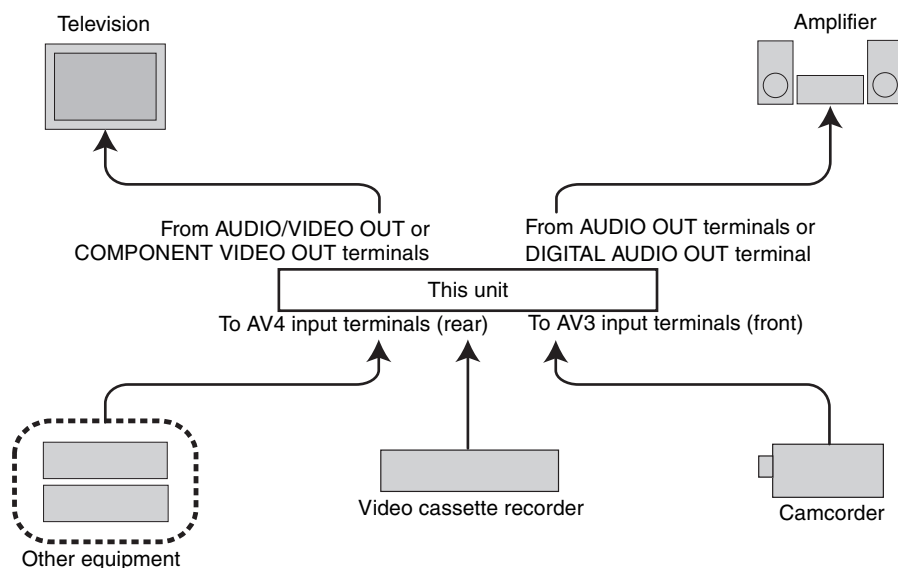
This unit

To AV4 input terminals (rear)

To AV3 input terminals (front)

Other equipment

Video cassette recorder

Camcorder

■ 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.

✔ Television

This unit

VCR

✘ Television

VCR
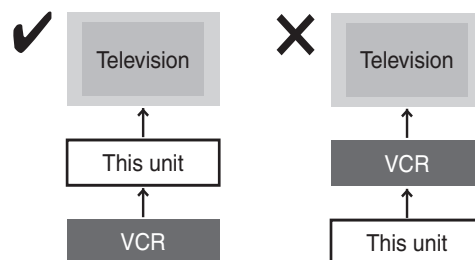
This unit

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

To save power, unplug it from the household mains socket. This unit consumes a small amount of power, even when it is turned off (approx. 3 W).

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

Connecting a television with AUDIO/VIDEO, S-VIDEO or COMPONENT VIDEO terminals and VCR

——— indicates included accessories.

——— indicates accessories not included.

➊ — ➍ are required connections. Connect in the numbered order.

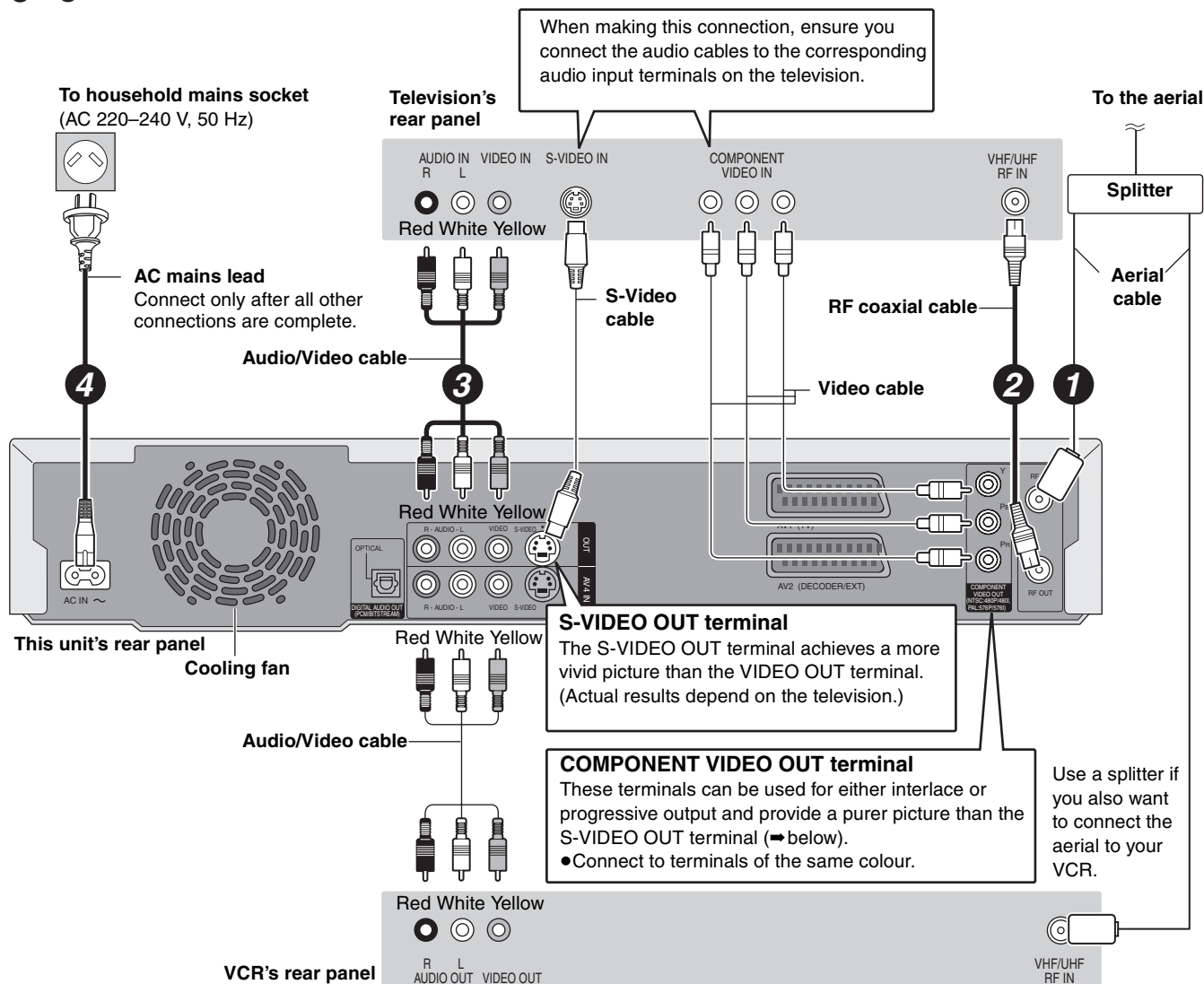When making this connection, ensure you connect the audio cables to the corresponding audio input terminals on the television.

To household mains socket
(AC 220–240 V, 50 Hz)

Television's rear panel

AUDIO IN VIDEO IN S-VIDEO IN   COMPONENT VIDEO IN   VHF/UHF RF IN
R   L
Red White Yellow

To the aerial

Splitter

Aerial cable

AC mains lead
Connect only after all other connections are complete.

➍

S-Video cable

RF coaxial cable

Audio/Video cable

Video cable

➌   ➋   ➊

AC IN ~

Red White Yellow

OPTICAL

DIGITAL AUDIO OUT (PCM/BITSTREAM)

R - AUDIO - L   VIDEO S-VIDEO

AV2 (DECODER/EXT)

COMPONENT VIDEO OUT (NTSC:480P/480I PAL:576P/576I)

RF OUT

This unit's rear panel
Cooling fan

Red White Yellow

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.)

Audio/Video cable

COMPONENT VIDEO OUT terminal
These terminals can be used for either interlace or progressive output and provide a purer picture than the S-VIDEO OUT terminal (➡ below).
● Connect to terminals of the same colour.

Use a splitter if you also want to connect the aerial to your VCR.

Red White Yellow

R L   VIDEO OUT
AUDIO OUT

VCR's rear panel

VHF/UHF RF IN

■ Component video output
Component signal outputs the colour difference signals (P$_B$/P$_R$) and luminance signal (Y) separately in order to achieve high fidelity in reproducing colours. 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 (➡ page 42).

For progressive output (➡ page 10)

■ Connecting to a television with 21-pin Scart terminal
You can also connect with the AV1 terminal on this unit using the 21-pin Scart cable.
If your television is equipped with RGB input capability, by connecting with a fully wired 21-pin Scart cable you can see video using RGB output on this unit.
To output in RGB select "RGB (without component)" from "AV1 Output" in the SETUP menu (➡ page 37).

RGB refers to the three primary colours of light, red (R), green (G), and blue (B) and also the method of producing video that uses them. By dividing the video signal into the three colours for transmission, noise is reduced for even higher quality images.

■ Connecting to a VCR with 21-pin Scart terminal
You can also connect with the AV2 terminal on this unit using the 21-pin Scart cable.
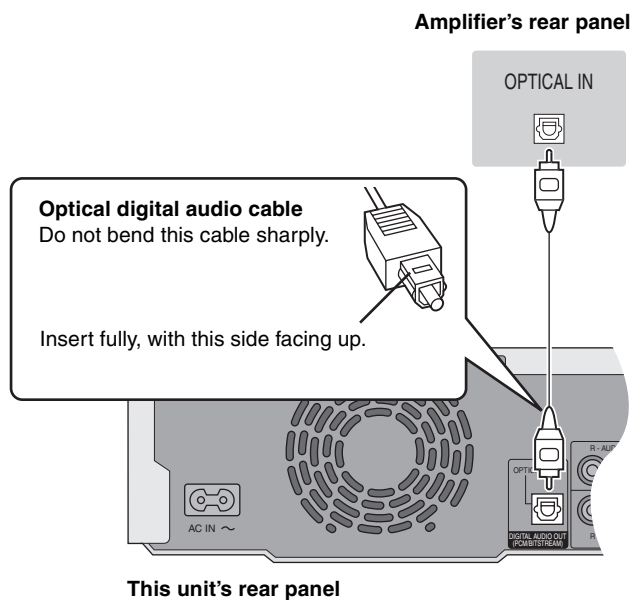To input in RGB select "RGB (Not NTSC)" from "AV2 Input" in the SETUP menu (➡ page 37).

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STEP 1 Connection
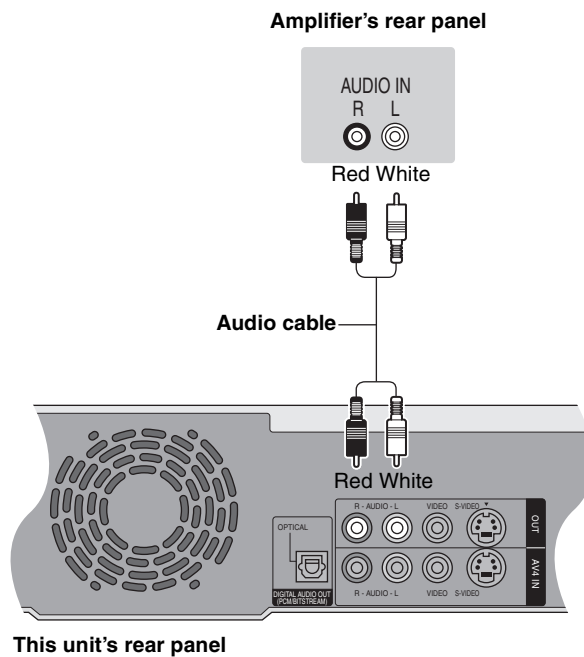
Connecting an amplifier or system component

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

Connect an amplifier with Dolby Digital, DTS and MPEG decoders using an optical digital audio cable and change the settings in "Digital Audio Output" (➡page 36).
- 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.

■ Connection to a stereo amplifier

Amplifier's rear panel

OPTICAL IN

Optical digital audio cable
Do not bend this cable sharply.

Insert fully, with this side facing up.

AC IN ~

This unit's rear panel

Amplifier's rear panel

AUDIO IN
R   L

Red White

Audio cable

Red White

This unit's rear panel

Do not place the unit on amplifiers or equipment that may become hot.
The heat can damage the unit.

STEP 2 TV Tuning

⏻/I

∨ CH ∧

⏻ DVD

Numbered buttons

▲,▼,◀,▶
ENTER

RETURN
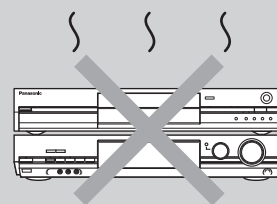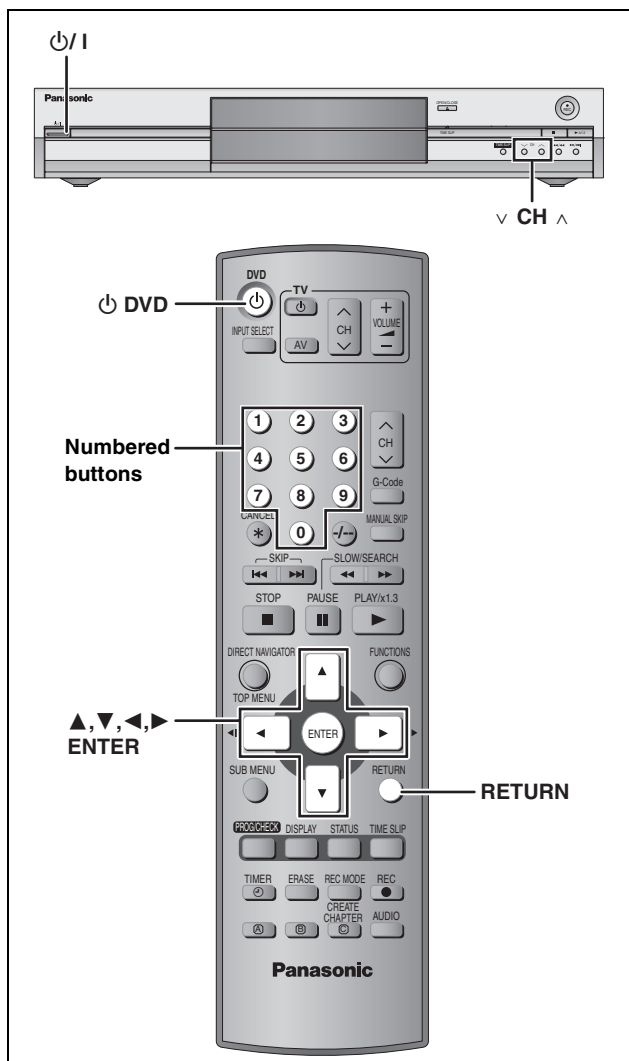
Auto-Setup

When connecting to a television with the corresponding terminal (➡page 7).

This unit's Auto-Setup function automatically tunes all available TV stations.

1 Turn on the television and select the appropriate AV input to suit the connections to this unit.
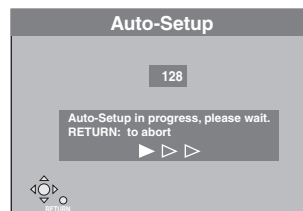
2 Press [⏻ DVD] to turn the unit on.

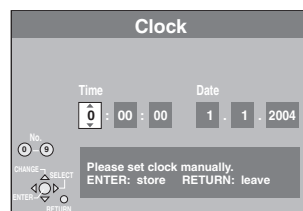The country setting menu appears on the television.

```
          Country

        Australia
        New Zealand
        Others

   SELECT
ENTER
              RETURN

   RETURN : leave   ENTER : access
```

3 Press [▲, ▼] to select the country and press [ENTER].

Auto-Setup starts. This takes about 5 minutes.

```
        Auto-Setup

           128

  Auto-Setup in progress, please wait.
  RETURN: to abort
          ▶ ▷ ▷
```

Auto-Setup is complete when you see the clock setting menu.

```
           Clock

  Time              Date
   0 : 00 : 00     1 . 1 . 2004

  No.
  CHANGE      SELECT
  ENTER
           RETURN
  Please set clock manually.
  ENTER: store   RETURN: leave
```

4 Press [◀, ▶] to select the item you want to change.

This is a 24-hour clock.
The items change as follows:

Hour⟷Minute⟷Second⟷Day⟷Month⟷Year

Reset the clock regularly to maintain accuracy (➡page 40). (Monthly accuracy +/– 15 seconds.)

5 Press [▲, ▼] to change the setting.

You can also use the numbered buttons for setting.

6 Press [ENTER] when you have finished the settings.

The clock starts and the television displays the channel being received.

To stop partway
Press [RETURN].

■ To confirm that stations have been tuned correctly (➡page 38)
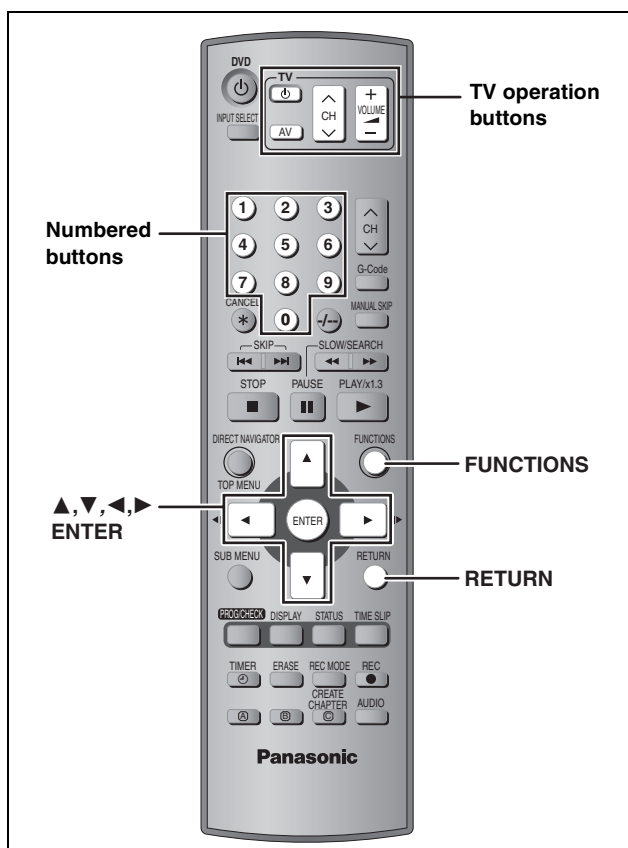
■ To restart Auto-Setup (➡page 39)

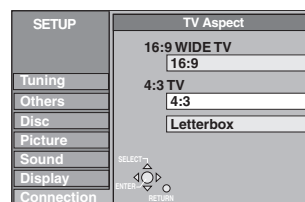You can also use the following method to restart Auto-Setup. When the unit is on and stopped

Press and hold [∨ CH] and [CH ∧] on the main unit until the Country setting screen appears.

≥All the settings except for the ratings level, ratings password and time settings return to the factory preset. The timer recording programmes are also cancelled.

Getting started

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STEP 3 Set up to match your television and remote control

TV operation buttons

Numbered buttons

▲,▼,◀,▶ ENTER

FUNCTIONS

RETURN

Selecting television type and aspect

Choose the setting to suit your television and preference.

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

2 **Press [▲, ▼, ◀, ▶] to select "SETUP" and press [ENTER].**

To exit the screen
Press [RETURN] several times.

To return to the previous screen
Press [RETURN].

3 **Press [▲, ▼] to select "Connection" and press [▶].**

4 **Press [▲, ▼] to select "TV Aspect" and press [ENTER].**

5 **Press [▲, ▼] to select the TV aspect and press [ENTER].**

- ●**16:9**: 16:9 widescreen television
- ●**4:3**: 4:3 standard aspect television
  - **RAM** Titles played as recorded.
  - **DVD-V** Video recorded for a widescreen is played as Pan & Scan (unless prohibited by the producer of the disc) (➡page 42).
- ●**Letterbox**: 4:3 standard aspect television
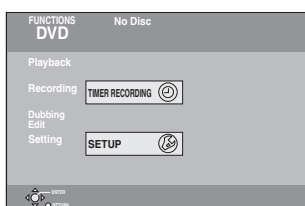 Widescreen picture is shown in the letterbox style (➡page 42).

To enjoy progressive video

You can enjoy progressive video by connecting this unit's COMPONENT VIDEO OUT terminals to an LCD/plasma television or LCD projector compatible with progressive scan (➡page 42).
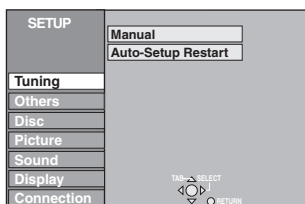
1 **While stopped**
Press [FUNCTIONS].

2 **Press [▲, ▼, ◀, ▶] to select "SETUP" and press [ENTER].**

3 **Press [▲, ▼] to select "Connection" and press [▶].**

4 **Press [▲, ▼] to select "Progressive" and press [ENTER].**

5 **Press [▲, ▼] to select "On" and press [ENTER].**
Output becomes progressive.

Note
- ●When connected to a regular television (CRT: Cathode ray tube) or a multi system television using PAL mode, even if it is progressive compatible, progressive output can cause some flickering. Turn off "Progressive" if this occurs (➡page 25).
- ●Video will not be displayed correctly if connected to an incompatible television.
- ●There is no output from the COMPONENT VIDEO OUT terminals if "AV1 Output" in the SETUP menu is set to "RGB (without component)". Set this item to either "Video (with component)" or "S-Video (with component)" (➡page 37).
- ●If the unit is connected to the television through VIDEO OUT, S-VIDEO OUT or AV1 terminal, output will be interlace irrespective of the settings.

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 [⏻ TV], enter the code with the numbered buttons.
e.g.,   01:   [0] ➡ [1]

Manufacturer and Code No.

Brand	Code
Panasonic/National	01, 02, 03, 04
GOLDSTAR/LG	15, 16
HITACHI	08
JVC	07
MITSUBISHI	09, 10
NEC	13
PHILIPS	12
SAMSUNG	12, 17, 18
SANYO	14, 19
SHARP	11
SONY	05
TOSHIBA	06

Test by turning on the television and changing channels. Repeat the procedure until you find the code that allows correct operation.
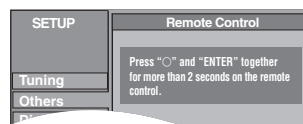● If your television brand is not listed or if the code listed for your television does not allow control of your television, this remote control is not compatible with your television.

When other Panasonic products respond to this remote control

If other Panasonic products are placed close together, change the remote control code on the main unit and the remote control (the two must match).
Under normal circumstances use the factory set code "DVD 1".

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

2 **Press [▲, ▼, ◄, ►] to select "SETUP" and press [ENTER].**

3 **Press [▲, ▼] to select "Others" and press [►].**

4 **Press [▲, ▼] to select "Remote Control" and press [ENTER].**

5 **Press [▲, ▼] to select the code ("DVD 1", "DVD 2" or "DVD 3") and press [ENTER].**

SETUP	Remote Control
Tuning	Press "○" and "ENTER" together for more than 2 seconds on the remote control.
Others	

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

7 **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 6).

Note
Executing "Shipping Condition" in the SETUP menu returns the main unit code to "DVD 1". Change the remote control code to 1 (➡step 6).

Disc information

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

Disc type	Logo	Instructions
DVD-RAM ●4.7 GB/9.4 GB, 12 cm ●2.8 GB, 8 cm Indicated in these instructions with **RAM**	DVD RAM RAM4.7	**Re-writable discs** ●You can record up to 16 hours [in EP (8Hour) mode on double-sided disc. You cannot record or play continuously on two sides] (➡page 15, Recording modes and approximate recording times). ●You can perform chasing playback (➡page 15). ●Scratch and dust resistant cartridge discs and large capacity double sided discs (9.4 GB) are commercially available. ●You can record digital broadcasts that allow "One time only recording" when using CPRM (Content Protection for Recordable Media) compatible discs (➡page 42).
DVD-R ●4.7 GB, 12 cm, 1.4 GB, 8 cm for General Ver. 2.0 ●4.7 GB, 12 cm for General Ver. 2.0/ 4×-SPEED DVD-R Revision 1.0 **DVD-R**	DVD R4.7	**One time recording discs (recordable until the disc is full)** ●You can record up to 8 hours [in EP (8Hour) mode]. ●By finalizing the disc, you can play it in a DVD player as DVD-Video (Play only) (➡page 31, 42). ●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.
●This unit cannot record to discs containing both PAL and NTSC signals. Play of discs recorded with both PAL and NTSC on another unit is not guaranteed.

Which should I use, DVD-RAM or DVD-R?
The following chart indicates the differences. Select based upon what you require.
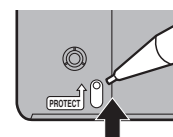
(√: Possible, ✕: Impossible)	DVD-RAM	DVD-R
Re-writable	√	✕
Edit	√	※1
Play on other players	√※2	√※3
Recording both M 1 and M 2 of bilingual broadcast	√	✕※4
Recording broadcasts that allow one copy	√※5	✕
Recording 16:9 aspect picture	√	※6

※ 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 31, 42).
※ 4 Only one is recorded (➡page 36, Bilingual Audio Selection).
※ 5 CPRM (➡page 42) 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
DVD-Audio **DVD-A**	DVD AUDIO	High fidelity music discs ●Played on this unit in 2 channels.
DVD-Video **DVD-V**	DVD VIDEO	High quality movie and music discs
Video CD **VCD**	COMPACT disc DIGITAL VIDEO	Recorded music and video (including CD-R/RW)
Audio CD **CD**	COMPACT disc DIGITAL AUDIO	Recorded music and audio (including CD-R/RW)
—		CD-R and CD-RW with music recorded in MP3 (➡page 23)

●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
●3.95 and 4.7 GB DVD-R for Authoring
●Unfinalized DVD-R recorded on other equipment (➡page 42, Finalize)
●DVD-Video with a region number other than "4" 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.		

Accessory discs

DVD-RAM
You can also record signals which allow you to make one copy, onto these discs.

9.4 GB, double-sided, type 4 cartridge:	LM-AD240E
4.7 GB, single-sided, type 2 cartridge:	LM-AB120E (set of 3, LM-AB120E3)
4.7 GB, single-sided, non-cartridge:	LM-AF120E (set of 3, LM-AF120E3)

DVD-R

4.7 GB, single-sided, non-cartridge:	LM-RF120LE

Getting started

Disc handling

■ How to hold a disc
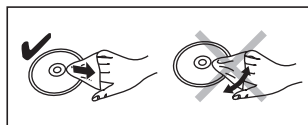Do not touch the recorded surface.

■ If there is dirt or condensation on the disc
RAM DVD-R
- Clean with an optional DVD-RAM/PD disc cleaner (LF-K200DCA1, where available).
- Do not use cleaners for CDs or cloths.

DVD-A DVD-V VCD CD
Wipe with a damp cloth and then wipe dry.

■ Handling precautions
- Do not attach labels or stickers to discs. (This may cause disc warping and un-balanced rotation, rendering it unusable.)
- Do not write on the label side with a ball-point pen or other writing instrument.
- Do not use record cleaning sprays, benzine, thinner, static electricity prevention liquids or any other solvent.
- Do not use scratch-proof protectors or covers.
- Do not use the following discs:
  –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.
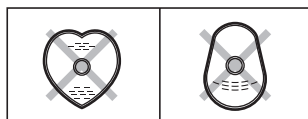
Types of disc for the type of connected TV

When you use the discs recorded either PAL or NTSC, refer to this table.

($\sqrt{}$: Possible, ✕: Impossible)

TV type	Disc	Yes/No
Multi-system TV	PAL	$\sqrt{}$
	NTSC	$\sqrt{}$※1
NTSC TV	PAL	✕
	NTSC	$\sqrt{}$※2
PAL TV	PAL	$\sqrt{}$
	NTSC	$\sqrt{}$※3 (PAL60)

※1 If you select "NTSC" in "TV System" (➡page 39), the picture may be clearer.
※2 Select "NTSC" in "TV System" (➡page 39).
※3 If your television is not equipped to handle PAL 525/60 signals the picture will not be shown correctly.

Recording television programmes

Time Slip indicator

AV3 input terminals

TIME SLIP **2** ■ ▶

INPUT SELECT

Numbered buttons

2

DIRECT NAVIGATOR

▲,▼,◀,▶ ENTER

■

II

▶

FUNCTIONS

RETURN

STATUS

◯ TIMER

TIME SLIP

AUDIO

4

3
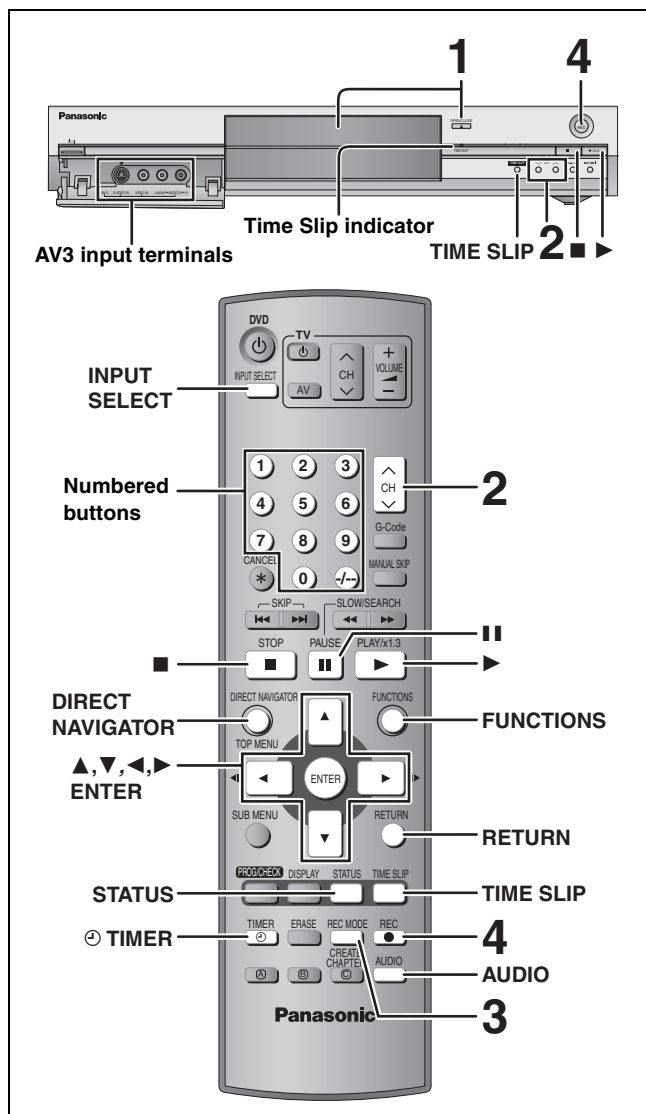
RAM DVD-R
- It is not possible to record continuously from one side of a double sided disc to the other. You will need to eject the disc and turn it over.
- When using 8 cm DVD-RAM, remove the disc from the cartridge.
- You can record up to 99 titles on one disc.
- It is not possible to record CPRM (➡page 42) protected material onto DVD-R or 2.8 GB DVD-RAM discs.
- When recording bilingual TV broadcast onto DVD-R, only one of either "M 1" or "M 2" audio can be recorded. Select at "Bilingual Audio Selection" (➡page 36).

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

Insert label-up.   Insert fully so it clicks into place.

Insert with the arrow facing in.
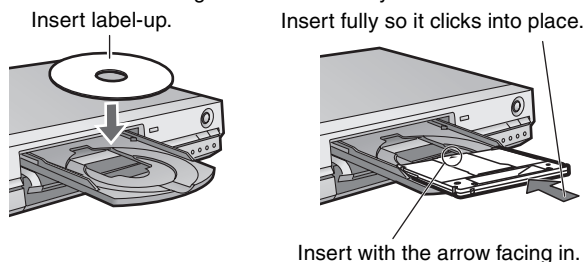
2 Press [∧ ∨ CH] to select the channel.

To select with the numbered buttons:
e.g.,   5:   [5]
          15:     [-/--] ➡ [1] ➡ [5]

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.
- RAM You can change the audio being received by pressing [AUDIO] during recording. (Does not affect the recording of audio.)

■ 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] on the main unit to select the recording time.
Each time you press the button:

30 (min.) ⟶ 60 (min.) ⟶ 90 (min.) ⟶ 120 (min.)
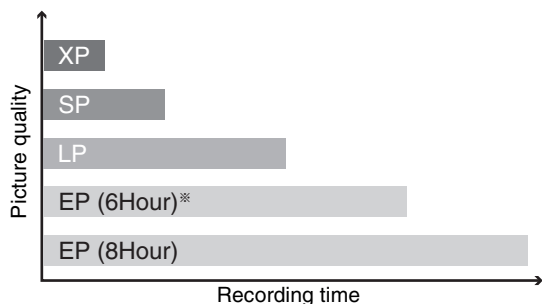↰ Counter (cancel) ⟵ 240 (min.) ⟵ 180 (min.) ↵

- This does not work during timer recordings (➡page 17) or while using Flexible Recording (➡page 16).

Recording

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※)

Picture quality / Recording time chart:

XP
SP
LP
EP (6Hour)※
EP (8Hour)

Picture quality ↑ / Recording time →

※ When "Recording time in EP mode" is set to "EP (6Hour)" in the SETUP menu.
The sound quality is lowered compared to other recording modes when using "EP (8Hour)".

FR (Flexible Recording Mode)

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

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].

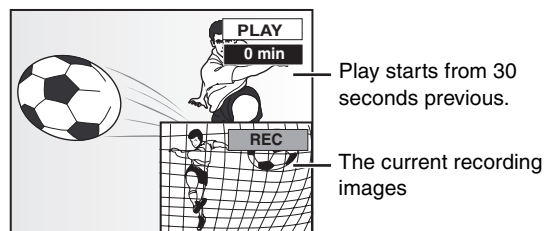Time Slip indicator on the main unit lights.

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
0 min
Play starts from 30 seconds previous.

REC
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 [⏲ TIMER].
≥You can also press and hold [■] on the main unit for more than 3 seconds to stop recording.
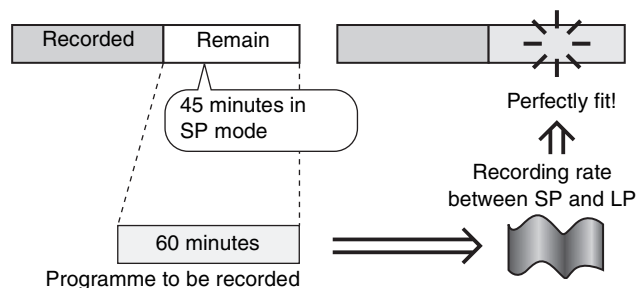
Recording

Refer to the control reference on page 14.

Flexible Recording

RAM DVD-R

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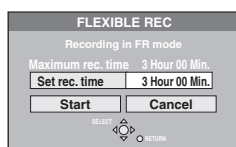e.g.,

Recorded	Remain

45 minutes in SP mode

Perfectly fit!

Recording rate between SP and LP

60 minutes

Programme to be recorded

Preparation
Select the channel to record.

1 **While stopped**

Press [FUNCTIONS].

2 **Press [▲, ▼, ◀, ▶] to select "FLEXIBLE REC" and press [ENTER].**

```
      FLEXIBLE REC
    Recording in FR mode
Maximum rec. time  3 Hour 00 Min.
 Set rec. time  │  3 Hour 00 Min.
    Start      │     Cancel
           SELECT
            ◁○▷  ○RETURN
```

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

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

4 **When you want to start recording**

Press [▲, ▼, ◀, ▶] to select "Start" and press [ENTER].

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

To exit the screen without recording
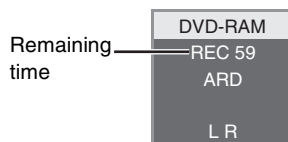Press [RETURN].

To stop recording partway
Press [∎].

To show the remaining time
Press [STATUS].

Remaining time

```
   DVD-RAM
   REC 59
    ARD

    L R
```
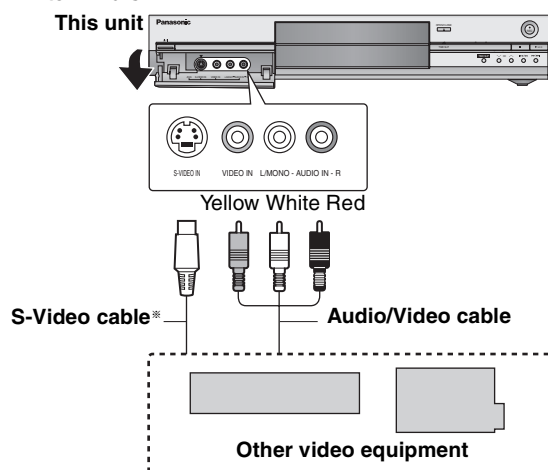
Recording from an external equipment

RAM DVD-R

Preparation
≥Connect a video cassette recorder, etc. to this unit's input terminals.
≥When recording bilingual programmes

RAM When both M 1 and M 2 is selected on the connected equipment, you can select the audio type in playback.
DVD-R Select either M 1 or M 2 on the connected equipment. (You cannot select the audio type in playback.)

≥When the output signal from the external equipment is NTSC, change the "TV System" to "NTSC" in the SETUP menu (➡page 39).
≥To reduce noise in input from external equipment set "AV-in NR" to "On" in the SETUP menu (➡page 35).

e.g., Connecting other video equipment to the AV3 input terminals

This unit

S-VIDEO IN   VIDEO IN   L/MONO - AUDIO IN - R

Yellow White Red

S-Video cable※   **Audio/Video cable**

Other video equipment

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 **When recording from other video equipment**

Start play on the other equipment.

4 **Press [● REC].**
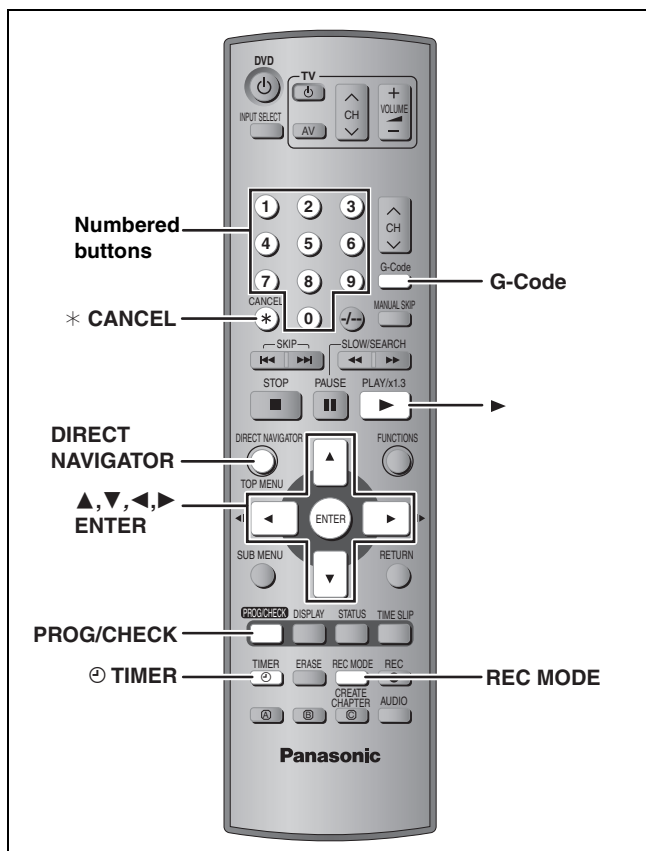
Recording starts.

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.**
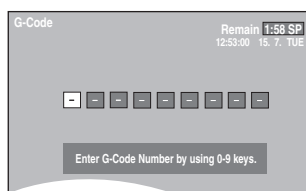
Recording

Timer recording

Numbered buttons

∗ **CANCEL**

G-Code

DIRECT NAVIGATOR

▲,▼,◄,►
ENTER

►

PROG/CHECK

◷ **TIMER**

REC MODE

Panasonic

`RAM` `DVD-R`
You can enter up to 16 programmes up to a month in advance.

Using G-CODE number to make timer recordings

Entering G-CODE numbers is an easy way of timer recording. You can find these numbers in TV listings in newspapers and magazines.
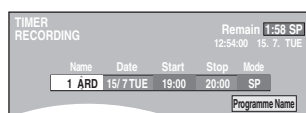
1 Press [G-Code].

2 Press the numbered buttons to enter the G-CODE number.
Press [◄] to move back to correct a digit.

3 Press [ENTER].

- ≥Confirm the programme and make corrections if necessary using [▲, ▼, ◄, ►] (➡page 18, step 3).
- ≥When "-- ---" appears in the "Name" column, you cannot set timer recording. Press [▲, ▼] to select desired programme position. After you have entered the information of a TV station, it is kept in the unit's memory.
- ≥You can also press [REC MODE] to change the recording mode.
- ≥**Programme Name**
  Press [◄, ►] to select "Programme Name" and press [ENTER] (➡page 32).

4 Press [ENTER].
The settings are stored.
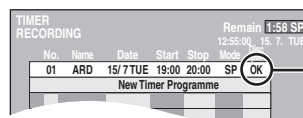
Check to make sure "OK" is displayed.

Repeat steps 1–4 to programme other recordings.

5 Press [◷ TIMER].
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, play starts when you press [►] (PLAY) or [DIRECT NAVIGATOR]. Timer recording works even during play.

■ To release the unit from recording standby
Press [◷ TIMER].
The unit turns on and "◷" goes out.
- ≥Be sure to press [◷ TIMER] before the programme start time to put the unit on recording standby. Timer recording will work only if "◷" is displayed.

■ To cancel recording when recording has already begun
Press [◷ TIMER].
- ≥You can also press and hold [■] on the main unit for more than 3 seconds to stop recording.

Note
- ≥"◷" flashes for about 5 seconds when the unit cannot go to timer recording standby (e.g., a recordable disc is not in the disc tray).
- ≥If the unit is not put in the timer recording standby mode at the latest 10 minutes before the programmed timer recording starting time, the "◷" flashes on the unit display. In this case, press [◷ TIMER] to put the unit in the timer recording standby mode.
- ≥When you programme successive timer recordings to start immediately one after the other, the unit cannot record the part at the beginning of the later programmes (a few seconds when recording with DVD-RAM and approximately 30 seconds when recording with DVD-R).
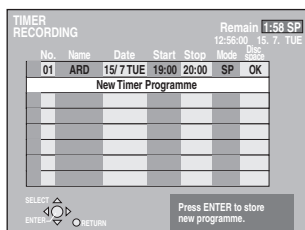
Recording

RAM DVD-R
You can enter up to 16 programmes up to a month in advance.
(Each daily or weekly programme is counted as one programme.)

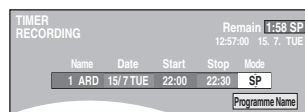## Manually programming timer recordings

1 Press [PROG/CHECK].

TIMER RECORDING					Remain 1:58 SP
					12:56:00 15. 7. TUE
No.	Name	Date	Start	Stop	Mode	Disc Check
01	ARD	15/7 TUE	19:00	20:00	SP	OK
		New Timer Programme				

SELECT
ENTER RETURN
Press ENTER to store new programme.

2 Press [▲, ▼] to select "New Timer Programme" and press [ENTER].

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

TIMER RECORDING				Remain 1:58 SP
				12:57:00 15. 7. TUE
Name	Date	Start	Stop	Mode
1 ARD	15/7 TUE	22:00	22:30	SP
				Programme Name

- ≥Press and hold [▲, ▼] to alter the Start (Start time) and Stop (Finish time) in 30-minute increments.
- ≥You can also set Name (Programme position/TV Station Name), Date, Start (Start time), and Stop (Finish time) with the numbered buttons.
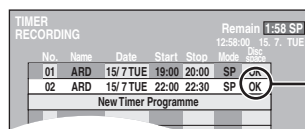- ≥You can also press [REC MODE] to change the recording mode.

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

- ≥**Programme Name** (➡page 32)
  Press [◀, ▶] to select "Programme Name" and press [ENTER].

4 Press [ENTER].

TIMER RECORDING					Remain 1:58 SP
					12:58:00 15. 7. TUE
No.	Name	Date	Start	Stop	Mode	Disc Check
01	ARD	15/7 TUE	19:00	20:00	SP	OK
02	ARD	15/7 TUE	22:00	22:30	SP	OK
		New Timer Programme				

Check to make sure "OK" is displayed.

Repeat steps 2–4 to programme other recordings.

5 Press [⊙ TIMER].

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, play starts when you press [▶] (PLAY) or [DIRECT NAVIGATOR]. Timer recording works even during play.

■ **To release the unit from recording standby**
Press [⊙ TIMER].
The unit turns on and "⊙" goes out.
- ≥Be sure to press [⊙ TIMER] before the programme start time to put the unit on recording standby. Timer recording will work only if "⊙" is displayed.

■ **To cancel recording when recording has already begun**
Press [⊙ TIMER].
- ≥You can also press and hold [■] on the main unit for more than 3 seconds to stop recording.

Note
- ≥"⊙" flashes for about 5 seconds when the unit cannot go to timer recording standby (e.g., a recordable disc is not in the disc tray).
- ≥If the unit is not put in the timer recording standby mode at the latest 10 minutes before the programmed timer recording starting time, the "⊙" flashes on the unit display. In this case, press [⊙ TIMER] to put the unit in the timer recording standby mode.
- ≥When you programme successive timer recordings to start immediately one after the other, the unit cannot record the part at the beginning of the later programmes (a few seconds when recording with DVD-RAM and approximately 30 seconds when recording with DVD-R).
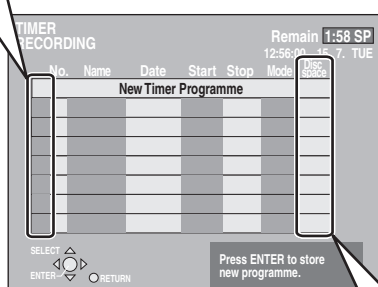
Recording

Check, change or delete a programme

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

Press [PROG/CHECK].

Icons

● This programme is currently recording.
Ⓦ The times overlap those in another programme. Recording of the programme with the later start time starts when the earlier programme finishes recording.
Ⓕ The disc was full so the programme failed to record.

▨ The material was copy-protected so it was not recorded.

Ⓧ The programme did not complete recording because the disc is dirty or some other reason.

```
TIMER
RECORDING                          Remain 1:58 SP
                                   12:56:00   15  7. TUE
   No.  Name    Date  Start  Stop  Mode  Disc
                                         space
              New Timer Programme





   SELECT
                              Press ENTER to store
   ENTER      RETURN          new programme.
```

Message displayed in the "Disc space" line

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

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

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

∎ To change a programme
Press [▲, ▼] to select the programme and press [ENTER]. (➡ page 18, step 3)

∎ To delete a programme
Press [▲, ▼] to select the programme and press [✳ CANCEL].
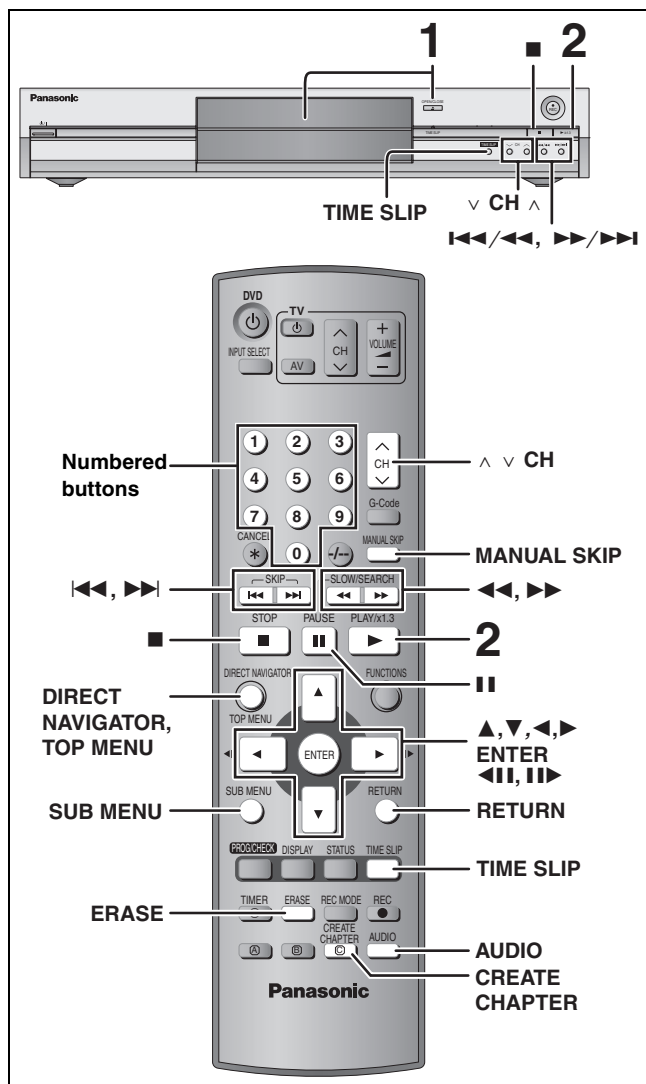
∎ To exit the timer recording list
Press [PROG/CHECK].

∎ To put the unit on timer recording standby
Press [☉ TIMER].
The unit turns off and "☉" lights on the unit's display to indicate timer recording standby has been activated.

●Programmes that failed to record are displayed gray. They are automatically deleted from the timer recording list at 4 a.m. two days later.

Playing discs

TIME SLIP

∨ CH ∧

|◄◄/◄◄, ►►/►►|

Numbered buttons

∧ ∨ CH

|◄◄, ►►|

MANUAL SKIP

2

▲,▼,◄,►

ENTER

◄|I, II►

DIRECT NAVIGATOR, TOP MENU

SUB MENU

RETURN

TIME SLIP

ERASE

AUDIO

CREATE CHAPTER

●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 DVD-RAM, remove the disc from the cartridge.

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

●Press the button again to close the tray.

Insert label-up.

Insert fully so it clicks into place.

Insert with the arrow facing in.
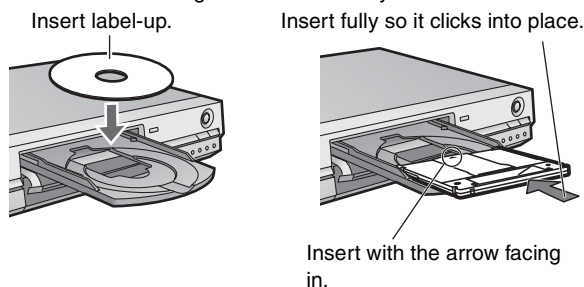
2 Press [►] (PLAY).

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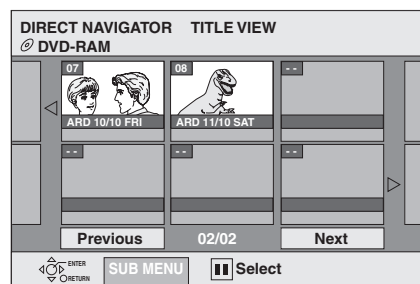**DVD-A** **DVD-V** **VCD** **CD**
Play starts from the beginning of the disc.

■ Selecting recorded programmes (titles) to play
RAM **DVD-R**

1 Press [DIRECT NAVIGATOR].


```
DIRECT NAVIGATOR   TITLE VIEW
⊘ DVD-RAM
07            08           --

ARD 10/10 FRI  ARD 11/10 SAT

--            --           --

Previous      02/02        Next

◄○► ENTER   SUB MENU    II Select
▽○△ RETURN
```

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.
Ⓝ (NTSC) Ⓟ (PAL)	Title recorded using a different encoding system from that of the TV system currently selected on the unit.

■ 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]
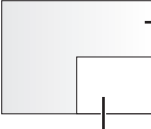   15:   [1] ➡ [5]

●**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

Stop	**Press [■].** The stopped position is memorized. The indicator on the right appears in the unit's display (excluding play lists). **Resume play function** Press [▶] (PLAY) to restart from this position.
Pause	**Press [❙❙].** Press again to restart play.
Search	**Press [◀◀] or [▶▶].** ●On the main unit, press and hold [I◀◀/◀◀] or [▶▶/▶▶I]. ●The speed increases up to 5 steps. ●Press [▶] (PLAY) to restart play. ●Audio is heard during first level search forward. You can turn off the sound during search (➡page 36, "PLAY ×1.3 & Audio during Search"). Audio is heard during all levels of search. DVD-A (excluding moving picture parts) CD
Skip	**Press [I◀◀] or [▶▶I].** ●On the main unit, press [I◀◀/◀◀] or [▶▶/▶▶I]. ●Each press increases the number of skips.
Starting from a selected item	**Press the numbered buttons.** e.g., 5: [0] ➡ [5] CD (MP3 discs only) 5: [0] ➡ [0] ➡ [5] 15: [1] ➡ [5] 15: [0] ➡ [1] ➡ [5] DVD-A Selecting groups While stopped (screen saver is displayed on the television ➡right) 5: [5] ●This works only when stopped (screen saver is displayed on the television ➡right) with some discs.
Quick View RAM The play speed can be increased without distorting the audio.	**Press and hold [▶] (PLAY/×1.3).** ●Press again to return to normal speed. ●This does not work if the setting is "Off" in "PLAY ×1.3 & Audio during Search" (➡page 36).
Slow-motion RAM DVD-R DVD-A (Motion picture parts only) DVD-V VCD	**While paused, press [◀◀] or [▶▶].** ●On the main unit, press and hold [I◀◀/◀◀] or [▶▶/▶▶I]. ●The speed increases up to 5 steps. ●Press [▶] (PLAY) to restart play. ●Forward direction only. VCD ●The unit will pause if slow-motion play is continued for 5 minutes.
Frame-by-frame RAM DVD-R DVD-A (Motion picture parts only) DVD-V VCD	**While paused, press [◀❙❙] or [❙❙▶].** ●Each press shows the next frame. ●Press [▶] (PLAY) to restart play. ●Forward direction only. VCD
Displaying the television image as a picture-in-picture	**Press [TIME SLIP].** The unit displays the television image as a picture-in-picture. ●You will hear the playback audio. ●Press [TIME SLIP] again to cancel. ●Time Slip does not work when the unit's "TV System" settings are different from the title recorded on the disc. ●The grey background does not appear on the receiving screen even if you select "On" from the "Grey Background" in the SETUP menu (➡page 36). Play images Current receiving images ●You can change the channel being received by pressing [∧ ∨ CH]. ●You cannot change the channel being received while recording.
Skipping the specified time (Time Slip) RAM DVD-R	**1 Press [TIME SLIP].** **2 Press [▲, ▼] to select the time and press [ENTER].** Play skips the specified time. ●Press [TIME SLIP] to show the play images in full.
Manual Skip RAM DVD-R Play restarts from approximately 30 seconds later.	**Press [MANUAL SKIP].**

Playing back

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 Chapter `RAM`	**Press [CREATE CHAPTER].** ●Press [◄◄, ►►] to skip to the start of a chapter. ●You cannot divide when recording and playing at the same time.

Changing audio

Press [AUDIO].

`RAM` `VCD`
LR→L→R
↑_____|

```
DVD-RAM
  PLAY


  L R ———— e.g., "L R" is selected
```

`DVD-V` `DVD-A`
You can change the audio channel number each time you press the buttons. This allows you to change things like the soundtrack language (➡page 24, Soundtrack).
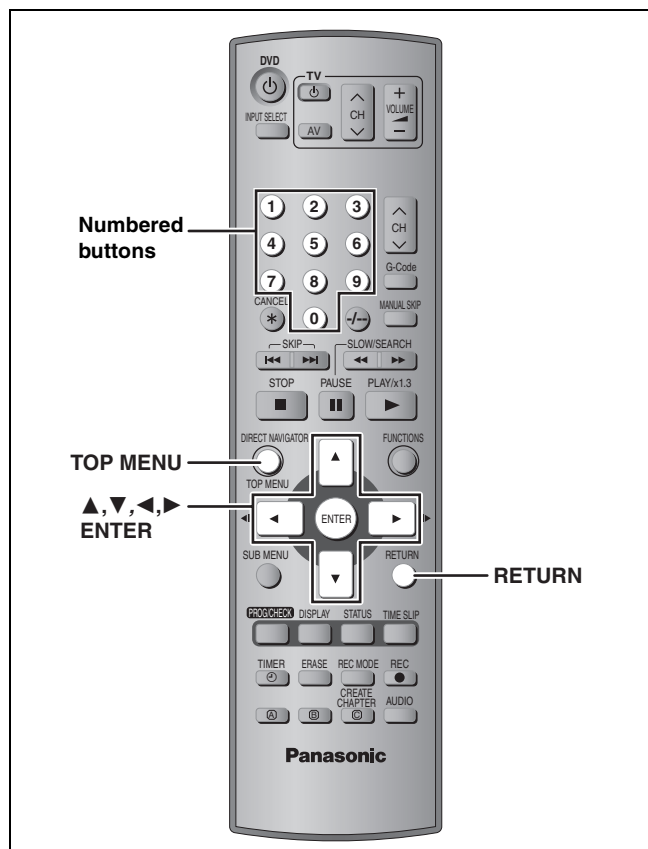
Soundtrack ◆ **1 ENG** **DD Digital 3/2.1ch**

e.g., English is selected.

Note
You cannot change the audio type when a DVD-R is in the disc tray.

Playing back

Using menus to play MP3

Numbered buttons

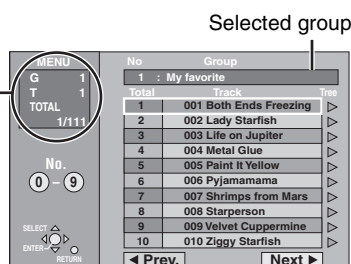**TOP MENU**

▲, ▼, ◄, ►
ENTER

RETURN

[CD] (MP3 discs only)

This unit plays MP3 files recorded on CD-R/RW designed for audio recording that are finalized (➡ page 42) on a computer. Files are treated as tracks and folders are treated as groups.

1 Press [TOP MENU].

Selected group

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.
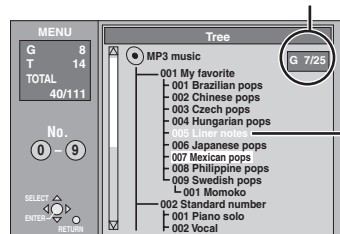
To exit the screen
Press [TOP MENU].

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.
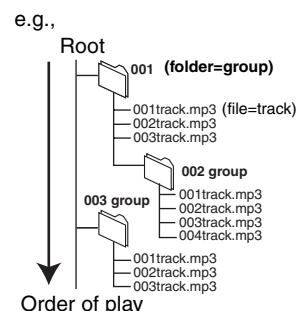

To return to the file list
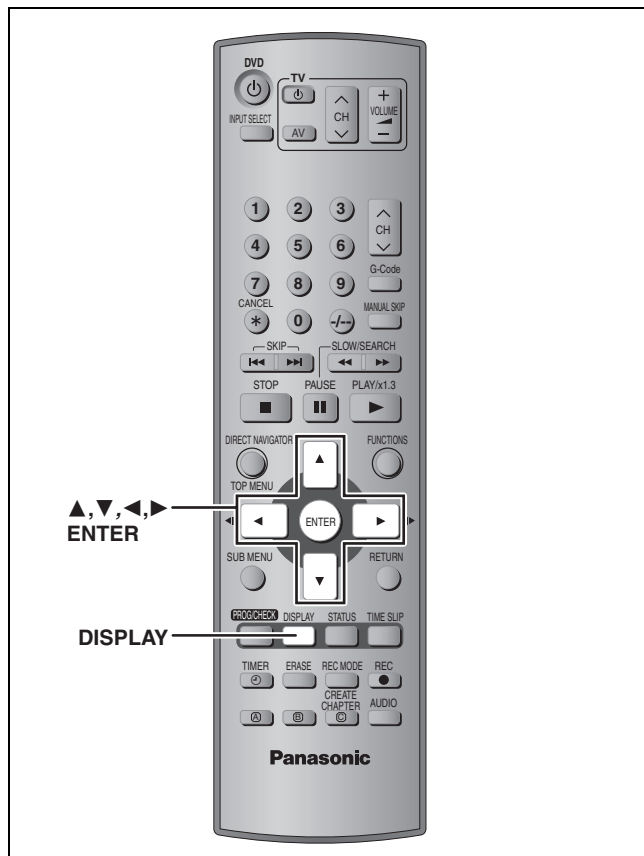Press [RETURN].

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 the recording, some items may not be playable.
● Reading or play of the disc may take time if there are a lot of still pictures or sessions.
● The display order may differ from how the order is displayed on a computer.

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.

e.g.,
Root
001 **(folder=group)**
— 001track.mp3 (file=track)
— 002track.mp3
— 003track.mp3
002 group
001track.mp3
003 group 002track.mp3
003track.mp3
004track.mp3
— 001track.mp3
— 002track.mp3
— 003track.mp3
Order of play

Playing back

Using on-screen menus

▲,▼,◀,▶
ENTER

DISPLAY

Common procedures

1 Press [DISPLAY].

Menu	Item	Setting
Disc	Soundtrack	1 DD Digital 2/0 ch
Play	Subtitle	OFF
Picture	Audio channel	L R
Sound		

≥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 the disc content

Soundtrack∗

`RAM` `DVD-R`
The disc's audio attributes appear.
`DVD-A` `DVD-V`
Select the audio and language (➡below, Audio attribute, Language).

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`

Audio channel `RAM` `VCD`

➡page 22, Changing audio

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 42) `VCD`

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

∗ You may have to use the menus (➡page 20) 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/DDDigital/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 the 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.

Picture menu—Change the picture quality

Playback NR

Reduces noise and picture degradation.

Progressive※ (➡page 42)

Select "ON" to enable progressive output.
Select "OFF" if the picture is stretched horizontally.

Transfer※ (When "Progressive" is set to "ON".)

Select the method of conversion for progressive output to suit the type of material being played (➡page 42, Film and video).

When the output signal is PAL

- **Auto**   Detects 25 frame-per-second film content and appropriately converts it.
- **Video:**   Select when using Auto, and the video content is distorted.

When the output signal is NTSC

- **Auto 1**   Detects 24 frame-per-second film content and
  (normal)**:**   appropriately converts it.
- **Auto 2:**   Compatible with 30 frame-per-second film content in addition to 24 frame-per-second film content.
- **Video:**   Select when using Auto 1 and Auto 2, and the video content is distorted.

※ Only when you have set "Progressive" to "On" in the SETUP menu (➡page 10).

Sound menu—Change the 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 bilingual recordings.

Dialog Enhancer `DVD-A` `DVD-V`
(Dolby Digital, 3-channel or over only, including a centre channel)

The volume of the centre channel is raised to make dialogue easier to hear.

Editing titles/chapters
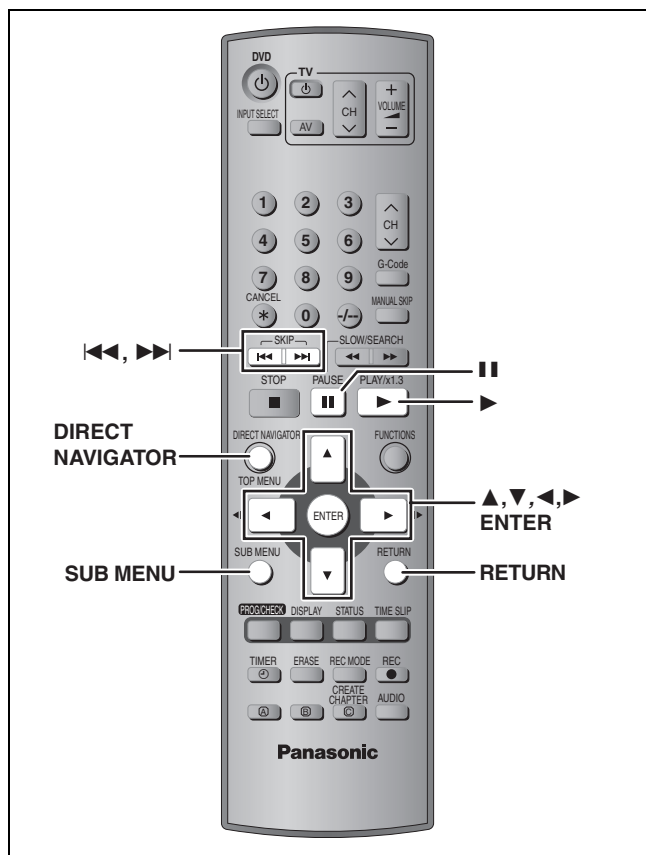
RAM **DVD-R**

Title/Chapter

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

	Title	
	Chapter	
Start		End

⬇

You can divide a title into multiple chapters. **RAM**
(➡page 22, 27, "Create Chapter")

	Title		
Chapter	Chapter	Chapter	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 31). **DVD-R**

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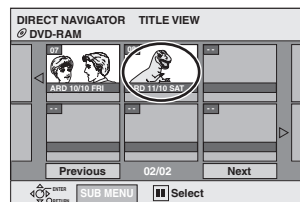   (Depends on disc contents.)

Note
≥Once erased or partially erased, 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 12, disc ➡page 31). **RAM**

1 Press [DIRECT NAVIGATOR].

2 Press [▲, ▼, ◀, ▶] to select the title.

To show other pages
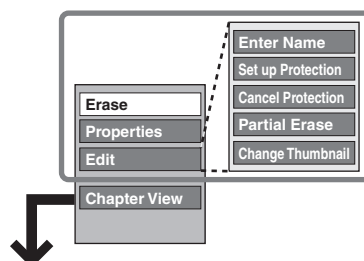Press [▲, ▼, ◀, ▶] to select "Previous" or "Next" and press [ENTER].
≥You can also press [|◀◀, ▶▶|] to show other pages.
Multiple editing
Select with [▲, ▼, ◀, ▶] and press [❙❙]. (Repeat.)
A check mark appears. Press [❙❙] again to cancel.

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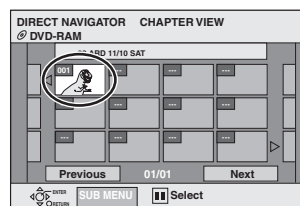≥If you select "Edit", press [▲, ▼] to select the operation and press [ENTER].

Refer to "Title operations".

■ If you select "Chapter View"

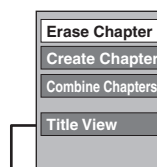## 4 Press [▲, ▼, ◀, ▶] to select the chapter.
To start play ➡ Press [ENTER].
To edit ➡ Step 5.

≥**To show other pages/Multiple editing (➡above)**

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

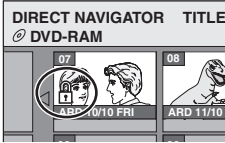Refer to "Chapter operations".

≥You can go back to Title View.
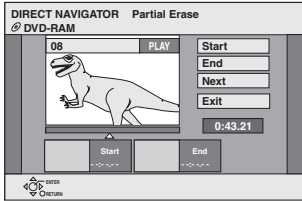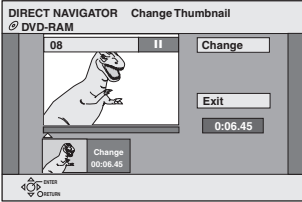
To exit the screen
Press [DIRECT NAVIGATOR].

To return to the previous screen
Press [RETURN].

Title operations

Erase※ RAM DVD-R	**Press [◄, ►] to select "Erase" and press [ENTER].** ●The available recording time on DVD-R does not increase when you erase titles.
Properties RAM DVD-R	Information (e.g., time and date) is shown. Properties Dinosaur No. 26 Time 12:19 Date 11/10/2004 MON Rec time 0:30 (SP) Name 12
Enter Name RAM DVD-R	➡page 32, Entering text
Set up Protection※ Cancel Protection※ RAM	If set, this will protect the title from accidental erasure. **Press [◄, ►] to select "Yes" and press [ENTER].** The lock symbol appears when the title is protected.
Partial Erase RAM	You can remove unnecessary parts of the recording such as commercials. **1 Press [ENTER] at the start point and end point of the section you want to erase.** **2 Press [▲, ▼] to select "Exit" and press [ENTER].** ●Select "Next" and press [ENTER] to erase other sections. **3 Press [◄, ►] to select "Erase" and press [ENTER].**
Change Thumbnail RAM DVD-R	You can change an image to be shown as a thumbnail picture in the Title View. **1 Press [►] (PLAY) to start play.** **2 Press [ENTER] when the image you want to use as a thumbnail is shown.** **3 Press [▲, ▼] to select "Exit" and press [ENTER].**

※ Multiple editing is possible.

Chapter operations

Erase Chapter※ RAM	**Press [◄, ►] to select "Erase" and press [ENTER].**
Create Chapter RAM	**1 Press [ENTER] at the point you want to create.** ●Repeat this step to divide at other points. **2 Press [▲, ▼] to select "Exit" and press [ENTER].**
Combine Chapters RAM	**Press [◄, ►] to select "Combine" and press [ENTER].** ●The selected chapter and next chapter are combined.

※ Multiple editing is possible.

For quicker editing
●Use search, Time Slip or slow-motion (➡page 21) to find the desired point.
●Press [|◄◄, ►►|] to skip to the end of a title.

Editing

FUNCTIONS

▲,▼,◄,►
ENTER

SUB MENU ———— **RETURN**
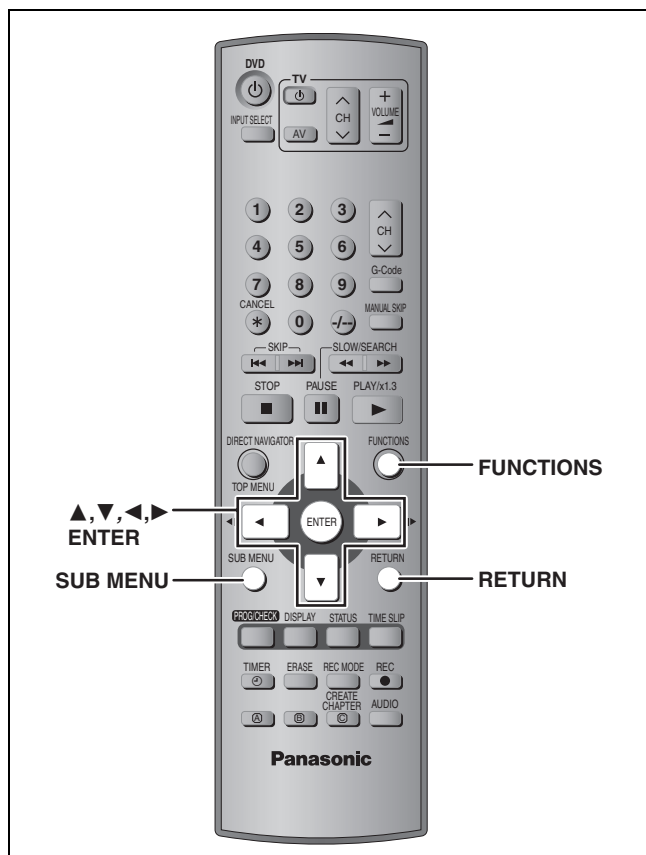
RAM

You can arrange the chapters (➡ page 26) to create a play list.

◄——— Title ———►		◄——— Title ———►	
Chapter	Chapter	Chapter	Chapter	Chapter

Play list: Chapter | Chapter

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

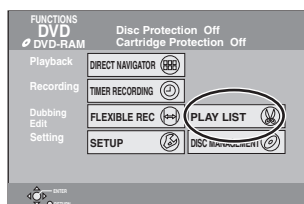●The maximum number of items on a disc:
–Play lists: 99
–Chapters in play lists: Approximately 1000
                                        (Depends on disc contents.)

Creating play lists

Preparation
Release protection (cartridge ➡page 12, disc ➡page 31).

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

2 **Press [▲, ▼, ◄, ►] to select "PLAY LIST" and press [ENTER].**
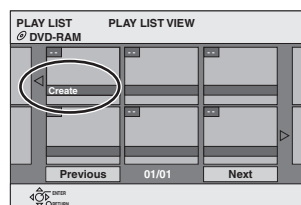
3 **Press [▲, ▼, ◄, ►] to select "Create" and press [ENTER].**

4 **Press [◄, ►] to select the source title and press [▼].**
●Press [ENTER] to select all the chapters in the title, then skip to step 6.
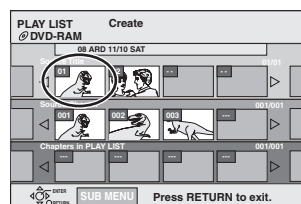
5 **Press [◄, ►] to select the chapter you want to add to a play list and press [ENTER].**
Press [▲] to cancel.
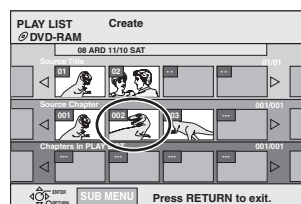
●You can also create a new chapter from the source title. Press [SUB MENU] to select "Create Chapter" and press [ENTER] (➡page 27, Create Chapter).

6 **Press [◄, ►] to select the position to insert the chapter and press [ENTER].**
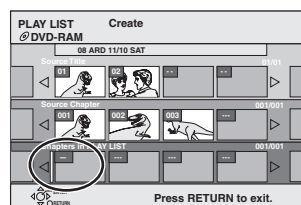
●Repeat steps 5–6 to add other chapters.
●Press [▲] to select other source titles.

7 **Press [RETURN].**

To exit the screen
Press [RETURN] several times.

To return to the previous screen
Press [RETURN].

Editing

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.**

```
PLAY LIST          PLAY LIST VIEW
⌀ DVD-RAM

12/10 SUN 0:30   Create

   Previous       01/01       Next
   ◄�)ᵉⁿᵗᵉʳ        SUB MENU    ▐▐ Select
     ⌀ᴿᴱᵀᵁᴿᴺ
```

● **To show other pages/Multiple editing (➡ page 26)**

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

● If you select "Edit", press [▲, ▼] to select the operation and press [ENTER].

```
                          Create
                          Copy
Erase                     Enter Name        Refer to "Play list
Properties                Change Thumbnail  operations".
Edit
Chapter View
```

■ **If you select "Chapter View"**

5 **Press [▲, ▼, ◄, ►] to select the chapter.**

To start play ➡ **Press [ENTER].**
To edit ➡ **Step 6.**

```
PLAY LIST          CHAPTER VIEW
⌀ DVD-RAM

01 12/10 SUN 0:30
001  02

   Previous       01/01       Next
   ◄�)ᵉⁿᵗᵉʳ        SUB MENU    ▐▐ Select
     ⌀ᴿᴱᵀᵁᴿᴺ
```

● **To show other pages/Multiple editing (➡ page 26)**

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

```
Add Chapter
Move Chapter
Create Chapter      Refer to "Chapter
Combine Chapters    operations".
Erase Chapter
PLAY LIST View
```
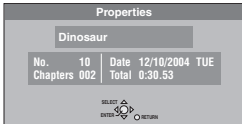
● You can go back to PLAY LIST View.

To exit the screen
Press [RETURN] several times.

To return to the previous screen
Press [RETURN].
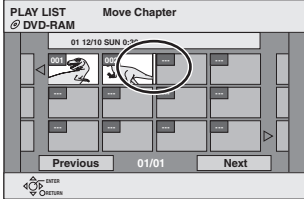
Play list operations

Erase※	**Press [◄, ►] to select "Erase" and press [ENTER].**
Properties	Play list information (e.g., time and date) is shown. **Properties** Dinosaur No. 10 / Date 12/10/2004 TUE Chapters 002 / Total 0:30.53
Create	➡ page 28, Creating play lists
Copy※	**Press [◄, ►] to select "Copy" and press [ENTER].**
Enter Name	➡ page 32, Entering text
Change Thumbnail	➡ page 27, 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 28, Creating play lists, Step 4–6
Move Chapter	**Press [▲, ▼, ◄, ►] to select the position to insert the chapter and press [ENTER].** PLAY LIST / Move Chapter ⌀ DVD-RAM 01 12/10 SUN 0: 001 00 Previous 01/01 Next
Create Chapter	➡ page 27, Create Chapter
Combine Chapters	➡ page 27, Combine Chapters
Erase Chapter※	➡ page 27, Erase Chapter

※ Multiple editing is possible.

Editing

DISC MANAGEMENT

Convenient functions
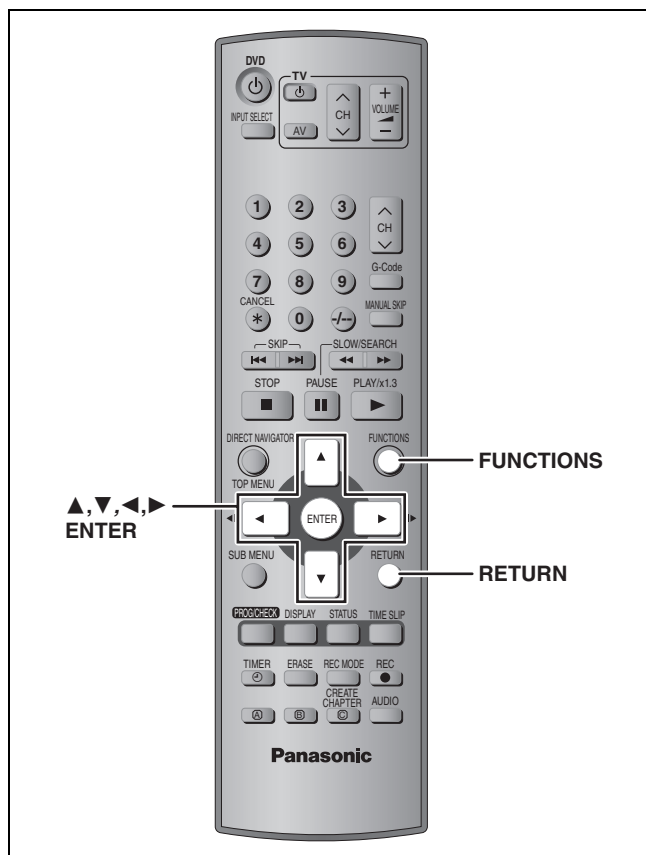
[RAM] [DVD-R]

Preparation
Release protection. [RAM]
(cartridge ➡ page 12, disc ➡ right)
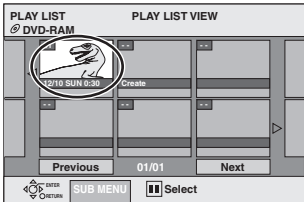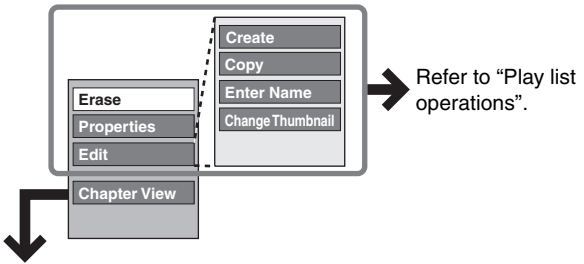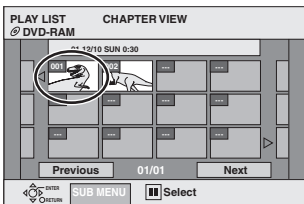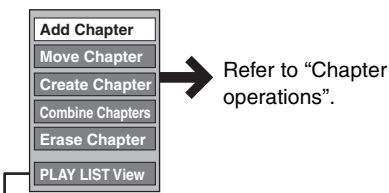
1 While stopped

Press [FUNCTIONS].

FUNCTIONS	
DVD	**Disc Protection Off**
⚿ DVD-RAM	**Cartridge Protection Off**
Playback	DIRECT NAVIGATOR ▦
Recording	TIMER RECORDING ⊙
Dubbing	FLEXIBLE REC ▦▦ PLAYLIST ◎
Edit	
Setting	SETUP ⓒ DISC MANAGEMENT ⚿
	⬦ ENTER
	○ RETURN
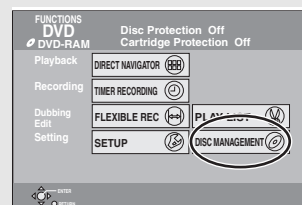
2 Press [▲, ▼, ◀, ▶] to select "DISC MANAGEMENT" and press [ENTER].
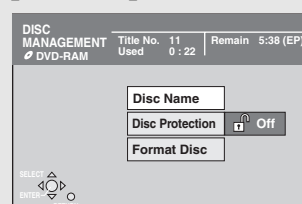
DISC	**Title No. 11**	**Remain 5:38 (EP)**
MANAGEMENT	**Used 0 : 22**	
⚿ DVD-RAM		
	Disc Name	
	Disc Protection 🔓 Off	
	Format Disc	
SELECT ▵◁○▷▽		
ENTER ○ RETURN		

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 32, Entering text

The disc name is displayed in the FUNCTIONS window.

```
FUNCTIONS          Documentary
DVD             Disc Protection  Off
DVD-RAM         Cartridge Protection  O
Playback        DIRECT NAVIGATOR
```
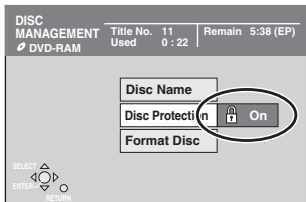
Disc Protection

RAM

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

Press [◄, ►] to set disc protection and press [ENTER].

```
DISC
MANAGEMENT   Title No.  11    Remain  5:38 (EP)
DVD-RAM      Used      0 : 22
             Disc Name
             Disc Protection    On
             Format Disc
SELECT
ENTER
```

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

Format Disc

(➡page 42, 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 mains lead while the message "Formatting the disc" 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.

Auto-Play Select

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 42, 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 mains lead 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 finalizing	After finalizing
Disc display on this unit	DVD-R	DVD-V
Recording/Editing/Entering name	√	✕
Play on other players	✕	√

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

Entering text

Numbered buttons

✳ **CANCEL**

▲, ▼, ◄, ►
ENTER

■

RETURN

II
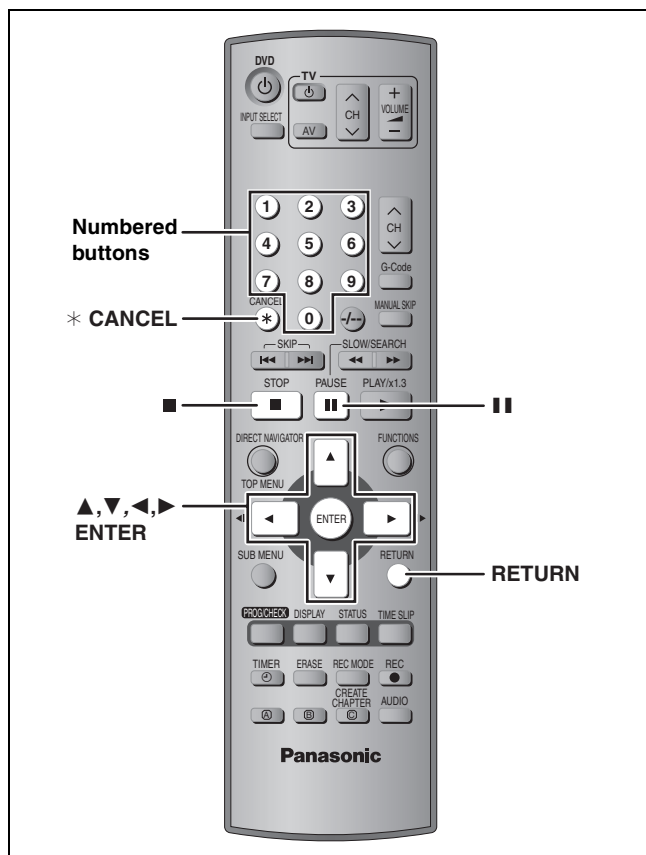
[RAM] [DVD-R]

You can give names to recorded titles, etc.

The maximum number of characters:

[RAM]	Characters
Title	64 (44✳)
Play list	64
Disc	64

✳ Title name for 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.

	Page
Title	27
Title (timer recording)	17, 18
Play list	29
Disc	31

Name field: shows the text you have entered
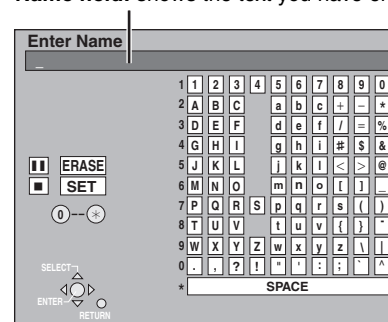
2 Press [▲, ▼, ◄, ►] to select a character and press [ENTER].

Repeat this step to enter other characters.

●**To erase a character**
Press [▲, ▼, ◄, ►] to select the character in the name field and press [II].

●**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].**
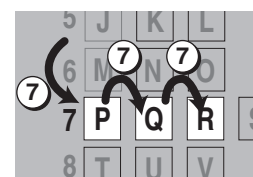
●**To enter a space**
Press [✳ CANCEL] and press [ENTER].

3 Press [■] (SET).

Returns to the previously displayed screen.

To end partway
Press [RETURN].
Text is not saved.

FUNCTIONS window and Status messages

FUNCTIONS

▲,▼,◀,▶
ENTER

STATUS

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.

```
DVD-RAM ———— Disc indication
REC ————————— Recording or play status/input channel
PLAY
Stereo ——————— TV audio type being received (➡ below)
L R —————————— Selected audio type
```
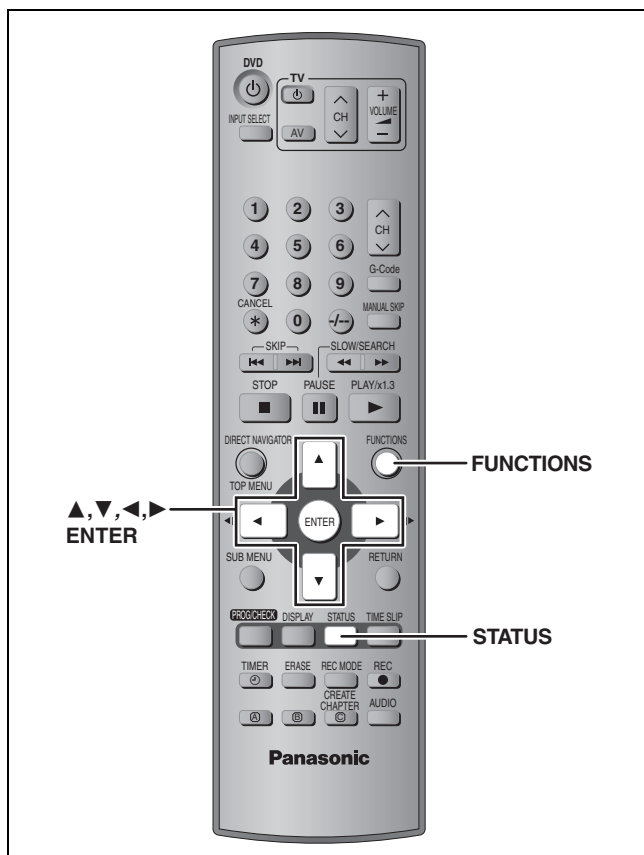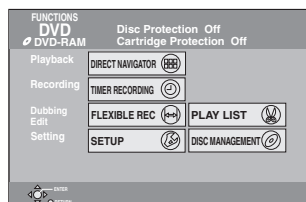
Date and time

Recording mode

Available recording time and recording mode

```
18:53:50 11.10    ■Remain    0:50 XP
■ T2 ─ 0:05.14 XP  [   ]
■ T1   0:00.10 SP
```

Play position

Elapsed play time

Elapsed recording time

No display

● **TV audio type**

STEREO: STEREO/NICAM stereo broadcast
M 1/M 2: Bilingual/NICAM dual-sound broadcast
M 1: NICAM monaural broadcast

FUNCTIONS window

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

1 **While stopped**

Press [FUNCTIONS].

```
FUNCTIONS
DVD          Disc Protection  Off
DVD-RAM      Cartridge Protection  Off
Playback    DIRECT NAVIGATOR
Recording   TIMER RECORDING
Dubbing     FLEXIBLE REC    PLAY LIST
Edit
Setting     SETUP    DISC MANAGEMENT
```

Functions displayed depend on the type of disc.

2 **Press [▲, ▼, ◀, ▶] to select an item and press [ENTER].**
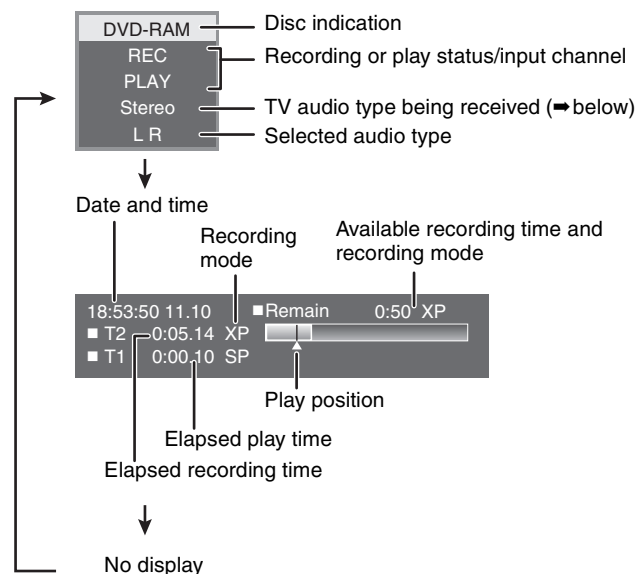
To exit the FUNCTIONS window
Press [FUNCTIONS].

Convenient functions

Changing the unit's settings

Common procedures

▲ OPEN/CLOSE   ■

Panasonic

Numbered buttons

**▲,▼,◀,▶
ENTER**

FUNCTIONS

RETURN

A
B   C

1 While stopped
Press [FUNCTIONS].

2 **Press [▲, ▼, ◀, ▶] to select "SETUP" and press [ENTER].**

Tabs	Menus	Options

SETUP

Remote Control — DVD 1
Clock
Power Save — Off
Country — Others
Shipping Condition
Default Settings

Tuning
Others
Disc
Picture
Sound
Display
Connection

TAB SELECT
RETURN

3 **Press [▲, ▼] to select the tab and press [▶].**

4 **Press [▲, ▼] to select the menu and press [ENTER].**

5 **Press [▲, ▼] to select the option and press [ENTER].**

To exit the screen
Press [RETURN] several times.

To return to the previous screen
Press [RETURN].

Summary of settings

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

Tabs	Menus	Options (Underlined items are the factory presets.)		
Tuning	**Manual** (➡page 38)			
	Auto-Setup Restart (➡page 39)			
Others	**Remote Control** (➡page 11)	●<u>DVD 1</u>	●DVD 2	●DVD 3
	Clock (➡page 40)			
	Power Save ●Refer to the following when "Power Save" is set to "On". –"FL Display" is automatically set to "Automatic" (➡page 36). –This function does not work in the timer recording standby mode.	●On: Power consumption is minimized when the unit is turned to standby (➡page 41). ●<u>Off</u>		
	Country (➡page 9)	●Australia	●New Zealand	●<u>Others</u>
	Shipping Condition All the settings except for the ratings level, ratings password and time settings return to the factory preset. The timer recording programmes are also cancelled.	●Yes ●<u>No</u>		
	Default Settings All the settings other than the programmed channels, time settings, disc language settings, ratings level, ratings password and remote control code return to the factory presets.	●Yes ●<u>No</u>		

Tabs	Menus	Options (Underlined items are the factory presets.)
Disc	**Language** Choose the language for audio, subtitle and disc menus. `DVD-V` ●Press [ENTER] to show the following settings. ●Some discs start in a certain language despite any changes you make here. ●Enter a code (➡page 37) when you selecting "Other ✳✳✳✳".	

	Soundtrack	●<u>English</u> ●French ●German ●Italian ●Spanish ●Original: The original language of each disc will be selected. ●Other ✳✳✳✳
	Subtitle	●<u>Automatic</u>: If the language selected for "Soundtrack" is not available, subtitles of that language will automatically appear if available on that disc. ●English ●French ●German ●Italian ●Spanish ●Other ✳✳✳✳
	Menus	●<u>English</u> ●French ●German ●Italian ●Spanish ●Other ✳✳✳✳

	Ratings 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
	Recording time in EP mode Select the maximum number of hours for recording in EP mode (➡page 15, Recording modes and approximate recording times).	●EP (6Hour): You can record for 6 hours on an unused 4.7 GB disc. ●<u>EP (8Hour)</u>: You can record for 8 hours on an unused 4.7 GB disc.
	DVD-Audio Video mode Playback Select "On" to play DVD-Video content on some DVD-Audio.	●On: The setting returns to "Off" when you change the disc or turn the unit off. ●<u>Off</u>
Picture	**Comb Filter** Select the picture sharpness when recording. The setting is fixed with "On" if you set "TV System" to "NTSC" (➡page 39).	●<u>On</u>: Pictures become clear and vivid. Normally, use this setting. ●Off: Select it when recording noisy pictures.
	Hybrid VBR Resolution (➡page 42, VBR)	●Automatic: The resolution is automated to provide efficient recording with less block noise. `RAM` ●<u>Fixed</u>: The resolution is fixed to ensure that there is no loss of source picture resolution while recording.
	Still Mode Select the type of picture shown when you pause play (➡page 42, 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.
	AV-in NR Reduces video tape noise while dubbing.	●On: Noise reduction works for input video. ●<u>Off</u>: Noise reduction is off. Select when you want to record input as is.

Convenient functions

RQT7444

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Tabs	Menus	Options (Underlined items are the factory presets.)
Sound	**PLAY ×1.3 & Audio during Search** You may hear sound regardless of this setting with some discs.	●<u>On</u>: Audio is heard during first level search forward. ●Off: Audio is not heard during search. Quick View (➡page 21) does not work.
	Dynamic Range Compression (Dolby Digital only) Change the dynamic range for late night viewing.	●On ●<u>Off</u>
	Bilingual Audio Selection `DVD-R` Select whether to record the main or secondary audio type when recording to DVD-R. You cannot select this when recording from an external source onto DVD-R. Select the audio on the other equipment.	●<u>M 1</u> ●M 2
	Digital Audio Output Change the settings when you have connected equipment through this unit's DIGITAL AUDIO OUT terminal (➡page 8). ●Press [ENTER] to show the following settings.	
	PCM Down Conversion Select how to output audio with a sampling frequency of 96 kHz or 88.2 kHz. ●Signals are converted to 48 kHz or 44.1 kHz despite the above settings if the signals have a sampling frequency of over 96 kHz or 88.2 kHz, or the disc has copy protection.	●On: Signals are converted to 48 kHz or 44.1 kHz. (Choose when the connected equipment cannot process signals with a sampling frequency of 96 kHz or 88.2 kHz.) ●<u>Off</u>: Signals are output as 96 kHz or 88.2 kHz. (Choose when the connected equipment can process signals with a sampling frequency of 96 kHz or 88.2 kHz.)
	Dolby Digital — 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). **Note** Not making the proper settings may result in noise, possibly damage your hearing and speakers, and digital recording may not work properly.	●<u>Bitstream</u>: When connecting to equipment displaying the Dolby Digital logo. ●PCM: When connecting to equipment not displaying the Dolby Digital logo.
	DTS	●Bitstream: When connecting to equipment displaying the DTS logo. ●<u>PCM</u>: When connecting to equipment not displaying the DTS logo.
	MPEG	●Bitstream: When connected to equipment with a built-in MPEG decoder. ●<u>PCM</u>: When connected to equipment without a built-in MPEG decoder.
Display	**On-Screen Messages** Choose whether to show status messages automatically.	●<u>Automatic</u> ●Off
	Grey Background Select "Off" if you do not want to have the unit show the grey background when reception is weak.	●<u>On</u> ●Off
	FL Display Changes the brightness of the unit's display. This setting is fixed with "Automatic" if you set "Power Save" to "On".	●<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.

Convenient functions

| Tabs	Menus	Options (Underlined items are the factory presets.)		
Connection	**TV Aspect** (➡page 10)	●16:9	●<u>4:3</u>	●Letterbox
	Progressive (➡page 10)	●On	●<u>Off</u>	
	TV System (➡page 39)	●<u>PAL</u>	●NTSC	
	AV1 Output Selects the output from the AV1 terminal. Select "RGB (without component)" for RGB output. Select "Video (with component)" or "S-Video (with component)" for component output.	●<u>Video (with component)</u> ●S-Video (with component) ●RGB (without component)		
	AV2 Input Set to "RGB (Not NTSC)" when receiving or recording RGB output video from external equipment.	●<u>Video</u> ●S-Video ●RGB (Not NTSC)		

Convenient functions

Language code list Input the code with the numbered buttons.

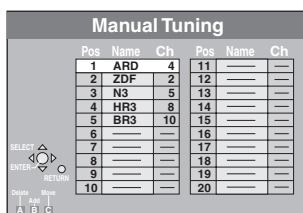|											
Abkhazian:	6566	Catalan:	6765	Gujarati:	7185	Lingala:	7678	Rhaeto-Romance:		Tamil:	8465
Afar:	6565	Chinese:	9072	Hausa:	7265	Lithuanian:	7684		8277	Tatar:	8484
Afrikaans:	6570	Corsican:	6779	Hebrew:	7387	Macedonian:	7775	Romanian:	8279	Telugu:	8469
Albanian:	8381	Croatian:	7282	Hindi:	7273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

Tuning

1 While stopped

Press [FUNCTIONS].

2 **Press [▲, ▼, ◄, ►] to select "SETUP" and press [ENTER].**

3 **Press [▲, ▼] to select "Tuning" and press [►].**

```
SETUP
              Manual
              Auto-Setup Restart
   Tuning
```
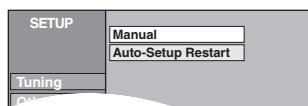
Manual

You can add or delete channels, or change programme positions.

4 **Press [▲, ▼] to select "Manual" and press [ENTER].**

```
            Manual Tuning
        Pos  Name  Ch   Pos  Name  Ch
         1   ARD    4    11   ──    ──
         2   ZDF    2    12   ──    ──
         3   N3     5    13   ──    ──
         4   HR3    8    14   ──    ──
         5   BR3   10    15   ──    ──
         6   ──    ──    16   ──    ──
SELECT   7   ──    ──    17   ──    ──
ENTER    8   ──    ──    18   ──    ──
             RETURN 9    ──    ──    19   ──    ──
        10   ──    ──    20   ──    ──
 Delete     Move
  Add
 A B  C
```

To delete a programme position

Press [▲, ▼, ◄, ►] to select a programme position and press [A].

To add a blank programme position

Press [▲, ▼, ◄, ►] to select a programme position and press [B].

To move a TV station to another programme position

① Press [▲, ▼, ◄, ►] to select a programme position and press [C].

② Press [▲, ▼, ◄, ►] to select the new programme position to which you want to assign the TV station and press [ENTER].

■ **To change the tuning settings for individual programme position**

5 **Press [▲, ▼, ◄, ►] to select a programme position and press [ENTER].**

```
 Manual     Pos          1
 Tuning     Name        ARD
            Channel      4
            Fine Tuning  Auto
            Mono         Off

   CHANGE

     RETURN


    RETURN :  leave
```

Press [▲, ▼] to select an item and press [►].

Pos	**To change the programme position in which the TV stations are assigned** Press [▲, ▼] or numbered buttons to select the number of the desired programme position and press [ENTER].
Name	**To enter or change the name of a TV station** Press [▲, ▼, ◄, ►] to enter station name and press [ENTER]. If the station name needs a blank space, select the blank between "Z" and "✳".
Channel	**To enter newly available TV stations or change the channel number of an already tuned TV station** Press [▲, ▼] or the numbered buttons to enter the channel number of the desired TV station. Wait a few moments until the desired TV station has been tuned. After the desired TV station is tuned, press [ENTER].
Fine Tuning	**To obtain the best tuning condition** Press [▲, ▼] to adjust the best tuning condition and press [ENTER]. ●Press [►] to return to "Auto".
Mono	**To select the type of sound to be recorded** Press [▲, ▼] to select "On" if the stereo sound is distorted due to inferior reception conditions, or if you want to record the normal (mono) sound during a stereo, bilingual or NICAM broadcast, and press [ENTER].

Convenient functions

Auto-Setup Restart

You can restart auto channel setting if Auto-Setup (➡page 9) fails for some reason.

4 **Press [▲, ▼] to select "Auto-Setup Restart" and press [ENTER].**
The confirmation screen appears.

5 **Press [◄, ►] to select "Yes" and press [ENTER].**
The country setting menu appears.

6 **Press [◄, ►] to select the country and press [ENTER].**
Auto-Setup starts.

To exit the screen
Press [RETURN] several times.

To return to the previous screen
Press [RETURN].

List of TV Reception Channels

Country	VHF	UHF	CATV
Australia	0-12	28-69	45-470 MHz
New Zealand	1-11	21-69	44-470 MHz

TV System

Change this setting if you connect an NTSC television or to record NTSC video from another source.

1 While stopped
Press [FUNCTIONS].

2 **Press [▲, ▼, ◄, ►] to select "SETUP" and press [ENTER].**

3 **Press [▲, ▼] to select "Connection" and press [►].**

4 **Press [▲, ▼] to select "TV System" and press [ENTER].**

5 **Press [▲, ▼] to select the TV system and press [ENTER].**
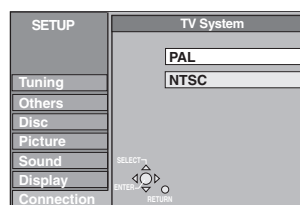
- ●**PAL** (factory preset)
  –Select when connecting to a PAL or Multi-system television. Programmes recorded using NTSC are played as PAL 60.
  –Select to record television programmes and PAL input from other equipment.
- ●**NTSC**
  –Select when connecting to a NTSC television. Television programmes cannot be recorded properly.
  –Select to record NTSC input from other equipment.

The confirmation screen appears.

6 **Press [◄, ►] to select "Yes" and press [ENTER].**

To exit the screen
Press [RETURN] several times.

To return to the previous screen
Press [RETURN].

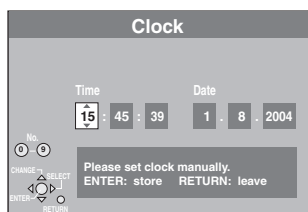■ **To change the setting all at once (PAL⟷NTSC)**
While stopped, keep pressing [■] and [▲ OPEN/CLOSE] on the main unit for 5 or more seconds.

Convenient functions

RQT7444

Refer to the control reference on page 34.

Clock settings

In the case of a power failure, the clock setting remains in memory for approximately 60 minutes.

1 **While stopped**

Press [FUNCTIONS].

2 **Press [▲, ▼, ◄, ►] to select "SETUP" and press [ENTER].**

3 **Press [▲, ▼] to select the "Others" and press [►].**

4 **Press [▲, ▼] to select "Clock" and press [ENTER].**

Clock

Time   Date
15 : 45 : 39   1 . 8 . 2004

No.
① ②

CHANGE   SELECT

ENTER

RETURN

Please set clock manually.
ENTER: store   RETURN: leave

5 **Press [◄, ►] to select the item you want to change.**

The items change as follows:
Hour⟷Minute⟷Second⟷Day⟷Month⟷Year

6 **Press [▲, ▼] to change the setting.**

You can also use the numbered buttons for setting.

7 **Press [ENTER] when you have finished the settings.**

The clock starts.

To exit the screen
Press [RETURN] several times.

To return to the previous screen
Press [RETURN].

Child Lock
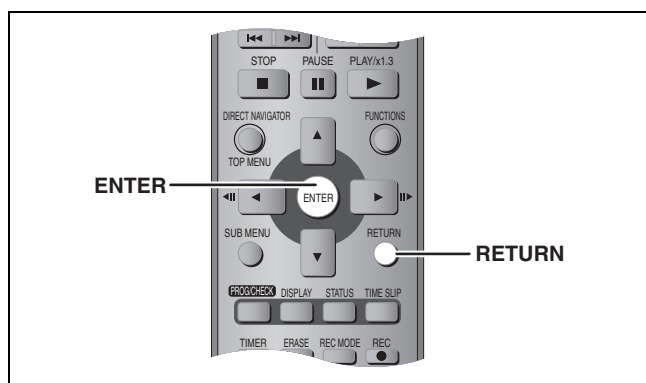
The Child Lock deactivates all buttons on the unit and remote control. Use it to prevent other people from operating the unit.

Press and hold [ENTER] and [RETURN] simultaneously until "X HOLD" appears on the unit's display.

If you press a button while the Child Lock is on, "X HOLD" appears on the unit's display and operation is impossible.

To cancel the Child Lock
Press and hold [ENTER] and [RETURN] simultaneously until "X HOLD" disappears.

Specifications

Recording system DVD Video Recording format (DVD-RAM), DVD-Video format (DVD-R)

Recordable discs

DVD-RAM: 12 cm 4.7 GB, 12 cm 9.4 GB, 8 cm 2.8 GB
DVD-R: 12 cm 4.7 GB, 8 cm 1.4 GB (for General Ver. 2.0)
12 cm 4.7 GB (for General Ver. 2.0/4×-SPEED DVD-R Revision 1.0)

Recording time Maximum 8 hours (with 4.7 GB disc)
XP: Approx. 1 hour, SP: Approx. 2 hours
LP: Approx. 4 hours, EP: Approx. 6 hours/8 hours

Playable discs

DVD-RAM: 12 cm 4.7 GB, 12 cm 9.4 GB , 8 cm 2.8 GB
DVD-R: 12 cm 4.7 GB, 8 cm 1.4 GB (for General Ver. 2.0)
12 cm 4.7 GB (for General Ver. 2.0/4×-SPEED DVD-R Revision 1.0)
DVD-Video
DVD-Audio
Video CD
CD-Audio (CD-DA)
CD-R/RW (MP3, CD-DA, Video CD formatted discs)

LASER Specification

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

Audio

Recording System: Dolby Digital 2ch
Audio In: AV1/AV2 (21 pin), AV3/AV4 (pin jack)
Input Level: Standard: 0.5 Vrms, Full scale: 2.0 Vrms at 1 kHz
Input Impedance: More than 10 kΩ
Audio Out: AV1/AV2 (21 pin), Audio Out (pin jack)
Output Level: Standard: 0.5 Vrms, Full scale: 2.0 Vrms at 1 kHz
Output Impedance: Less than 1 kΩ
Digital Audio Out: Optical terminal (PCM, Dolby Digital, DTS, MPEG)

Television System

Tuner System: PAL-BGH

Country	Channel coverage
Australia	VHF: CH E0–E12 UHF: CH 28–69 CATV: 45 MHz–470 MHz
New Zealand	VHF: CH E1–E11 UHF: CH 21–69 CATV: 44 MHz–470 MHz

Video

Video System:

PAL colour signal, 625 lines, 50 fields
NTSC colour signal, 525 lines, 60 fields
Recording System: MPEG2 (Hybrid VBR)
Video In:
AV1/AV2 (21 pin), AV3/AV4 (pin jack) 1 Vp-p 75 Ω, termination
S-Video In:
AV2 (21 pin), AV3/AV4 (S terminal) 1 Vp-p 75 Ω, termination
RGB In:
AV2 (21 pin) 0.7 Vp-p (PAL) 75 Ω, termination
Video Out:
AV1/AV2 (21 pin), Video Out (pin jack) 1 Vp-p 75 Ω, termination
S-Video Out:
AV1 (21 pin), S-Video Out (S terminal) 1 Vp-p 75 Ω, termination
RGB Out:
AV1 (21 pin) 0.7 Vp-p (PAL) 75 Ω, termination

Component video output (NTSC 480P/480I, PAL 576P/576I)
Y: 1.0 Vp-p 75 Ω, termination
P_B: 0.7 Vp-p 75 Ω, termination
P_R: 0.7 Vp-p 75 Ω, termination

Others

Region code # 4
Operating temperature: 5–40 °C
Operating humidity range: 10–80 % RH (no condensation)
Power supply: AC 220–240 V, 50 Hz
Power consumption: 29 W
Dimensions (W×D×H): Approx. 430×274×79 mm
Mass: Approx. 3.5 kg

Power consumption in standby mode:
Approx. 3 W (Power Save mode)

Note

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

Glossary

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

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

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-Videos are recorded using either film or video. This unit can determine which type has been used, then uses the most suitable method of progressive output.
For PAL
Film is 25 frames per second.
Video is 50 fields per second (two fields making up one frame).
For NTSC
Film is 24 or 30 frames per second, with motion picture film generally being 24 frames per second.
Video is 60 fields per second (two fields making up one frame).

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

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

Frames and fields
Frames refer to the single images that constitute the video you see on your television. Each frame consists of two fields.

Frame   Field   Field
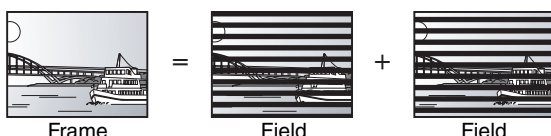
- A frame still shows two fields, so there may be some blurring, but picture quality is generally better.
- A field still shows less picture information so it may be rougher, but there is no blurring.

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
The PAL video signal standard has 576 (or 625) interlaced (I) scan lines, whereas progressive scanning, called 576P (or 625P), uses twice the number of scan lines. For the NTSC standard, these are called 480I (or 525I) and 480P (or 525P) respectively.
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.

Reference

Frequently asked questions

Set up		Page
What equipment is necessary to play multi channel surround sound?	●DVD-Video: You can play DVD-Video multi channel surround by digitally connecting an amplifier equipped with a Dolby Digital, DTS or MPEG decoder. ●DVD-Audio: This unit plays DVD-Audio in 2 channels. You cannot play multi channel surround sound.	**8** —
Are the headphones and speakers directly connected to the unit?	●You cannot directly connect to the unit. Connect through the amplifier etc.	**8**
The television has both S-VIDEO IN terminal and COMPONENT VIDEO IN terminals. Which terminal should I connect with?	●Connecting with the component video out terminal provides a more vivid picture compared to connecting with the S-Video out terminal. If you have an LCD/plasma television or LCD projector compatible with progressive scan, connect through the component video terminals for high-quality progressive video. If you have a CRT television or a multi system television using PAL mode that is compatible with progressive scan, we cannot recommend progressive output as some flickering can occur.	**7**
Is my television progressive output compatible?	●All Panasonic televisions that have 576P (625P)/480P (525P) input terminals are compatible. Consult the manufacturer if you have another brand of television.	—

Disc		
Can I play DVD-Video, DVD-Audio and Video CDs bought in another country?	●You cannot play DVD-Video if their region number does not include "4" or "All".	**Cover**
Can a DVD-Video that does not have a region number be played?	●The DVD-Video region number indicates the disc conforms to a standard. You cannot play discs that do not have a region number.	—
Please tell me about DVD-R and DVD-RW compatibility with this unit.	●This unit records and plays DVD-R. However, you cannot record onto DVD-R discs that are finalized. ●This unit also records and plays 1×–4× recording speed DVD-R discs. ●This unit does not record or play DVD-RW.	— — —
Please tell me about CD-R and CD-RW compatibility with this unit.	●You can play CD-R and CD-RW on this unit that are created using a compatible format. ●You cannot write to a CD-R or CD-RW with this unit.	**12, 23** —

Recording		
Can I record from a commercially purchased video cassette or DVD?	●Most commercially sold video cassettes and DVD are copy protected; therefore, recording is usually not possible.	—
Can a DVD-R recorded on this unit be played on other equipment?	●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.	**31**
How many times can I write to a DVD-RAM disc?	●You can write to the disc approximately 100,000 times depending upon the conditions of use.	—
Can I record digital audio signals using this unit?	●You cannot record digital signals. The digital audio terminals on this unit are for output only.	—
Can a digital audio signal from this unit be recorded to other equipment?	●You can record if using the PCM signal. When recording DVD, change the "Digital Audio Output" settings to the following in the SETUP menu. –PCM Down Conversion:　On –Dolby Digital/DTS/MPEG:　PCM However, only as long as digital recording from the disc is permitted and the recording equipment is compatible with a sampling frequency of 48 kHz. ●You cannot record MP3 signals.	**36** —
Can I switch to bilingual broadcast during recording?	●With DVD-RAM, you can. Just press [AUDIO]. ●With DVD-R, you cannot. Change before recording with the "Bilingual Audio Selection" in the SETUP menu.	**22** **36**

Reference

Error messages

On the television **Page**

Cannot finish recording completely.	●The programme was copy-protected.	—
	●The disc may be full.	—
Cannot record on the disc.	●The disc may be dirty or scratched.	**13**
Please check the disc.		
Unable to format.		
Cannot record. Disc is full.	●Create space by erasing any unnecessary titles. **RAM**	**22, 27, 31**
Cannot record. Maximum number of titles recorded.	●Use a new disc. **RAM** **DVD-R**	—
Error has occurred. Please press ENTER.	●Press [ENTER] to start recovery process. You cannot operate the unit while it is recovering ("SELF CHECK" appears on the unit's display).	—
No Disc	●The disc may be upside down.	—
Please change the disc.	●There may be a problem with the disc. Press [▲ OPEN/CLOSE] on the main unit to remove it and check it for scratches or dirt. (The unit turns off automatically after you open the tray.)	**13**
This is a non-recordable disc.	●The unit cannot record on the disc you inserted. Insert a DVD-RAM or unfinalized DVD-R.	—
This disc is not properly formatted. Formatting is necessary using DISC MANAGEMENT.	●You inserted an unformatted DVD-RAM. Format the disc with this unit.	**31**
⊘	●The operation is prohibited by the unit or disc.	—

On the unit's display

HARD ERR	●If there is no change after turning the unit on and off, consult the dealer where the unit was purchased.	—
NO READ	●The disc is dirty or badly scratched. The unit cannot record, play, or edit.	**13**
	●You have used a DVD-RAM/PD lens cleaner and it has finished. Press [▲ OPEN/CLOSE] on the main unit to eject the disc.	—
PROG FULL	●There are already 16 timer programmes. Delete unnecessary timer programmes.	**19**
REMOTE DVD □ ("□" stands for a number.)	●The remote control and main unit are using different codes. Change the code on the remote control. REMOTE DV D1 Press and hold [ENTER] and the indicated number button at the same time for more than 2 seconds.	**11**
SELF CHECK	●The unit is starting up. Wait until the message disappears.	—
U14	●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.	—
U99	●The unit fails to operate properly. Press [⏻/I] on the main unit to switch the unit to standby. Now press [⏻/I] on the main unit again to turn the unit on.	—
UNSUPPORT	●You have inserted a disc the unit cannot play or record on.	**12**
X HOLD	●The Child Lock function is activated. Press and hold [ENTER] and [RETURN] simultaneously until "X HOLD" disappears.	**40**

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, where available)** about once every year, depending on frequency of use and the operating environment. Read the lens cleaner's instructions carefully before use.

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, consult your dealer for instructions.

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.	●Image disturbance during search. ●Poor reception due to atmospheric conditions.

Power   **Page**

No power.	●Insert the AC mains lead securely into a known active AC mains socket.	**7**
The unit switches to the standby mode.	●One of the unit's safety devices is activated. Press [⏻/I] on the main unit to turn the unit on.	—

Displays

The display is dim.	●Change "FL Display" in the SETUP menu.	**36**
"0:00" is flashing on the unit's display.	●Set the clock.	**40**
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.**	●Times shown may disagree with actual times. ●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. ●Even if you erase recorded content from the DVD-R, there is no increase in disc space.	— — — —
Compared to the actual recorded time, the remaining time displayed is less. (Only when recording in NTSC)	●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 a slight 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.	—

TV screen and video

Television reception worsens after connecting the unit.	●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.	—
Status messages do not appear.	●Select "Automatic" in "On-Screen Messages" in the SETUP menu.	**36**
The grey background does not appear.	●Select "On" in "Grey Background" in the SETUP menu.	**36**
The 4:3 aspect ratio picture expands left and right. **Screen size is wrong.**	●Use the television to change the aspect. If your television does not have that function, set "Progressive" in the Picture menu to "OFF". ●Check the settings for "TV Aspect" in the SETUP menu.	**25** **10**
There is a lot of after-image when playing video.	●Set "Playback NR" in the Picture menu to "OFF".	**25**
When playing DVD-Video using progressive output, one part of the picture momentarily appears to be doubled up.	●Set "Progressive" in the Picture 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.	**25**
There is no apparent change in picture quality when adjusted with the Picture menu in the on-screen menus.	●The effect is less perceivable with some types of video.	—
The images from this unit do not appear on the television. **Picture is distorted.**	●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., AV 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.	**7** — —

Sound

No sound.
Low volume.
Distorted sound.
Cannot hear the desired audio type.
	●Check the connections and settings. Check the input mode on the amplifier if you have connected one.
	●Press [AUDIO] to select the audio.
	●Turn off V.S.S. in the following cases.
	  –When using discs that do not have surround sound effects such as Karaoke discs.
	  –When playing bilingual broadcast programmes.
	●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.
		7, 8, 36
		
		22
		25
		
		—

Reference

45

Sound (Continued)   **Page**

Cannot switch audio.	●You cannot change the audio type when a DVD-R is in the disc tray.	—
	●You have used a digital connection. Set "Dolby Digital" to "PCM" or connect using audio cables (analog connection).	36, 8
	●There are discs which audio cannot be changed because of how the disc was created.	—

Operation

Cannot operate the television. The remote control doesn't work.	●Change manufacturer code. Some televisions cannot be operated even if you change the code.	11
	●The remote control and main unit are using different codes. Change the code on the remote control.	11
	REMOTE ∏V 0∏ Press and hold [ENTER] and the indicated number button at the same time for more than 2 seconds.	
	●The batteries are depleted. Replace them with new ones.	4
	●Coloured glass may obstruct the signal reception/transmission.	—
	●Don't place the signal sensor in direct sunlight or in areas that may be subject to sunlight exposure.	—
	●The child lock function is activated.	40
The unit is on but cannot be operated.	●Some operations may be prohibited by the disc.	—
	●The unit is hot ("U14" appears on the display). Wait for "U14" to disappear.	—
	●One of the unit's safety devices may have been activated. Reset the unit as follows: Press [⏻/I] on the main unit to switch the unit to standby. If the unit doesn't switch to standby, press and hold [⏻/I] on the main unit for about 10 seconds. The unit is forcibly switched to standby. Alternatively, disconnect the AC mains lead, wait one minute, then reconnect it.	—
Cannot eject disc.	●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. If the Child Lock function is activated, above operation does not work. Cancel the Child Lock function.	40
Cannot tune channels.	●Check the connections.	7

Recording and timer recording

Cannot record.	●You haven't inserted a disc or the disc you inserted cannot be recorded on. Insert a disc the unit can record onto.	12
	●The disc is un-formatted. Format the disc. **RAM**	31
	●The write-protect tab on the cartridge is set to PROTECT, or the disc is protected with DISC MANAGEMENT.	12, 31
	●Some programmes have limitations on the number of times they can be recorded (CPRM).	42
	●The disc is full or nearly full. Erase un-needed titles or use another disc.	22, 27, 31
	●You cannot record on finalized DVD-R discs.	—
	●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.	—
	●A DVD-R recorded on this unit may not be recordable on other Panasonic DVD recorders.	—
Timer recording does not work properly. G-CODE programming does not work properly.	●The timer programme is incorrect or different timer programme times overlap. Correct the programme.	19
	●The unit is not on timer recording standby. ("☉" on the unit's display is not on.) Press [☉ TIMER].	17, 18
	●Set the clock.	40
Timer recording does not stop even when [■] is pressed.	●While using timer recording, press [☉ TIMER]. ("☉" disappears.)	17, 18
The timer programme remains even after recording finishes.	●The timer programme remains if set to daily or weekly.	18
A part or whole of a recorded title has been lost.	●If there is a power failure or the plug is disconnected from the household AC mains socket while recording or editing, the title may be lost or the disc may become unusable. You will have to format the disc (**RAM**) or use a new disc. We cannot offer any guarantee regarding lost programmes or discs.	—

Reference

Play / **Page**

		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. ●You tried to play a blank DVD-RAM/DVD-R, or discs unplayable on this unit.	**20** **12**
DVD-Video is not played.	●Some DVD-Video cannot be played when you change the ratings level.	**35**
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.	●Subtitles are not recorded on the disc. ●Turn the subtitles on.	— **24**
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 [I◀◀/◀◀] and [▶▶/▶▶I] 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 "PLAY ×1.3 & Audio during Search". ●This does not work when audio is other than Dolby Digital. ●This does not work when recording is in XP or FR mode.	**36** — —
The resume play function does not work.	●This function only works when the indicator on the right appears 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.	— —
The Video CD picture does not display properly.	●When connecting to Multi-system TV, select "NTSC" in "TV System" in the SETUP menu. ●When connecting to PAL TV, the lower part of the picture cannot be displayed correctly during search.	**39** —
Time Slip does not work.	●Time Slip does not work when the unit's "TV System" settings are different from the title recorded on the disc.	**39**

Edit

Cannot format.	●The disc is dirty. Use a special cleaner and wipe clean. ●You tried formatting a disc that is not compatible with this unit.	**13** **12**
Cannot create chapters. **Cannot mark the start point or the end point during "Partial Erase" operation.**	●The unit writes the chapter 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.	**27**
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.	—

Safety precautions

Placement

Set the unit up on an even surface away from direct sunlight, high temperatures, high humidity, and excessive vibration. These conditions can damage the cabinet and other components, thereby shortening the unit's service life.
Do not place heavy items on the unit.

Voltage

Do not use high voltage power sources. This can overload the unit and cause a fire.
Do not use a DC power source. Check the source carefully when setting the unit up on a ship or other place where DC is used.

AC mains lead protection

Ensure the AC mains lead is connected correctly and not damaged. Poor connection and lead damage can cause fire or electric shock. Do not pull, bend, or place heavy items on the lead.
Grasp the plug firmly when unplugging the lead. Pulling the AC mains lead can cause electric shock.
Do not handle the plug with wet hands. This can cause electric shock.

Foreign matter

Do not let metal objects fall inside the unit. This can cause electric shock or malfunction.
Do not let liquids get into the unit. This can cause electric shock or malfunction. If this occurs, immediately disconnect the unit from the power supply and contact your dealer.
Do not spray insecticides onto or into the unit. They contain flammable gases which can ignite if sprayed into the unit.

Service

Do not attempt to repair this unit by yourself. If sound is interrupted, indicators fail to light, smoke appears, or any other problem that is not covered in these instructions occurs, disconnect the AC mains lead and contact your dealer or an authorized service center. Electric shock or damage to the unit can occur if the unit is repaired, disassembled or reconstructed by unqualified persons.

Extend operating life by disconnecting the unit from the power source if it is not to be used for a long time.

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